DOM of Sri-Lanka's expectations of new-generation satellites for hazard monitoring

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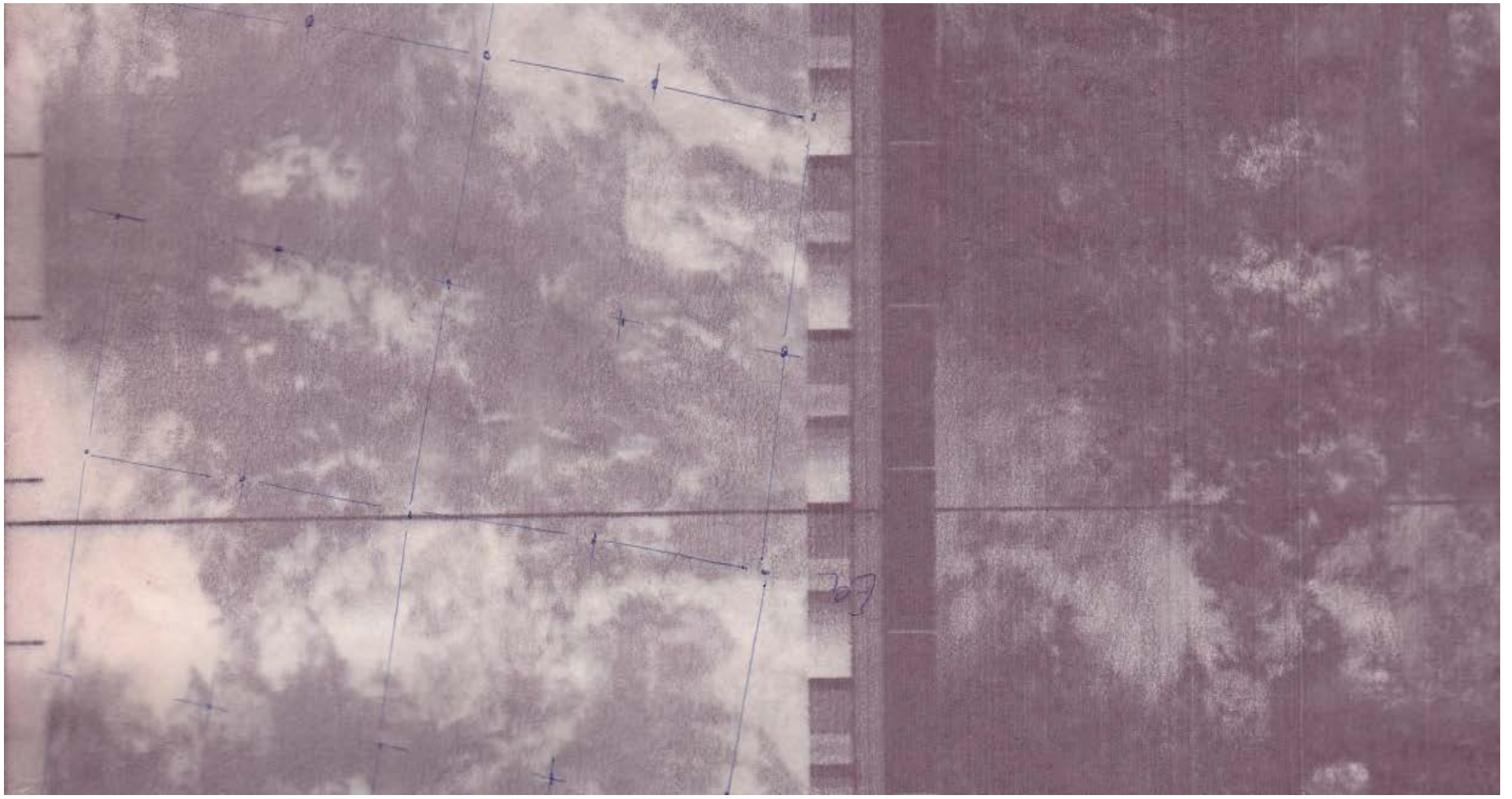
Before 1997
APT pictures from NOAA



CMACast and COMS receiving systems Web based Insat,Eumetsat and Himawari

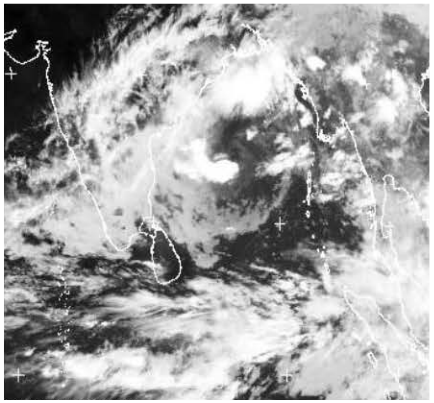
DOM's top three hazards

that can be monitored by satellite

(Q 1 of the JMA questionnaire)

- **Hazard 1: Monsoon activity.**
- There was an exceptionally heavy rainfall in Colombo on the 4th June 1992 and hence most parts of the Colombo city was flooded. The

  24-hour rainfall of this event was 493.7 mm and it was the highest rainfall recorded at Colombo since observations commenced in 1869.
- The heavy rains occurred on the 17th May 2003 over Ratnapura and Deniyaya areas .Aninkanda recorded 738mm of rainfall.



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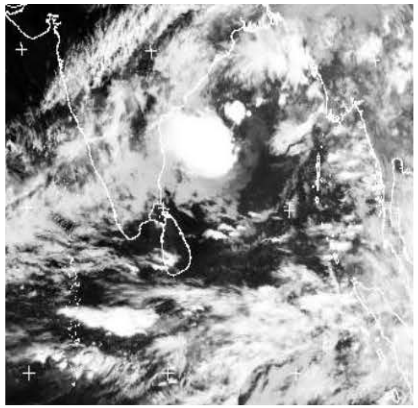

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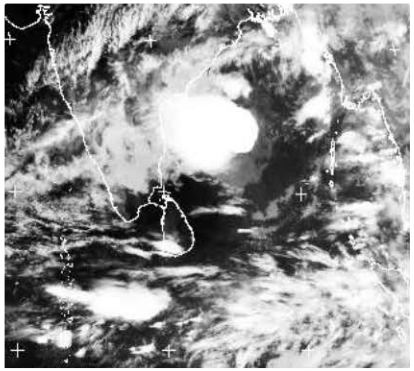

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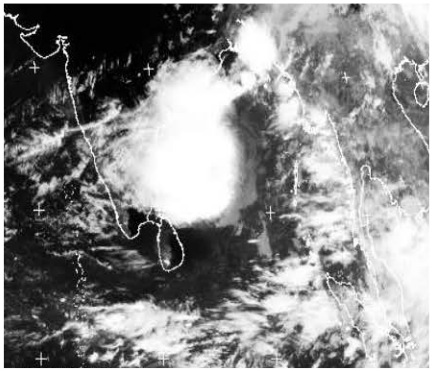

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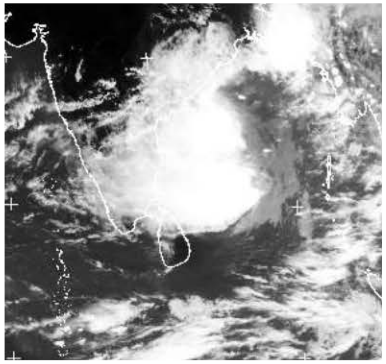

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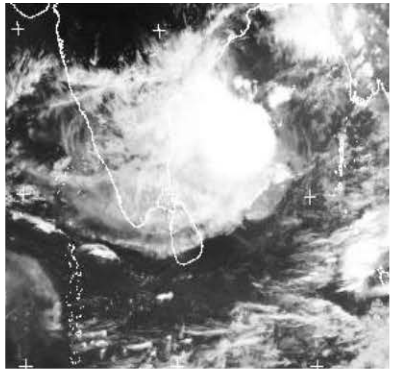

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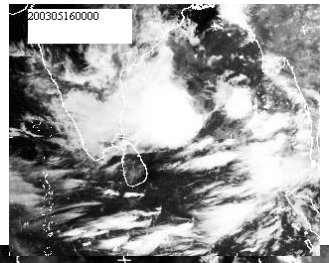

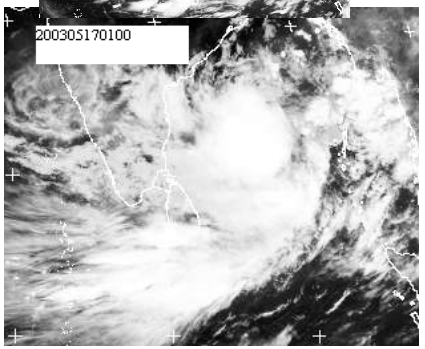

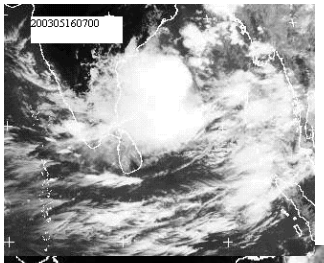

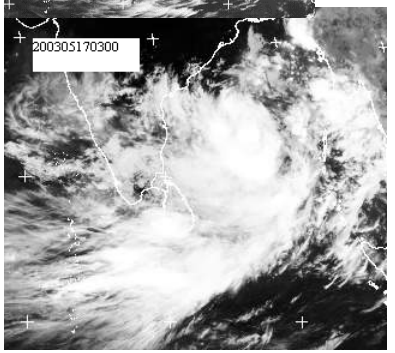

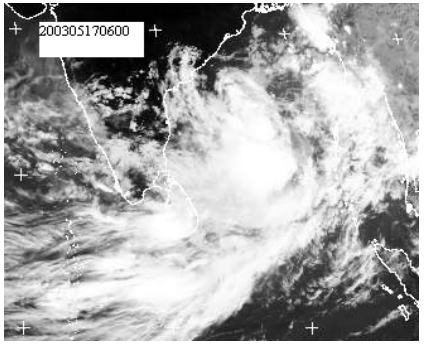

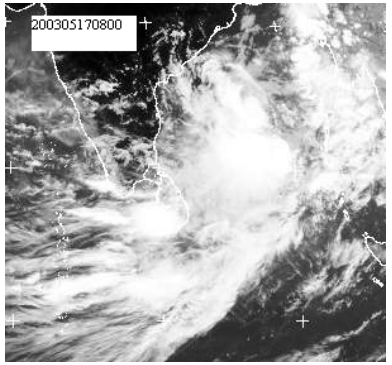

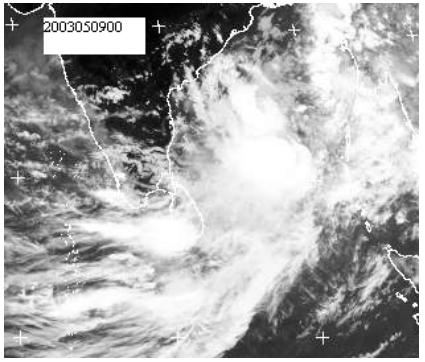

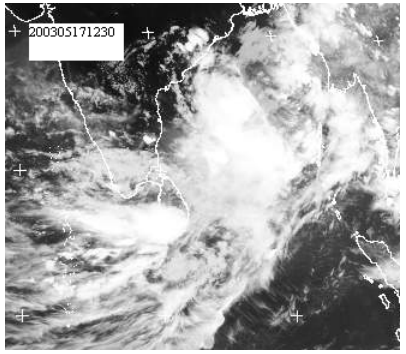

DOM's top three hazards

that can be monitored by satellite

(Q 1 of the JMA questionnaire)

- Hazard 2: Severe Thunder Storm

Deaths due to Lightning

YEAR	2008	2009	2010	2011	2012	2013	2014
NUMBER OF DEATHS	26	14	33	51	48	19	24

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ඊයේ වාරියපොල සුලි සුළං

Posted on Saturday, June 21, 2014

වාරියපොල ප්‍රදේශය හරහා ඊයේ (20 දා) උදෑසන හමාගිය දැඩි සුළඟින් කුරුණෑගල වාරියපොල මාර්ගයේ ගලගෙදර පිහිටි දිවිනැගුම් ආර්ථික මධ්‍යස්ථානයේ කාර්යාලය ඉදිරිපිට පිහිටි විශාල නුග ගසක් කඩා වැටීමෙන් නවතා තිබූ වාහන කීපයකට අලාභ හානි සිදු විය.

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DOM's top three hazards

that can be monitored by satellite

(Q 1 of the JMA questionnaire)

- **Hazard 3 :Tropical Cyclone**

Severe Cyclone hit the eastern coast of sri-lanka on the23 November 1978

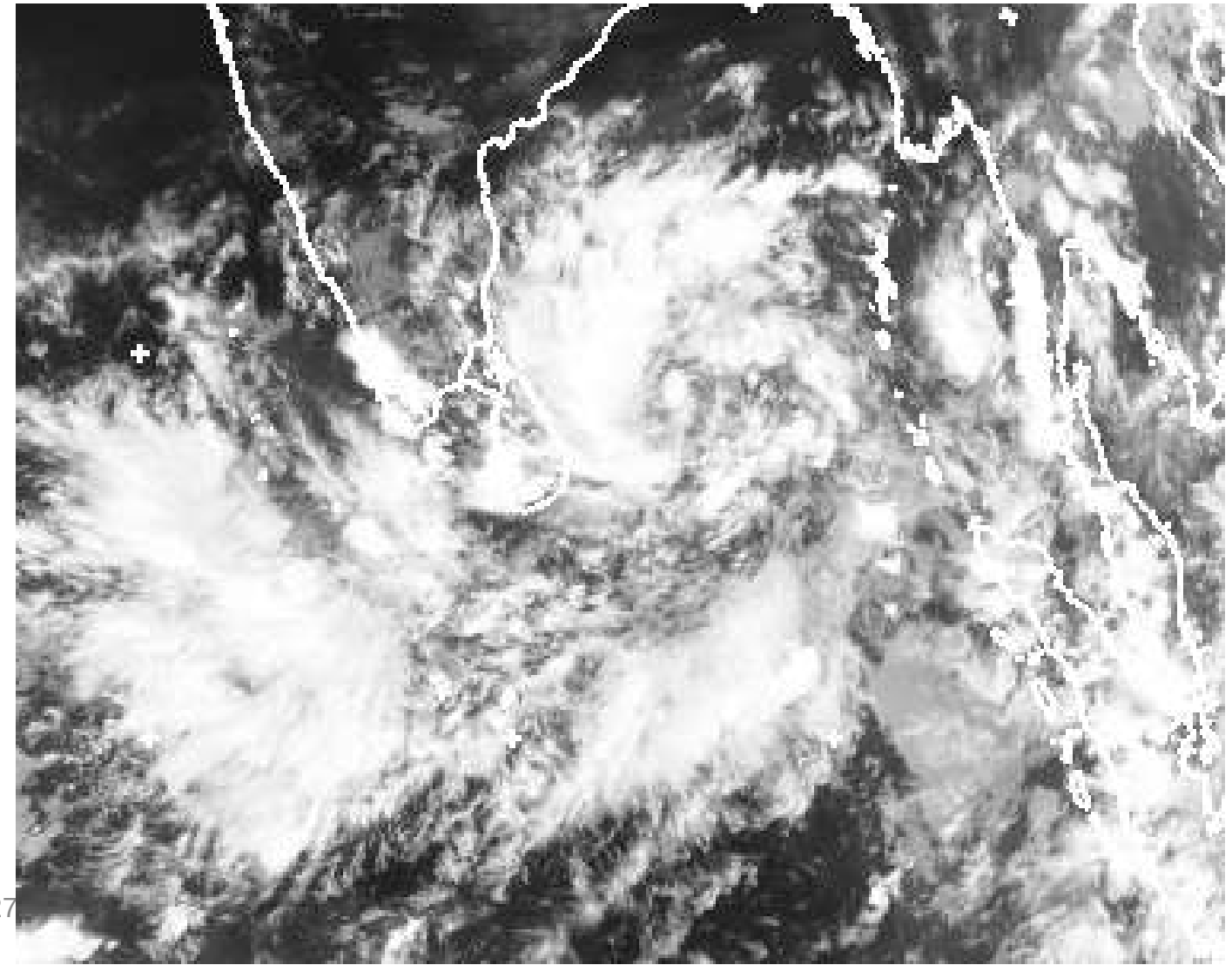
915 deaths

more than one million people affected,

nearly 250,000 houses partially or completely damaged,

240 school buildings were also damaged.

Depression closer to Sri-lanka
2015-11-07-1200UTC



DOM's expectations of new series of satellites for hazard monitoring

(Q 2 of the JMA questionnaire)

Major hazard	Features of new generation GEO met. satellite
Hazard 1:Monsoon Activity	**Multi-spectral bands:** New signals derived from multi-spectral-band observations will support issuance of more effective warnings especially about the heavy rain
Hazard 2: Thunder Storm	**Rapid scanning:** Data from rapid scanning observation will enable early detection and to find the movement of Thunder Storm **Multi-spectral bands:** New quantitative products will be derived from multi-spectral band observation data which can be used to issue warning for heavy rain. **High spatial resolution** High spatial resolution would help to issue location specific forecast **New instruments** Lightning mapers would help to issue lightning alerts

DOM's expectations of new series of satellites for hazard monitoring

(Q 2 of the JMA questionnaire)

Major hazard	Features of new generation GEO met. satellite
Hazard 3: tropical cyclones	**Multi spectral bands:** New signals derived from multi-spectral band observation would help to estimate extremely heavy rainfall .

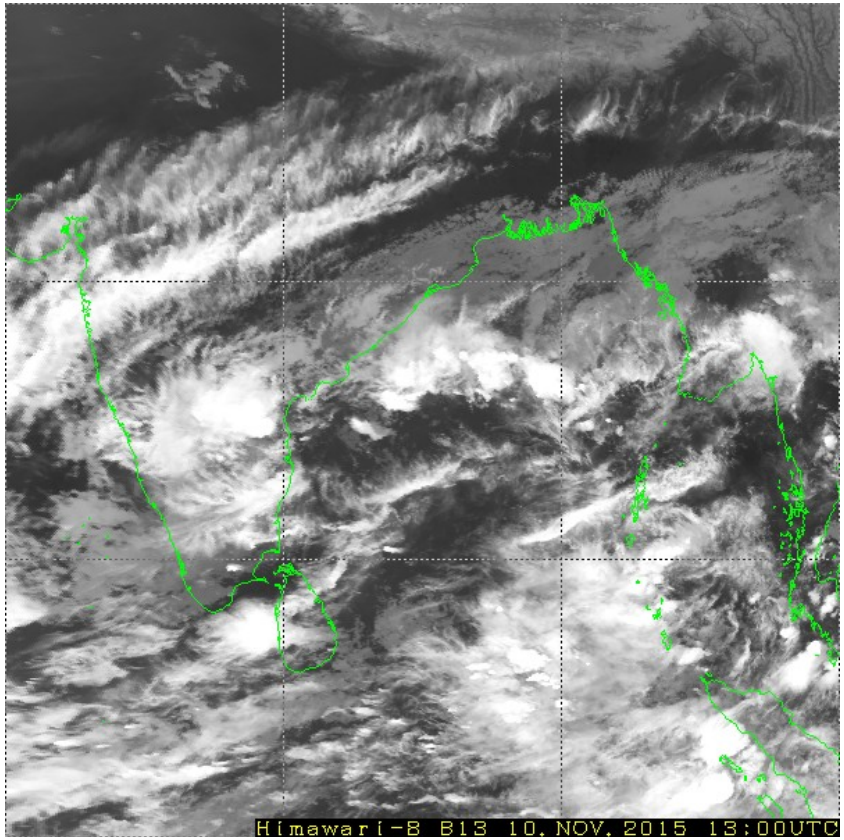
DOM's requirements to get desired benefits from the new generation of satellites

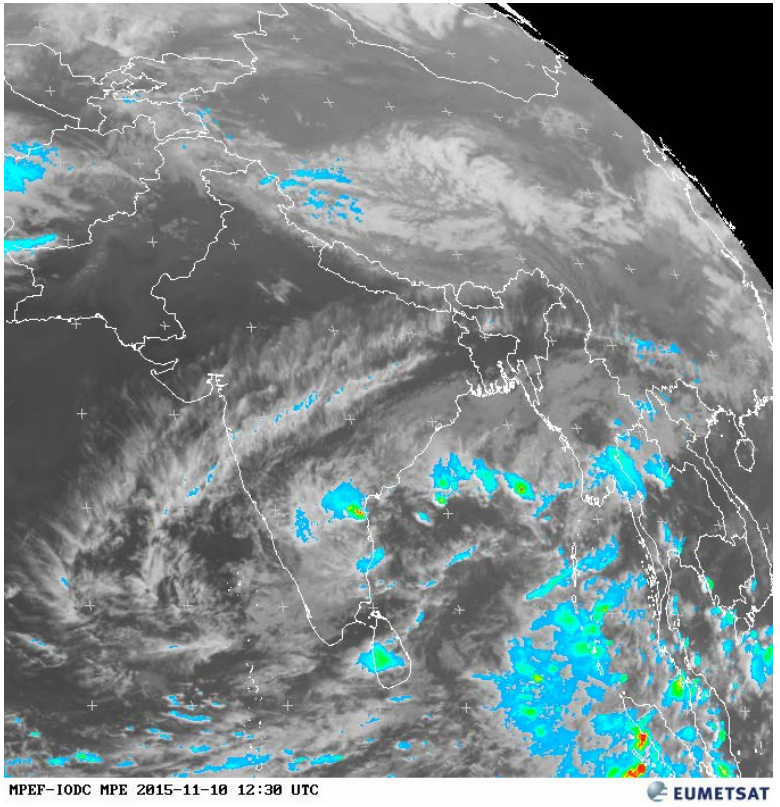
(Q 3 of the JMA questionnaire)

Major hazard	Features of new generation GEO met. satellite
Hazard 1:Monsoon Activity	**Training in imagery analysis:** Training would support the retrieval of new signals from multi-spectral band observation.
Hazard 2: Thunder Storm	**Training in imagery analysis:** Training would support the retrieval of new signals from multi-spectral band observation. **Stable provision of imagery without communication errors** **For the detection of the movement of TS stable provision of imageries are necessary**
Hazard 3: tropical cyclones	**Training in imagery analysis:** Training would support the retrieval of new signals from multi-spectral band observation.

DOM's plans/expectations for utilization of new-generation geostationary meteorological satellite data

- Current major problem is the geometric correction as the Clouds are little shifted to the west in Himawari imageries.





DOM's plans/expectations for utilization of new-generation geostationary meteorological satellite data

- Make geometric correction to Himawary imageries over Sri-Lanka area with the help of JMA.
- We request radiance data to be used in data assimilation of WRF
- Development of a weather monitoring system using enhanced features of new-generation satellites such as high spatial resolution and multi-spectral bands.
- Issuing of Convective activity forecast using satellite imageries and the WRF outputs .
- Issuing of quantitative forecast .
- Need Master Degree oportunities for our youngers to learn satellite Meteorlogy


Thank You !
Sincere thanks to JMA