

# Legal Framework of Indian Satellite Data Measuring Climate Changes

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## Abstract

Climate changes follow global warming, depletion of the ozone layer, air, water and soil pollution, loss of biodiversity, deforestation and desertification etc. It is measured through scientific experiments as well as observations. But the root cause is human activities all over the world.

There are many advancements of climate change analysis in India through earth observation data captured by ISRO satellites like RESOURCESAT, CARTOSAT, RISAT, OCEANSAT, Megha-Tropiques and SARAL. There are currently eleven operational ISRO satellites in orbit. These are built to make study about the data required for different analysis in environment, forestry, agriculture, ocean resources etc. Some like OCEANSAT has specific task to observe the data and its changes in and around ocean. Therefore it confirms how ISRO has been developed its satellite for specific studies in climate change analysis. There are many to be developed by ISRO in due course of time. Moreover, the possibility of private sector entry to make such satellites could not be ruled out in the upcoming years.

Alongside there is no major Indian policy or even legislation to regulate the earth observation data or geospatial data that are to be analyzed to know climate change variables. But legal regulation is much needed for easy availability of data to the end users. India has still now Remote Sensing Data Policy 2011 that is a mere change of earlier policy in 2001. There is draft of National GI Policy 2012. Some Bills like National Geospatial Data Authority Bill is pending for few years. It is yet to see how much are to be finally included in these legal instruments to use the satellite data for observing climate changes. In case of private sectors disseminating satellite data, there are other legal problems that may not be so much stringent for government sector.

Therefore developing excellent satellites by ISRO could not alone fulfill the climate change study in India. The ultimate requirement is a good synergy between satellite data technology and its regulation, which is the driving force to understand the process of climate change and to implement the protective measures in a sound way. The ambit of this paper covers this synergy.

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## I. Introduction

India is now very much sound in space technology. The space science and technology and its advancement in India is highly discussed all over the world. The other countries are also getting the benefits of Indian satellites. The satellite data are very cost effective but at the same time there are so many problems to share these data for societal purposes. One of such purposes is to use these data for measuring climate changes. Though it is more or less accepted internationally that the data required for any disaster management programme including the climate changes should be freely available or could be shared without restrictions but there are some problems at the policy or legal regulatory levels in India. There are till now the satellites launched by Indian Space Research Organization (ISRO) but the idea of private satellites cannot be ignored. In fact the later one is fastly coming up in India but it is a matter of time now to launch satellite by private body. In this background, the purpose of this paper is to highlight these problems along with some recommendations.

## II. Analysis

Achieving the cutting edge space technology through self-reliant process does not mean that the same could be implemented to Indian society specifically here for measuring the climate changes. This is the case for India. Implementation of technology would require solid policy and regulatory framework. The position of India in this regard is very restricted till now. The space policy or regulation related with satellite data is confined within Remote Sensing Data Policy 2011 (RSDP 2011)<sup>1</sup> followed by some draft Bill or Policy like National Geospatial Data Authority Bill<sup>2</sup> and National Geographic Information Policy 2012<sup>3</sup> which are not yet framed at its final shape. Therefore RSDP 2011 is the one and only policy initiative made by the Government of India.

The main reason of such less regulatory norm is the government monopoly in Indian satellite market concerning manufacturing and dissemination of data to the users. It is ISRO satellites always when measuring the climate changes through satellite data are considered. The Government of India through ISRO and its division like National Remote Sensing Centre (NRSC)<sup>4</sup> and other governmental bodies like Indian National Centre for Ocean Information

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1 [dos.gov.in/pdf/RSDP-2011.pdf](http://dos.gov.in/pdf/RSDP-2011.pdf) (Accessed on 28 September, 2015).

2 Adhikari, M. (2012), High Resolution Data Dissemination against the Background of National Security in India. In Janseen, K. and Crompvoets, J. (Eds.) *Geographic Data and the Law Defining New Challenges*. Leuven: Leuven University Press, p. 133.

3 [www.nias.res.in/docs/R11-2012-GI-Policy.pdf](http://www.nias.res.in/docs/R11-2012-GI-Policy.pdf) (Accessed on 28 September, 2015).

4 [www.nrsc.gov.in/](http://www.nrsc.gov.in/) (Accessed on 28 September, 2015).

Services (INCOIS)<sup>5</sup> are first and last one to monitor climate change data through satellite and disseminate it for public uses. The INCOIS is especially dedicated for ocean monitoring. So it takes the help of data from OCEANS-AT which is solely dedicated for measuring data related with ocean.

The above analysis reveals that Indian regulatory system for satellite data is absolutely made for ISRO satellites. The problem from this system is that the interested stake holders besides Governmental bodies could not get enough opportunity to share the satellite data according to their organizational policy. What Government is framed for them, the private organization has to simply follow it to get the data from Indian satellites and share it for further uses. There is no such provision in the RSDP absolutely made for private stake holders in satellite data industry. This policy is right now sub-judice before the Hon'ble Delhi High Court.

Another problem may come up with the increasing number of users of satellite data within the Governmental organizations. Sometimes the data related with climate change specifically value-added data may face some official restriction for common sharing amongst the Governmental bodies itself.

There is very recent case though it is not related with satellite data but it relates with environmental issues. The conflict is whether information related with environment could be restricted in public domain if such area falls within military complex where the national security is concerned. The conflict is between the Central Information Commission (CIC)<sup>6</sup> and the Ministry of Environment, Forest and Climate Change (MoEF)<sup>7</sup> along with the Karnataka government.<sup>8</sup> The MoEF does not want to disclose the information about implementation of National Green Tribunal (NGT)<sup>9</sup> order because of security interests. The CIC asked how informing about implementation of environmental protection order of NGT can affect security of India.<sup>10</sup>

The above example discloses the fact that there is difference in opinion between two Governmental bodies about sharing information related with environment in public domain when the issue of national security is concerned. Therefore if the climate change data being gathered through satellite, such type of controversy may arise to use or share data in public domain.

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5 [www.incois.gov.in/](http://www.incois.gov.in/) (Accessed on 28 September, 2015).

6 <http://cic.gov.in/> (Accessed on 28 September, 2015).

7 [www.moef.gov.in/](http://www.moef.gov.in/) (Accessed on 28 September, 2015).

8 [www.karnataka.gov.in/](http://www.karnataka.gov.in/) (Accessed on 28 September, 2015).

9 [www.greentribunal.gov.in/](http://www.greentribunal.gov.in/) (Accessed on 28 September, 2015).

10 'Disclose Info on Military Complex', Times of India (Bengaluru edition), October 29, 2015, p. 8.

### III. Conclusion and Recommendations

There is legal vacuum in case of satellite data regulation for climate changes. This conclusion is followed by the recommendations below:

1. Climate change data available through Indian satellites would require a separate policy or a part of Remote Sensing Data Policy may be considered separately.
2. A concerned legislation, as a next step to policy, should be considered.
3. For futuristic private commercial uses of satellite data especially for health hazards due to climate changes – a dedicated satellite is needed. Recommendation for separate policy/legislation for this.
4. A regulatory body not ISRO is necessary to audit the quality and price of data acquired from upcoming private commercial satellites.
5. Draft of legal regulation of satellite data for climate change purposes should be initiated at the same place where the scientific & technical studies are going on.
6. Example – Regulation for Aerosol may be considered in the concerned division of Space Physics Laboratory (SPL),<sup>11</sup> Thiruvananthapuram. Recommendation for environmental law division within SPL.
7. To consider ‘Climate Apps’ using satellite data and to get data in real time in users’ mobile sets. Accordingly ISRO or MoES should have a policy.
8. An Indian satellite should be dedicated to follow up environmental legislations and detect the areas or organizations causing climatic disorders violating these legislations.

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11 [spl.gov.in/](http://spl.gov.in/) (Accessed on September 28, 2015).