

## THE DISASTER CHARTER: FORMULATING A COMMON SPACE POLICY FOR THE ASIAN REGION

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### ABSTRACT

With accelerated economic globalization taking the world by storm, nations in the Asian region are not far behind in catching onto the trend. Asian nations have been competing to seize the opportunity by taking an active part in international cooperation and pursuing all-round economic and social development, and are making remarkable progress. However, natural disasters still remain as challenges to such regional cooperation. This research paper examines the essential linkage between regional cooperation in the Asian region and the Disaster Charter, with the proposal for a common disaster policy in the Asian region, duly expanded and analyzed in the present paper.

### 1. Introduction

In an era of accelerated economic globalization, nations in the Asian region have been competing to seize the opportunity by taking an active part in international cooperation and pursuing all-round economic and social development, and made remarkable achievements. However, some areas still remain as challenges to regional cooperation. Natural disasters top the list of such serious challenges.

Asia is particularly vulnerable to disasters as it accounts for approximately 90% of the victims of world crisis and more than 50% of the

total loss suffered around the globe.\* Indeed, during the last decade, Asia has encountered several devastating disasters such as the earthquake in Japan, Taiwan and the India-Pakistan border and above all, the large-scale earthquake and the subsequent Tsunami in the Indian Ocean and very recently in Indonesia. It is not possible to prevent natural disasters but the consequences thereof can be mitigated. Space technology and specifically, remote sensing from space, can contribute extensively in disaster management.

It was this realization that led to the signing of the International Charter "Space and Major Disasters"<sup>†</sup>

(hereinafter referred to as the Disaster Charter) on June 20, 2000. The Charter aims at providing a unified system of space data acquisition and delivery to those affected by natural or man-made disasters. Needless to say, such an ambitious aim calls for international cooperation as a prerequisite. Indeed, the Disaster Charter rests on the bedrock of international cooperation that can be strengthened only by concerted regional actions especially in developing regions of the world. Information sharing is the first step, the simplest form of such cooperation. Information exchange between nations can be just as difficult as within them. Therefore, it is plain to see that to a certain degree, the effectiveness of the Disaster Charter depends on the existence of well-maintained and speedy channels at the regional level.

Having thus looked at the inter-relation between regional cooperation and the Disaster Charter, and need for Asian cooperation in particular, the chief aim of this research paper is to examine the essential linkage between the regional cooperation in the Asian region and the Disaster Charter, with the proposal for a common disaster policy in the Asian region, a point which shall be duly expanded and analyzed in the present paper.

## **2. Earth Observation Systems and Birth of the Disaster Charter**

The world is affected more and more by several natural disasters such as earthquakes, cyclones, floods, forest fires, landslides and volcanic eruptions. Space technology and specifically, remote sensing from space, play a very important role in disaster management.

Due to its capability to provide both the global coverage and the ability to make repeated observations of specific areas of interest, satellite remote sensing is well suited for monitoring the progress and effect of diverse disasters. †

An increasing awareness of the need for a common effort to face the serious problems caused by natural disasters had led the General Assembly of the United Nations to declare the Nineties (1990-2000) “The International Decade for Natural Disaster Reduction” (IDNDR).<sup>§</sup> Among the main aims of the Resolution, which created the International Decade, we find the aim “*to reduce through concerted international actions, especially in developing countries, loss of life, property damage and social and economic disruption caused by natural disasters*” and also to improve the capacity of each country to mitigate the effects of natural disasters” especially by supporting developing countries and fostering “*scientific and engineering endeavors aimed at closing critical gaps in knowledge in order to reduce loss of life and property*” and to “*develop measures for assessment, prediction, prevention and mitigation of natural disasters through programs of technical assistance and technology transfer.*”<sup>\*\*</sup>

In order to reach these aims, it is necessary to intensify the study of natural disasters that include accurate prediction of the event that may cause or contribute to the cause of disaster and a rapid assessment of the location and the extent of damage for quicker and more effective help interventions. This study, which is conducted on Earth by geologists and experts and, in the system of international cooperation of the U.N. program, by those entrusted with the

management of disasters, can benefit and is benefiting from new terrestrial and space technologies, including Earth Observation Systems, as well as mobile and fixed satellite communication systems.<sup>††</sup>

The role of remote sensing satellites becomes relevant in the management of catastrophes, because it allows a rapid observation of the involved area and the transmission in real time of the data for a monitoring of the natural disasters, for the mitigation of their effects and for an accurate assessment of losses.<sup>‡‡</sup>

The role of such satellites in disaster prediction and early warning, disaster mitigation and disaster relief can hardly be exaggerated. Principle XI of the 1986 Principles on Remote Sensing<sup>§§</sup> provides:

*“Remote sensing shall promote the protection of mankind from natural disasters. To this end, States participating in remote sensing activities that have identified processed data and analyzed information in their possession that may be useful to States affected by natural disasters, or likely to be affected by impending natural disasters, shall transmit such data and information to States concerned as promptly as possible.”*

Principle XI thus clearly prescribes an obligation on the part of space powers with disaster-relevant capability to issue early warning to the potential victim States. Humanitarian assistance being the thrust of this Principle, it is arguable that the assistance by the space power concerned to the disaster victim State is in the nature of an international public

service, a contribution to human welfare.<sup>\*\*\*</sup>

The role of remote sensing data support for disaster response is often critical. Remote sensing satellites have a variety of applications for the management of any catastrophe. As already mentioned, the Disaster Charter was born out of this very realization with the Canadian Space Agency (CSA) signing the Charter on October 20, 2000.<sup>†††</sup> In September, 2001, the National Oceanic and Atmospheric Administration (NOAA) and the Indian Space Research Organization (ISRO) also became members of the Charter. The Argentine Space Agency (CONAE) joined in July 2003. The Japan Aerospace Exploration Agency (JAXA) became a member in February 2005. The United States Geological Survey (USGS) has also joined the Charter as part of the U.S. team. Recent additions to the list of members include DMC International Imaging (DMC), Centre National des Techniques Spatiales (Algeria), National Space Research and Development (Nigeria), Tübitak-BILTEN (Turkey), BNSC and Surrey Satellite Technology Limited (UK).

The Disaster Charter aims at providing a unified system of space data acquisition and delivery to those affected by natural or man-made disasters through intermediaries known as Authorized Users. Basically, it is an international mechanism to provide space-based assets to worldwide communities affected by disasters.<sup>††††</sup> Each member agency has committed resources to support the provisions of the Charter and thus is helping to mitigate the effects of disasters on human life and property. The Charter was declared formally

operational on November 1, 2000. An Authorized User only needs to call a single number to request the mobilization of the space and associated ground resources (RADARSAT, ERS, ENVISAT, SPOT, IRS, SAC-C, NOAA satellites, LANDSAT, and others) of the member agencies to obtain data and information on a disaster occurrence.<sup>§§§</sup> Thus, images obtained through earth observation systems form the essential resource that is to be shared among nations as laid down in the Disaster Charter.

### **3. International Cooperation- the Bedrock of the Disaster Charter**

Occurrence of disasters may well be an uncontrollable fact of life. However, responding to the needs of disaster victims is something well within the capabilities of human civilization. Lending one another humanitarian assistance is an ideal people have expressed since antiquity.<sup>\*\*\*\*</sup> After all, the exploration and use of space should be for the benefit of all countries without regard to the level of their economic or scientific development.

Consequently, the need for states to act together to aid the victims of warfare have developed into an extensive body of law. However, analogous laws to regulate humanitarian assistance during peacetime, which would apply to natural disasters, have suffered from limited progress.<sup>††††</sup> There has yet to be a comprehensive agreement on international disaster response law. The shortcomings of the current state of disaster management were highlighted in the world's responses to major natural disasters. The Indian Ocean Tsunami, Hurricane Katrina, and the Pakistani

Earthquake each proved too calamitous for any one state to cope with alone. While the world was willing to offer aid, the failure to organize a global plan for disaster assistance resulted in confusion, infighting, politicking, and ultimately, human suffering.<sup>††††</sup> The Disaster Charter tries to bring some stability by making space technology accessible to all nations at various levels.

As the authors interpret it, The Disaster Charter's policy on international cooperation is based on the premise that by the very nature, space activities have global reach with implications for coordination, cooperation and responsibility. International cooperation continues to be an important aspect of any nation's space programme. Bilateral and multilateral relations with space agencies and space related bodies help in taking up new scientific and technological challenges, defining international frameworks for exploration and utilisation of outer space for peaceful purposes, refining space policies and building and strengthening existing ties between countries. Space active nations work on joint programmes of mutual interest, participate in international committees and other for dealing with space policies and coordination of space operations and provide expertise and services for helping other developing countries in the application of space technology. It is precisely all of this that the Disaster Charter seeks to capture.

That the Disaster Charter rests heavily on international cooperation is a fact that is further established upon examining its preamble as well- "*...DESIROUS to strengthen international cooperation in this humanitarian undertaking...*"<sup>§§§§</sup>

Sharing information between nations is what such cooperation primarily entails. However, information exchange between nations is not an easy task. It can be a very problematic proposition when we take into account the fact that any intra-country information sharing process is itself so cumbersome for nations. The Disaster Charter can be effective in the true sense only if well-maintained and speedy channels are present at the regional level.

However, commentators have been quick in praising the qualities of the Charter in the context of ushering international cooperation. Remarks like *"It is being recognized as an efficient framework at [sic] international level, setting new standards and serving as a reference"*<sup>\*\*\*\*\*</sup> and *"The remarkable achievement of the Charter is that it has coordinated different space resources, brought together different entities, and brought the legal principles derived from space law into reality"*<sup>†††††</sup> make it obvious that while international cooperation is a prerequisite for effective operation of the Disaster Charter, it is also what the Disaster Charter seeks to establish in the long run.

#### **4. Obstacles in Implementation of the Disaster Charter- the Role of Regional Policies**

There are several areas of the Disaster Charter that are in need of development and several problems to consider. Generally speaking, creating a comprehensive disaster response treaty is an onerous task. Currently, no single text sets forth legal standards, procedures, or rights and duties for disaster response. Inconsistent state practice makes it difficult to develop

norms that could later be codified in a treaty or become part of customary law.<sup>†††††</sup>

In addition to the expanse of sensitive areas in need of a legal framework, there are several other obstacles to the creation of uniform disaster response laws that the Disaster Charter seeks to embody. An enduring problem is money. Political maneuvering also often hampers relief efforts. Security has also become a major concern.<sup>§§§§§</sup> In addition to concerns about terrorism, the contemporary notion of security entails protection from poverty, infectious diseases, and environmental degradation.<sup>\*\*\*\*\*</sup> State sovereignty and the principle of nonintervention can also be considered as the biggest impediments to the Disaster Charter.<sup>†††††</sup> States will not lightly give up the right to control their borders. There is a vital need for more research on existing domestic space laws and policies to implement the Disaster Charter properly. Clearly, there are many obstacles that currently stand in the way of implementing an international big-scale disaster response law like the Disaster Charter effectively. This is where regional policies can play a vital role.

Disaster management policy being just a small part of the entire scheme of international space law, it is essential to look at the importance of regional arrangements in formulating such law. Important international space law has been forged regionally through multinational agreements. Among the more important are the Convention for the Establishment of a European Space Agency, the Agreement Relating to the International Telecommunications Satellite Organization (Intelsat

Agreement), the European Organization for the Exploration of Meteorological Satellite (Eumetsat Convention), and the international space station agreement.<sup>††††††</sup> These multilateral treaties and agreements set the legal foundation for satellite communications, meteorological observations, space station design, construction, use and maintenance, and can have scores of signatories.<sup>§§§§§§</sup> They are easier to implement and coordinate and clearly, successful.

Thus, the need for effective laws and policies on space activities, not just on an international level but also on the national and regional level, is becoming clear to the increasing number of nations now actively involved in the field of space.<sup>\*\*\*\*\*</sup> Oftentimes, it is the countries neighbouring disaster-stricken areas that provide a great deal of disaster assistance. The successful operation of disaster management mechanism of the Disaster Charter between nations most definitely depends on the presence of suitable regional policies.

### **5. Towards Formulating a Common Disaster Policy in the Asian Region**

Though nations have made good progress in fulfilling their duty to provide a unified system of space data acquisition and delivery by member agencies to those affected by natural or man-made disasters by creating the Disaster Charter, at the same time they have allowed their duty to obligate member agencies to render assistance to go unenforced. The fact remains that the Charter is a non-binding legal document based on the principles of good will and best endeavour. As a result there is no

question of liability in its entire course of operations.<sup>††††††</sup> Moreover, the language of the Charter clearly indicates that the draftsmen never intended to take responsibility for the assistance rendered by them.<sup>††††††</sup> However, the same mechanism and multilateral instruments that made the Disaster Charter possible can also be used to correct this oversight at the regional level with minimal effort.

Current international law does not impose a clear duty upon nations to warn other nations of impending disasters. However, as major disasters have proven time and again, there is a dire need for a multilateral warning system. As this paper has repeatedly highlighted, deploying early warning systems for disasters is only possible through close cooperation among countries and effective exchange of information based on earth observation capability.<sup>§§§§§§</sup> Speaking of the Asian region in particular, a common space policy should be utilised in disaster management as there are a large number of countries in the Asian region which possess their own remote sensing capabilities.<sup>\*\*\*\*\*</sup> India, China, Japan, Korea, Malaysia, Thailand, Pakistan, Taiwan, Singapore and Indonesia have already developed or are in the process of developing remote sensing satellites either independently or in collaboration with other nations.<sup>††††††</sup> However, many of them have not yet reached the stage where they can operate multiple systems of satellites and the existing capability also does not allow an individual country to prepare for disasters sufficiently or to conduct real-time monitoring of disasters.<sup>††††††</sup>

But the situation is better in other nations. In this context, example may be given of the Disaster Monitoring

Constellation (DMC) which is a series of small, low-cost satellites, working together to watch over disasters on Earth and help emergency workers coordinate relief efforts. The five satellites, each built in the UK, are independently operated by the countries that own them: Algeria, China, Nigeria, Turkey and the UK. They have been placed in a constellation that allows an image of any part of the world to be recorded on any given day. The DMC group of satellites recently demonstrated just how valuable they are, in the wake of the Asian Tsunami in 2004. The satellites sent such clear pictures that emergency workers could see the damage done to individual roads and buildings- helping them focus relief quickly to the right places. §§§§§§§§

Thus, there is a great need for cooperation among the Asian nations in formulating a common policy to jointly

develop satellites and share knowledge through exchange of data. Perhaps the highly successful international DMC model can serve as a good starting point. \*\*\*\*\*

## 6. Conclusion

Disaster management tops the list of priorities for all countries of the world and all the more so for the Asian countries which are particularly vulnerable to frequent natural disasters. One of the primary responsibilities of space active countries is to extend help and support to the disadvantaged countries in such hour of need. It is only through a common policy of disaster management through regional arrangement that the Disaster Charter can achieve its objectives in the Asian region. The answer to the caprices of nature is well within our hands now. All it requires is concerted action.

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\* Data Book on Asia Natural Disasters in the 20<sup>th</sup> Century at <http://www.adrc.or.jp/highlights/Newsno007.pdf> (2000), p.1 (last visited August 22, 2007); as quoted in Atsuyo Ito, "Indian Ocean Tsunami: Highlighting Issues Relating to the Use of Space Technology for Disaster Management", published in V. Gopalakrishnan, and Rajeev Lochan eds., *Proceedings of the ISRO- IISL Space Law Conference*, June 26-29, 2005, Bangalore, India, p. 3-3.

† Charter on Cooperation to Achieve the Coordinated Use of Space Facilities in the Event of Natural or Technological Disasters. All information related to the Charter provided hereinafter have been obtained from the Charter website at [http://www.disasterscharter.org/charter\\_e.html](http://www.disasterscharter.org/charter_e.html) (last visited August 29, 2007).

‡ Atsuyo Ito, "Indian Ocean Tsunami: Highlighting Issues Relating to the Use of Space Technology for Disaster Management", published in V. Gopalakrishnan, and Rajeev Lochan eds., *Proceedings of the ISRO- IISL Space Law Conference*, June 26-29, 2005, Bangalore, India, p. 3-4.

§ Resolution no. 42/169 adopted by the General Assembly of the United Nations, International Decade for Natural Disaster Reduction, December 11, 1987 available at [http://www.proteccioncivil.org/centrodoc/legisla/a\\_42\\_169.htm](http://www.proteccioncivil.org/centrodoc/legisla/a_42_169.htm) (last visited July 5, 2007).

\*\* Quoted from Gabriella Catalano Sgrosso, "Natural Disaster Management", published in V. Gopalakrishnan, and Rajeev Lochan eds., *Proceedings of the ISRO- IISL Space Law Conference*, June 26-29, 2005, Bangalore, India, pp. 3-17-18.

†† Ade Abiodun, "Natural Disasters and their Mitigation Using Space Technology", in *Space Safety and Rescue*, 1992, edited by G.W. Heath, Vol. 84, p. 321; as quoted in supra n. 5.

‡‡ Supra. n. 5 at pp. 3-18-19.

§§ General Assembly Resolution A/41/65 available at <http://www.un.org/documents/ga/res/41/a41r065.htm> (last visited July 5, 2007).

\*\*\* V.S. Mani, "Towards an International Disaster Response Law: Quest for a Role for International Space Law", published in V. Gopalakrishnan, and Rajeev Lochan eds., *Proceedings of the ISRO- IISL Space Law Conference*, June 26-29, 2005, Bangalore, India, p. 3-52.

††† Supra n. 2.

‡‡‡ Supra n. 3.

§§§ Supra n. 2.

\*\*\*\* Peter Macalister-Smith, *International Humanitarian Assistance: Disaster Relief Actions in International Law and Organization* 17 (1985); as quoted in Alejandra De Urioste, "When will help be on the way? The Status of International Disaster Response Law", 15 *Tul. J. Int'l & Comp. L.* 181 (2006) at p. 183.

†††† International Federation of Red Cross & Red Crescent Societies, *World Disasters Report 2000* at p. 145 (last visited July 6, 2007) at <http://www.ifrc.org/docs/pubs/disasters/WDR2000.pdf>; as quoted in Alejandra De Urioste, "When will help be on the way? The Status of International Disaster Response Law", 15 *Tul. J. Int'l & Comp. L.* 181 (2006) at p. 183.

‡‡‡† Alejandra De Urioste, "When will help be on the way? The Status of International Disaster Response Law", 15 *Tul. J. Int'l & Comp. L.* 181 (2006) at p. 184.

§§§§ See supra n. 2.

\*\*\*\*\* J. Bequignon and S. Briggs, "The 'Space and Major Disasters' International Charter", *ESA Bulletin* 107, August 2001, p. 83; as quoted in Joanne Irene Gabrynowicz, "Comments on the Discussion Paper by Dr. I.B.R. Supancana, *Space Contribution for Disaster Management :Legal Framework with Specific Emphasis on the Disaster Charter*", published in *Proceedings of the IISL-MICT Thailand Space Law Conference, August 2-3, 2006, Bangkok, Thailand* at p. 2.

††††† Atsuyo Ito, "Issues in the Implementation of the International Charter on Space and Major Disasters", 21 *Space Policy* 141-149 (2004), at pp. 141-142; as quoted in Joanne Irene Gabrynowicz, "Comments on the Discussion Paper by Dr. I.B.R. Supancana, *Space Contribution for Disaster Management: Legal Framework with Specific Emphasis on the Disaster Charter*", published in *Proceedings of the IISL-MICT Thailand Space Law Conference, August 2-3, 2006, Bangkok, Thailand* at p. 2.

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§§§§§ Supra n. 15 at p. 205.

\*\*\*\*\* David P. Fidler, "ASIL Insight: The Indian Ocean Tsunami and International Law", (January 2005) at <http://www.asil.org/insights/2005/01/insights050118.htm> (last visited July 17, 2007); as quoted in supra n. 15 at p. 205.

†††††† Supra n. 19 at pp. 602-04; as quoted in supra n. 15 at p. 204.

‡‡‡‡†† Joanne Irene Gabrynowicz, "Space Law: Its Cold War Origins and Challenges in the Era of Globalization", 37 *Suffolk U. L. Rev.* 1041 (2004) at pp. 1043-44.

§§§§§§ Ibid.

\*\*\*\*\* Ibid., p. 1052.

††††††† Supra n. 3 at p. 3-7.

‡‡‡‡††† See Article 5.4 of the Charter. "The parties shall ensure that associated bodies which, at the request of the country or countries affected by a disaster, call on the assistance of the parties undertake to:

- alert the Secretariat as soon as possible in the event of a crisis and designate their points of contact;
- promptly provide the Secretariat with the necessary details;
- use the supplied information only for the purposes defined with the Secretariat;
- take part as necessary in the relevant meetings organised by the Secretariat;
- report on the use made of the data, information and services supplied and prepare an assessment of each case for which intervention took place;
- confirm that no legal action will be taken against the parties in the event of bodily injury, damage or



*financial loss arising from the execution or non-execution of activities, services or supplies arising out of the Charter;*

*-meet any other condition agreed with the Secretariat or Board.”*

§§§§§§ Supra n. 3 at p. 3-11.

\*\*\*\*\* Ibid.

+++++++ Supra n. 3 at p. 3-12.

+++++++ Ibid.

§§§§§§ See “Disaster Monitoring Constellation (DMC)” at <http://www.bnsc.gov.uk/content.aspx?nid=5647> (last visited August 27, 2007).

\*\*\*\*\* Supra n. 3 at pp. 3-12.

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