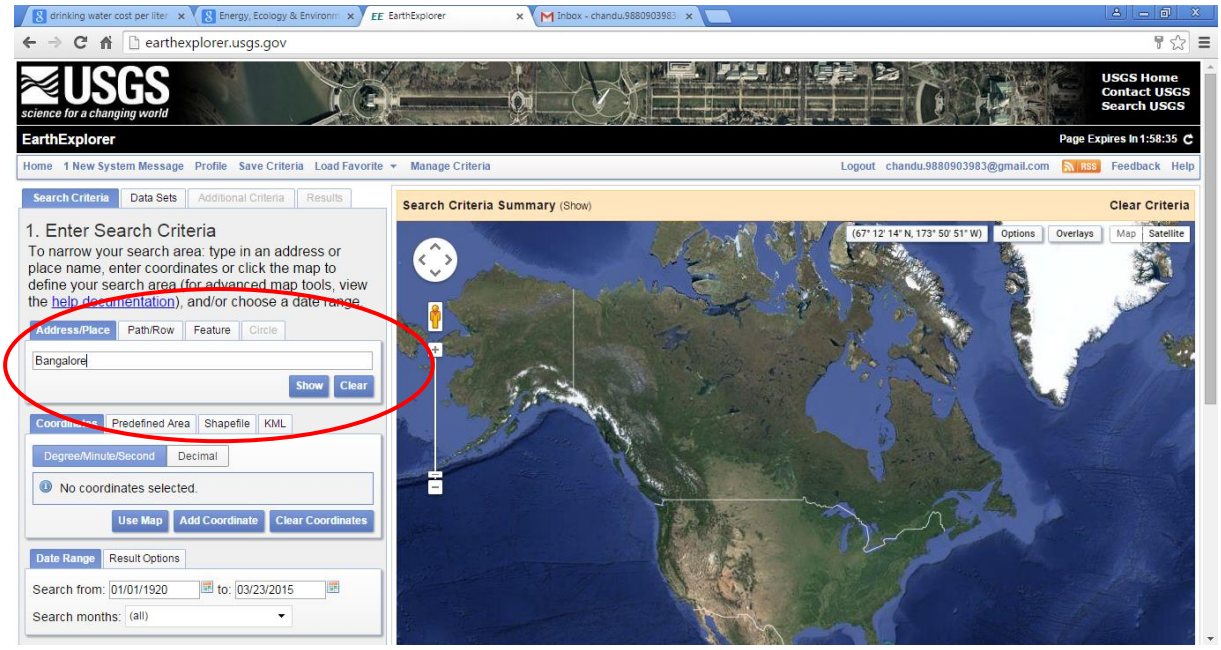
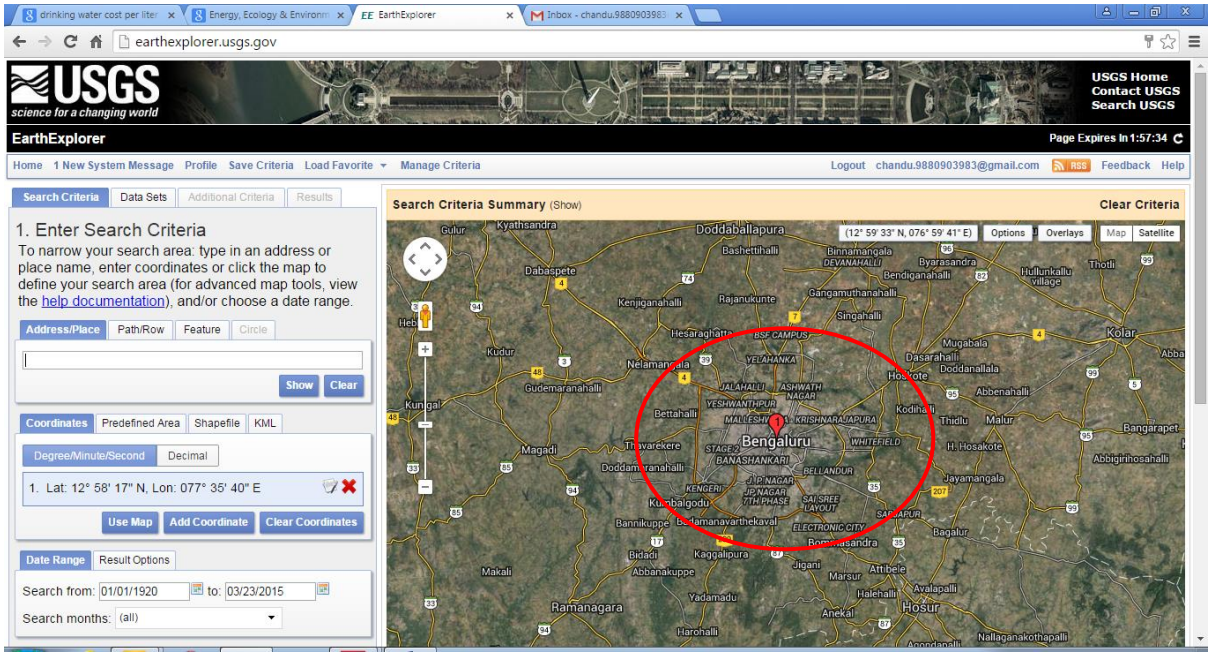
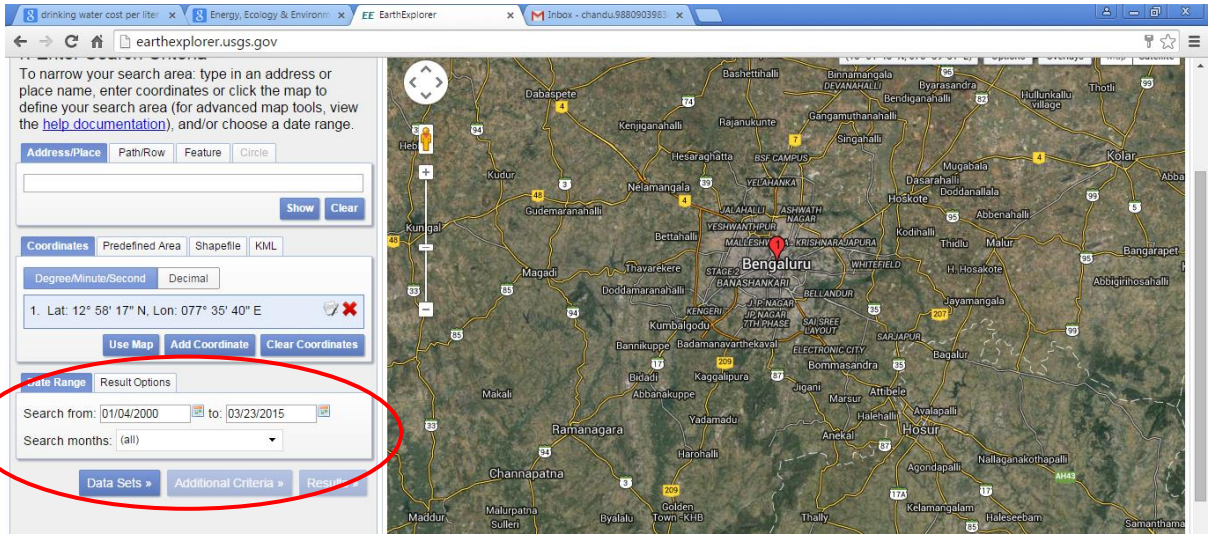
STEPS TO OBTAIN 30M RESOLUTION SATELLITE DATA SETS FOR PARTICULAR AREA OF INTEREST.

1. Visit USGS earth explorer Website: http://earthexplorer.usgs.gov/
2. First time users, click on register tab.
3. Once registration is done you can login.
4. On the search criteria tab enter interested place name. For ex. Bangalore

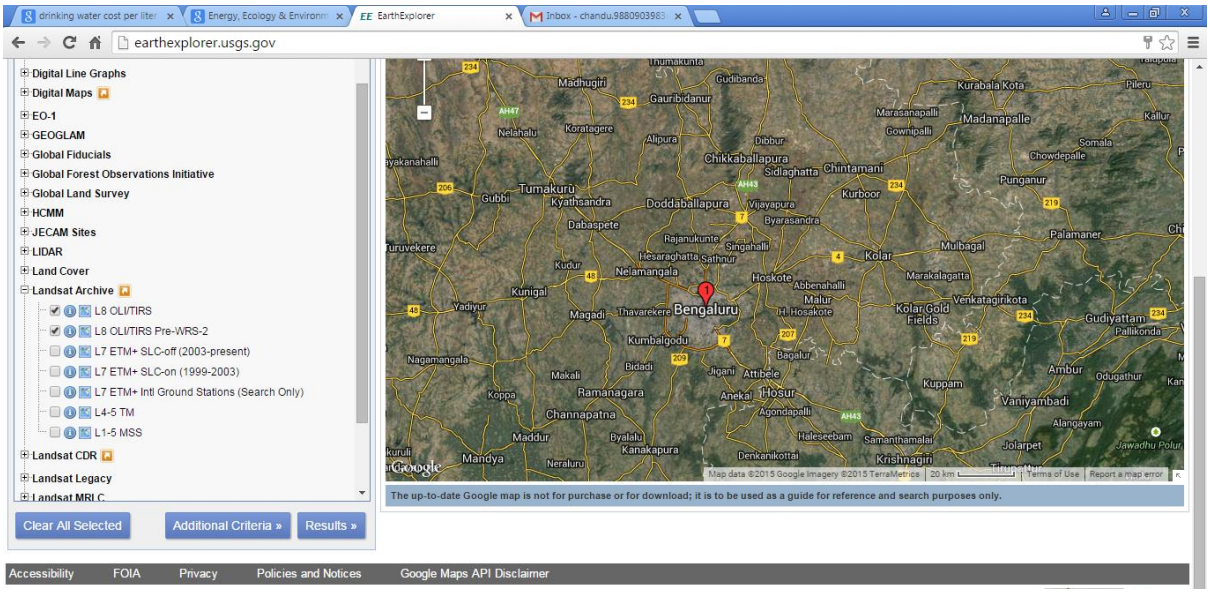




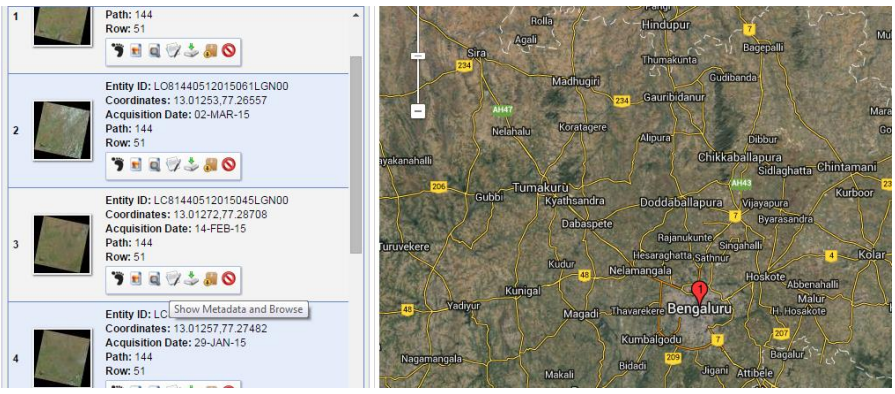
5. After entering place name, select Date range. For ex. 01.01.2000 to 21.03.2015



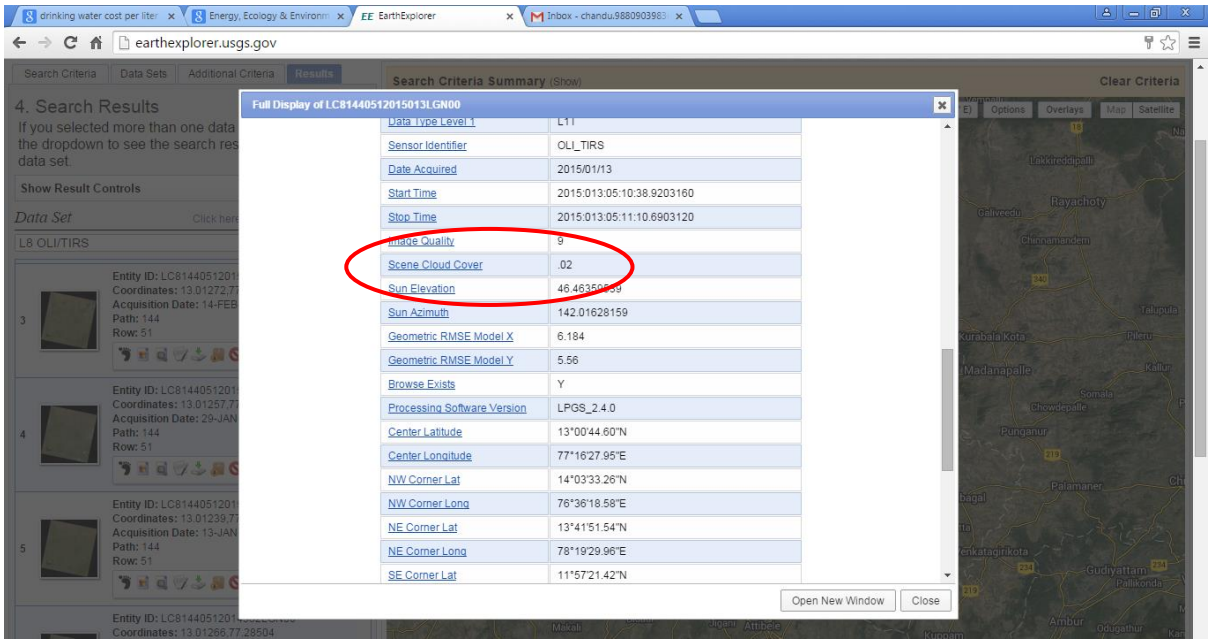
6. Now click on datasets and choose **Landsat Archive** in the "SELECT YOUR DATA SET" tab
7. Check both L8 tabs and click on results (Note: Refer *annex3* to decide satellite and sensors)



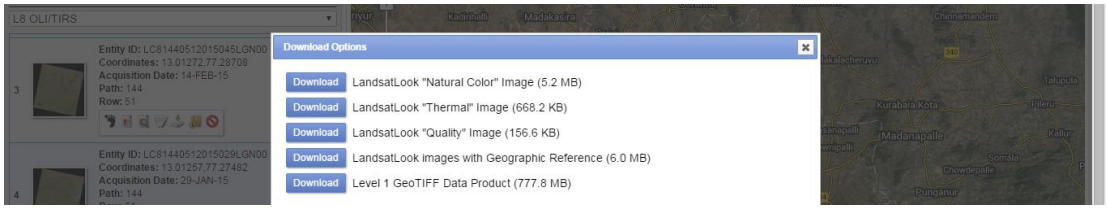
8. Select the tab **Show metadata and browse**.



9. In the attribute table check for cloud cover. Preferably cloud cover should be less than 0.5%



10. Now click on **Download options** tab and select Level 1 GeoTIFF Data Product to download.



DONE!!! YOUR DATA WILL BE DOWNLOADED IN FEW MINS.

Annex1: Landsat 8 bands

Landsat 8	**Bands**	**Wavelength (micrometers)**	**Resolution (meters)**
Operational Land Imager (OLI) and Thermal Infrared Sensor (TIRS)	Band 1 - Ultra Blue (coastal/aerosol)	0.43 - 0.45	30
	Band 2 - Blue	0.45 - 0.51	30
	Band 3 - Green	0.53 - 0.59	30
	Band 4 - Red	0.64 - 0.67	30
	Band 5 - Near Infrared (NIR)	0.85 - 0.88	30
	Band 6 - Shortwave Infrared (SWIR) 1	1.57 - 1.65	30
	Band 7 - Shortwave Infrared (SWIR) 2	2.11 - 2.29	30
	Band 8 - Panchromatic	0.50 - 0.68	15
	Band 9 - Cirrus	1.36 - 1.38	30
	Band 10 - Thermal Infrared (TIRS) 1	10.60 - 11.19	100 * (30)
	Band 11 - Thermal Infrared (TIRS) 2	11.50 - 12.51	100 * (30)

* TIRS bands are acquired at 100 meter resolution, but are resampled to 30 meter in delivered data product.

Satellite	Sensor	Bandwidths	Resolution	Satellite	Sensor	Bandwidths	Resolution
LANDSATs 1-2	RBV	(1) 0.48 to 0.57	80	LANDSATs 4-5	MSS	(4) 0.5 to 0.6	82
		(2) 0.58 to 0.68	80			(5) 0.6 to 0.7	82
		(3) 0.70 to 0.83	80			(6) 0.7 to 0.8	82
						(7) 0.8 to 1.1	82
	MSS	(4) 0.5 to 0.6	79		TM	(1) 0.45 to 0.52	30
		(5) 0.6 to 0.7	79			(2) 0.52 to 0.60	30
		(6) 0.7 to 0.8	79			(3) 0.63 to 0.69	30
		(7) 0.8 to 1.1	79			(4) 0.76 to 0.90	30
						(5) 1.55 to 1.75	30
LANDSAT 3	RBV	(1) 0.505 to 0.75	40			(6) 10.4 to 12.5	120
	MSS	(4) 0.5 to 0.6	79			(7) 2.08 to 2.35	30
		(5) 0.6 to 0.7	79				
		(6) 0.7 to 0.8	79	LANDSAT 7	ETM+	(1) 0.45 to 0.52	30
		(7) 0.8 to 1.1	79			(2) 0.52 to 0.60	30
		(8) 10.4 to 12.6	240			(3) 0.63 to 0.69	30
						(4) 0.76 to 0.90	30
						(5) 1.55 to 1.75	30
						(6) 10.4 to 12.5	60
						(7) 2.08 to 2.35	30
						PAN 0.50 to 0.90	15

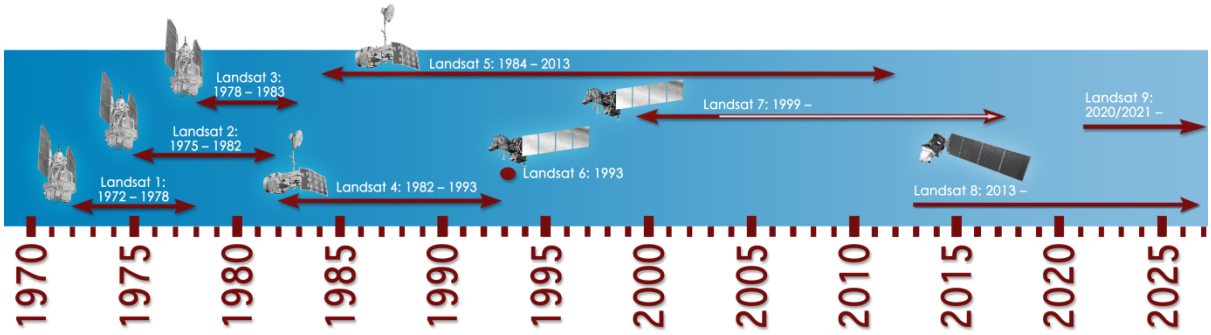
Landsat-7 ETM+ Bands (μm)			Landsat-8 OLI and *TIRS* Bands (μm)		
			30 m Coastal/Aerosol	0.435 - 0.451	Band 1
Band 1	30 m Blue	0.441 - 0.514	30 m Blue	0.452 - 0.512	Band 2
Band 2	30 m Green	0.519 - 0.601	30 m Green	0.533 - 0.590	Band 3
Band 3	30 m Red	0.631 - 0.692	30 m Red	0.636 - 0.673	Band 4
Band 4	30 m NIR	0.772 - 0.898	30 m NIR	0.851 - 0.879	Band 5
Band 5	30 m SWIR-1	1.547 - 1.749	30 m SWIR-1	1.566 - 1.651	Band 6
Band 6	60 m TIR	10.31 - 12.36	*100 m TIR-1*	*10.60 – 11.19*	Band 10
			100 m TIR-2	*11.50 – 12.51*	Band 11
Band 7	30 m SWIR-2	2.064 - 2.345	30 m SWIR-2	2.107 - 2.294	Band 7
Band 8	15 m Pan	0.515 - 0.896	15 m Pan	0.503 - 0.676	Band 8
			30 m Cirrus	1.363 - 1.384	Band 9

Annex2: Landsat series - sensors

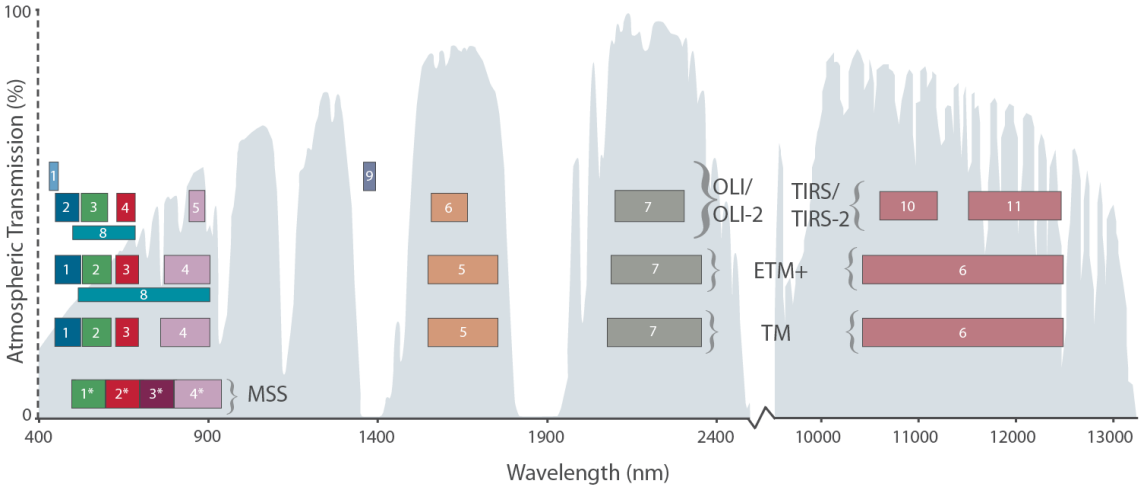
Satellite	Launch	Decommissioned	Sensors
Landsat 1	July 23, 1972	January 6, 1978	MSS/RBV
Landsat 2	January 22, 1975	July 27, 1983	MSS/RBV
Landsat 3	March 5, 1978	September 7, 1983	MSS/RBV
Landsat 4	July 16, 1982	June 15, 2001	MSS/TM
Landsat 5	March 1, 1984	2013	MSS/TM
Landsat 6	October 5, 1993	Did not achieve orbit	ETM
Landsat 7	April 15, 1999	Operational	ETM+
Landsat 8	February 11, 2013	Operational	OLI/TIRS

USGS-Satellite data download steps

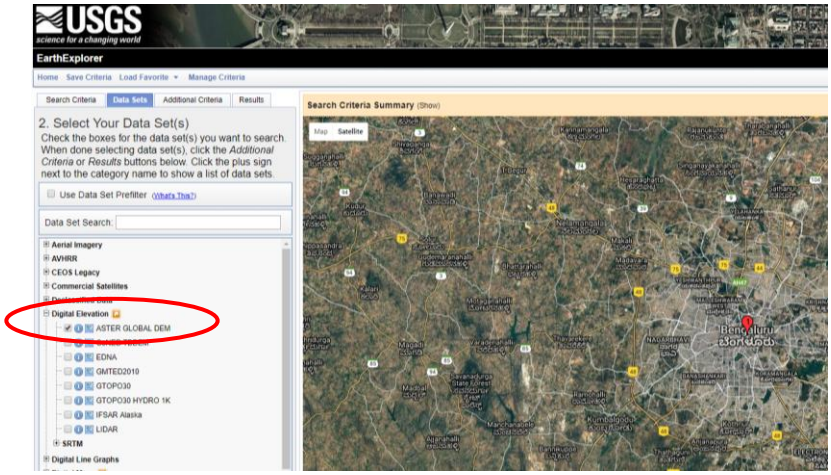
Annex3: Landsat series time line



Annex4: The Multispectral Scanner System (MSS) aboard Landsats 1–5 had four bands. The Thematic Mapper (TM) aboard Landsats 4 & 5 had seven bands. Landsat 7's Enhanced Thematic Mapper Plus (ETM+) has 8 bands and Landsats 8 & 9 have 11 bands. The atmospheric transmission values for this graphic were calculated using MODTRAN for a summertime mid-latitude hazy atmosphere (circa 5 km visibility).



Similarly for DEM data, choose ASTER Global DEM under **Digital Elevation** tab.



Similarly for Sentinel data, choose Sentinel-2 under **Sentinel** tab.