



OSSERVATORIO SUL CONSIGLIO DI SICUREZZA E I DIRITTI UMANI N. 5/2018

1. LEGAL ISSUES CONCERNING REMOTE SENSING DATA AND NATURAL DISASTERS: A NEW AREA OF ACTIVITY FOR THE UNITED NATIONS SECURITY COUNCIL?

1. *Remote Sensing Activities, Natural Disasters and United Nations*

Remote sensing is one of the most important activities carried on in outer space. It consists in acquiring images by sensing and recording reflected or emitted energy through a satellite. Many States possess remote sensing capabilities. In addition, international intergovernmental organizations and private entities operate remote sensing. This results in a large amount of remote sensing data and products that, due to technological advances, have many concrete applications (see S. MARCHISIO, *Remote Sensing for Sustainable Development in International Law*, in G. LAFFERRANDERIE, D. CROWTHER (eds.), *Outlook on Space Law over the Next 30 Years*, The Hague-London-Boston, 1997, pp. 335-350). In certain circumstances, such as in the context of natural disasters, remote sensing activities could play a fundamental role.

Disaster is a general term that comprises different events, which led to loss of lives, displaced people and damages to infrastructures. It could be accompanied by the adjective “natural” or “man-made” in consequences of the kind of such event. “Natural” refers thus a category of disaster linked to natural causes. As specified in the [Draft Articles on the Protection of Persons in the Event of Disasters](#), adopted by the International Law Commission (ILC) at its sixty-eighth session, in 2016, disaster means «*a calamitous event or a series of events resulting in widespread loss of life, great human suffering and distress, mass displacement, or large-scale material or environmental damage, thereby seriously disrupting the functioning of society*» (ILC, *Draft Articles on the Protection of Persons in the Event of Disasters*, in *Yearbook of the International Law Commission*, 2016, vol. II, Part Two, Art. 1).

The thematic of natural disaster management has become a fundamental issue in the context of the United Nations (UN) because of the complex and multidisciplinary questions arising from these kinds of events and for the increasing relevance of such disasters on societies. UN bodies now explicitly recognize the strong link between such emergencies, socio-economic issues and the maintenance of peace. Already in 2007, during the Security Council debate on energy, security and climate, many States stressed the strong relation between floods and droughts leading to massive human migrations and instability for some areas (see UN, *Security Council Debate on “Energy, Security and Climate”*, 17 April 2007).

During the Security Council meeting on Maintenance of International Peace and Security, in July 2018, it has been underlined the multidimensional nature of crisis linked to climate change, not only in terms of long-term effects but also in case of climate disasters. UN Deputy Secretary-General highlighted that fragile countries are in danger of becoming stuck in a cycle of conflicts and climate disasters, exposing their population to massive displacement (UN, *Deputy Secretary-General's remarks at Security Council Debate on "Understanding and Addressing Climate-related Security Risks"*, 11 July 2018).

Understanding the potential benefits of remote sensing, the United Nations have explored the importance of space-based information for improving emergencies and disasters' response. The General Assembly Resolution 41/65 "Principles Relating to Remote Sensing of the Earth from Outer Space", adopted in 1986, refers to the link between remote sensing and natural disasters (UN, [A/RES/41/65](#), *Principles Relating to Remote Sensing of the Earth from Outer Space*, 3 December 1986, *infra*). The outcome document of the Third United Nations Conference on the Explorations and Peaceful Uses of Outer Space (UNISPACE III, 1999) recommended the creation of an integrated, space-based global natural disaster management system (*The Space Millennium: Vienna Declaration on Space and Human Development*, 30 July 1999). In order to implement this recommendation, the Scientific and Technical Subcommittee (STSC) of the Committee on the Peaceful Uses of Outer Space (COPUOS) established an expert group, with members from countries with technical capability or high vulnerability to disasters, to conduct related studies and propose a practical plan for a global disaster mitigation management system. This study led to the creation, in 2006, of the United Nations Platform for Space-based Information for Disaster Management and Emergency Response (UN-SPIDER) which aims at enhancing international coordination at the global level in disaster management and emergency response through access to and use of space-based services for all countries (UN, [A/RES/61/110](#), *United Nations Platform for Space-based Information for Disaster Management and Emergency Response*, 14 December 2006).

In this context, the paper explores the legal nature of the obligations to provide assistance in the case of natural disasters and, in particular, the duty to share remote sensing images as a mean to improve disaster response. This analysis takes into account that the international legal frameworks concerning natural disaster management and remote sensing activities are based, mainly, on general principles, sometimes specified in international treaties or non-binding instruments. Moreover, considering the growing relevance and complexity of such emergencies, the paper analyses the possible role of the UN Security Council in this matter.

2. *The International Legal Framework on Natural Disaster Management*

Natural disaster management is a comprehensive expression, which refers to activities of prevention, preparedness, recovery and reconstruction of areas affected by disaster caused by natural events.

While it is difficult to prevent natural disasters, the impact can often be mitigated by taking appropriate measures beforehand, including the analysis of hazards, vulnerability and risk, and the establishment of legislation and regulatory measures. Practically speaking, it is possible to identify three main phases of disaster management. First, preparedness actions are intended to minimize loss of life and damage to infrastructures, as well as to organize and facilitate timely and effective rescue, relief, and rehabilitation. Second, response entails the

assessment of the impact of disasters, search and rescue operations, and the provision of appropriate relief provided in accordance with such an assessment. Third, recovery, which is coupled with reconstruction, is the phase during which affected countries attempt to get back to a normal state. This phase often takes months, or even years, depending upon the scale and extent of the disaster.

The international legal framework on disaster management can be drawn from rules and principles deriving from different areas of law, such as humanitarian law and human rights as well as environmental and space law. The 2016 Draft Articles on the Protection of Persons in the Event of Disasters, according to its objective, analyses the obligations related to humanitarian assistance and the protection of fundamental rights of persons in a context of disaster. It is debated whether the Draft Articles represent, in all aspects, a codification of customary rules or an example of progressive development (see UNGA, Sixth Committee, *Debate on the Need for Treaty on Protecting Persons in the Event of Disasters*, [GA/L/3586](#), 1 November 2018; see also G. BARTOLINI, *The Draft Articles on “The Protection of Persons in the Event of Disasters”: Towards a Flagship Treaty?*, in *EJIL Talks*, 2 December 2016). However, some of the provisions are without any doubt an expression of customary law. In any case, the draft articles adopted by the ILC represent an authoritative recognition of the state of international law and, in this sense, the document is an extremely useful legal tool.

According to the Draft Articles, it is primarily the responsibility of the affected State to respond to disasters and render assistance to its population. The government assesses the impact, plans relief operations, and gives direction to the actors involved. Foreign governments provide material as well as financial aid. Therefore, it is a sovereign right of the State to evaluate the disaster and coordinate the response within its territory.

Article 10 of the 2016 ILC Draft Articles (*Role of the affected State*) confirms this rule, providing that the affected State has the duty to ensure the protection of persons in its territory, or in territory under its jurisdiction or control. The affected State has the primary role in the direction, control, coordination and supervision of such assistance. Subsequent Article 11 (*Duty of the affected State to seek external assistance*), however, specifies a complementary obligation, which imposes that when a disaster manifestly exceeds the national response capacity, the affected State has the duty to seek assistance from, as appropriate, other States, the United Nations, and other potential assisting actors.

International environmental law also contributes to the clarification of the legal framework applicable to disaster management. Principle 18 of the 1992 Rio Declaration on Environment and Development provides for the notification of any natural disasters or emergencies that are likely to produce harmful effects on the environment of other States. Every effort shall be made by the international community to help States so afflicted. While the emphasis is on transboundary damage, the substance of Principle 18 regards procedural obligation, such as notification, and cooperation through the assistance of the international community (Cfr. P. OKOWA, *Principle 18. Notification and Assistance in Case of Emergency*, in J. E. VIÑUALES, *The Rio Declaration on Environment and Development. A Commentary*, Oxford, 2015, pp. 471-492).

International treaties concerning assistance leave to the affected States a wide discretion in choosing the moment, form and extent of compliance with these principles. For example, Art. 12 of the 1992 Convention on the Transboundary Effects of Industrial Accidents, concluded in the context of the United Nations Economic Commission for Europe (UNECE), as amended in 2015, on the topic of mutual assistance provides that: *«If a Party needs*

assistance in the event of an industrial accident, it may ask for assistance from other Parties, indicating the scope and type of assistance required. The other Parties shall promptly decide and inform whether they are in a position to render the assistance required and indicate the scope and terms of the assistance».

In a similar vein, Art. 15 of the 1992 UNECE Convention on the Protection and Use of Transboundary Watercourses and International Lakes, as amended in 2013, defines a framework for cooperation between the riparian States, which, if a critical situation should arise, shall provide mutual assistance upon request and, to this end, the riparian Parties shall elaborate and agree upon procedures for mutual assistance addressing, *inter alia*: direction, control, coordination and supervision of assistance; local facilities and services to be rendered by the Party requesting assistance, arrangements for holding harmless, indemnifying and/or compensating the assisting Party; methods of reimbursing assistance services.

In addition, regional agreements confirm the role of both cooperation and consent of the affected State. The 2005 ASEAN Agreement on disaster management and emergency response, entered into force in 2009, provides that each affected Party shall have the primary responsibility to respond to disasters occurring within its territory and external assistance shall only be provided upon the request or with the consent of the affected Party. The Requesting Party shall exercise the overall direction, control, coordination and supervision of the assistance within its territory.

Non-binding instruments, such as the Sendai Framework for Disaster Risk Reduction, adopted by UN Member States on 2015 at the Third UN World Conference on Disaster Risk Reduction, recognises that the State has the primary role to reduce disaster risks. The guiding principles of the framework provide that each State has the primary responsibility to prevent and reduce disaster risk, including through international, regional, sub regional, transboundary and bilateral cooperation. The reduction of disaster risk is a common concern for all States and it depends on coordination mechanisms within and across sectors and with relevant stakeholders at all levels, and it requires the full engagement of all State institutions and a clear articulation of responsibilities across public and private stakeholders,

According to the general framework above described, there is a clear consensus that assistance is impermissible without the consent of the affected State. The latter is the only one who has the right to eventually accept assistance from third States, international organizations or private actors. In fact, the general lack of clear consensus on the applicability of the so-called responsibility to protect is even more problematic in the case of natural disasters (Cfr C. FOCARELLI, *Duty to Protect in Cases of Natural Disasters*, in *Max Planck Encyclopedia of Public International Law*, 2013). However, limitations to the principle of consent could derive from the criterion of arbitrariness in refusing an offer of assistance. A refusal is not arbitrary when the affected state is itself willing and able to respond, it has received sufficient assistance elsewhere, the offer is not in accordance with the principles of humanity, neutrality, impartiality and non-discrimination (M. THOMSEN, *The Obligation Not to Arbitrarily Refuse International Disaster Relief: A Question of Sovereignty*, in *Melbourne Journal of International Law*, 2015, pp. 484-521).

3. Remote Sensing and Natural Disasters

Remote sensing is a key tool in supporting disaster-related operations from both inside and outside the affected State by providing critical information about the affected area. In general terms, remote sensing must be carried out in accordance with international law and, as

it is a use of outer space, all States have the right to conduct space-based remote sensing, according to the freedom of exploration and use of outer space established by Art. I of the 1967 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies (OST. On the Treaty, see S. MARCHISIO, *Il Trattato sullo spazio del 1967: passato, presente e futuro*, in *Rivista di diritto internazionale*, 2018, pp. 205-213).

With increased availability, particularly through constellations of satellites or a combination of different satellites operating under a coordinated framework, remote sensing permits users to gain understanding of the precise situations related to disasters in time to help the governments adopt decisions, and to provide them with up-to-date information on the rapidly changing developments during disasters. Remote sensing supports different phases of disaster management and has proved to be particularly beneficial in large-scale disasters, where the extent of the damage is not immediately known.

Capability to respond to this kind of events is strongly linked to the ability to access timely and accurate information in every phase of the management. Regarding prevention, risk assessment is a major operation for disaster prevention and satellite images are useful for hazard mapping, such as tectonic and flood plain maps. Concerning preparedness, satellite images can assist in preparing for impending disasters, or may be used to prepare for possible future disasters. As the response, also the extent of disasters and damage can be assessed effectively using satellite images, comparing that taken before and after the disasters. Finally, in terms of recovery and reconstruction, remote sensing data can provide guidance during all the phase.

Numerous space agencies and other entities voluntarily participate in international or regional disaster management programmes in which they provide assistance under preferential conditions. Others voluntarily provides images free-of-charge in response to disasters, without adherence to specific initiatives (Cfr. S. MARCHISIO, *Contractual Issues and Economic Considerations. Prevention of Natural Disasters: Space and Environments Law at the Crossroad*, in *Proceedings of the International Conference "Natural Disasters and the Role of Satellite Remote-Sensing: Economic and Legal Considerations*, Paris, 2006, pp. 59-64).

There is an increasing number of programmes to utilize satellite data for disaster management, such as the International Charter on Space and Major Disasters (Disaster Charter), the Disaster Monitoring Constellations (DMC), the Copernicus Emergency Management Service (EMS), headed by the European Commission, the Sentinel Asia initiative developed in the context of the Asia-Pacific Regional Space Agency Forum (APRSAP). The key advantage of these programmes is that the beneficiaries can gain access to necessary information more promptly to make appropriate decisions thanks to a combination of data from different satellites.

The Disaster Charter is one of the best example of network for coordinating the use of remote sensing images in case of disasters. It establishes extensive international cooperation amongst remote sensing satellites operators to provide images free-of-charge to the countries affected by disasters, in response to the authorized requests. The Charter was initiated by the European Space Agency (ESA) and the *Centre national d'études spatiales* (CNES) following the UNISPACE III Conference in 1999 and it has been operational since November 2000. It now embraces 17 partners, mainly national space agencies. There are three major ways to activate the Charter: direct activation – activation by the authorized user of a member country;

activation via unauthorized user on behalf of a user from a non-member country; activation via the UN for the UN users.

The mentioned initiatives have proved to be extremely helpful in situations of disasters. For example, few years ago, the Copernicus EMS has been very helpful during the earthquake in central Italy, in 2016. Thanks to the availability of both Sentinel 1-A and Sentinel 1-B scans, scientists were able to quantify the ground movement in both vertical and east-west direction by combining the radar scans obtained.

The use of remote sensing for mitigating the impact from disasters is supported by an important international legal document: the UN Principles Relating to Remote Sensing of the Earth from Space, contained in the GA Resolution 41/65 of 1986. In the Declaration, there is a principle addressing natural disaster. Principle XI encourages the supply of disaster related information to affected States, affirming that: «*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 analysed information in their possession that may be useful to States affected by natural disasters shall transmit such data and information to states concerned as promptly as possible*». Since remote sensing permits data collection of affected States without their consent, foreign States and external entities that wish to render assistance do not have to wait for the approval of the affected State to start sensing.

A key element of the UN remote sensing legal regime is the emphasis on cooperation to which principles V, VIII and XIII of the Declaration are devoted (See S. MARCHISIO, *The 1986 United Nations Principles on Remote Sensing: A Critical Assessment*, in *Scritti in onore di Gaetano Arangio-Ruiz*, Napoli, 2004, pp. 1311-1340). According to the mentioned principles, States and the UN have the duty to promote international cooperation and participation on equitable and mutually acceptable terms, especially regarding the means of developing countries. The duty of States to cooperate is indeed a sort of procedural super-principle that would ensure the effective translation of each of the other principles into reality (S. MARCHISIO, *Legal Aspects of Disaster Management*, in *IISL/ECSL Space Law Symposium on Legal Aspects of Disaster Management and the Contribution of the Law of Outer Space*, 2005, p. 4).

4. Considerations on the Legal Issues concerning the Share of Satellite Data in the Case of Natural Disasters

4.1. On the Duty of Assistance

Concerning the duty of assistance, it could be argued that there are different obligations. From the first side, the affected State has a duty to seek external assistance, according to Art. 11 of the Draft Articles on the Protection of Persons in the Event of Disasters, to the extent that a disaster manifestly exceeds its national response capacity. The assistance should be sought from, as appropriate, other States, the United Nations, and other potential assisting actors.

This obligation complements the duty of the State to protect persons under its jurisdiction, which entails the duty to adopt all necessary measures to guarantee the protection to such persons, and it arises only to the extent that national response capacity is inadequate. GA Resolution 46/182 supports this view, recalling that: «*The magnitude and duration of many emergencies may be beyond the response capacity of many affected countries. International cooperation to address emergency situations and to strengthen the response capacity of affected countries is thus of great importance*» (UN, [A/RES/46/182](#), *Strengthening of the Coordination of Humanitarian Emergency Assistance of the United Nations*, 19 December 1991, Annex, para. 5).

On the other side, once the affected State seeks external assistance, is it possible for a State to refuse to give such assistance? Some authors argue that assistance is to be given on a case-by-case basis. This would allow to make strong political consideration to take a decision.

The emergency response system has not a comprehensive legal framework which impose a positive response to request of assistance. This obligation surely exists in the case of some multilateral treaties concerning assistance in the case of emergencies, such as the 1986 Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency. The 1986 Convention, which represents a standard of conduct in situations of serious emergencies, establishes that a State Party requesting assistance shall specify the scope and type of assistance required and, where practicable, provide the assisting party with such information as may be necessary for that party to determine the extent to which it is able to meet the request. If it is not practicable for the requesting State Party to specify the scope and type of assistance required, the requesting State Party and the assisting party shall, in consultation, decide upon the scope and type of assistance required. State receiving a request for assistance shall promptly decide and notify the requesting State whether it is able to render the assistance requested. The kind of assistance identified by the Convention is material, practical and financial. In this sense, a State could be in a situation of inability to furnish assistance.

As the ILC correctly pointed out, cooperation should not be interpreted as diminishing the primary role of the affected State in the management of the response. The principle of cooperation is to be understood as complementary to the duty of the authorities of the affected State to take care of the persons affected by natural disasters occurring in territory under its jurisdiction or control (ILC see *Draft Articles on the Protection of Persons in the Event of Disasters*, cit., Commentary to Art. 7, para 4).

Although the described duty of assistance appears to be binding only for States parties to the same agreement, a general obligation to give assistance could be deduced from different legal considerations. First, assistance shall be based on elementary considerations of humanity. In the well-known *dictum* in the decision on the *Corfu Channel* case, the International Court of Justice referred to obligations based on «*certain general and well-recognized principles, namely: elementary considerations of humanity*» (ICJ, *Corfu Channel case*, Judgment of 9th April 1949, *I.C.J. Reports*, 1949, p. 22). These general principles provide a certain standard of conduct that permeates international legal relations.

Principles of humanity is at the core of the system of disaster management. Art. 6 of the ILC Draft Articles affirms the central position of the principle of humanity in disaster response (see *Draft Articles on the Protection of Persons in the Event of Disasters*, cit.). Humanity is complemented by principles related to the inherent dignity of the human person, which shall be respected and protected in the event of disasters.

In the case of natural disaster emergencies, the principle of humanity involves the obligation to assist the affected State, where requested, and to cooperate in good faith to protect victims of the disaster. The UNGA Resolution 45/100 of 14 December 1990 provides that “the abandonment of the victims of natural disasters and similar emergency situations without humanitarian assistance constitutes a threat to human life and an offence to human dignity”.

The UNGA Resolution 2625 (XXV) containing the Declaration on Principles of International Law concerning Friendly Relations and Cooperation among States in accordance with the Charter of the United Nations recalls the duty of States to cooperate with one another, irrespective of the differences. Furthermore, every State has the duty to fulfil in good

faith its obligations under the generally recognized principles and rules of international law (UNGA, A/RES/2625 (XXV), 24 October 1970. On the Declaration, see G. ARANGIO-RUIZ, *The Normative Role of the General Assembly of the United Nations and the Declaration of Principles of Friendly Relations*, in *Recueil des Cours de l'Académie de Droit International*, Vol. 137, 1972, pp. 419-742.

Good faith is thus the key element of cooperation in facing natural disasters. In most disasters, the competence to aid the victims is shared amongst different actors; however, such operations are often uncoordinated. The coordination and division of responsibilities, also for possible damages, is also a key issue, as various actors are involved.

Responsibility and liability are fundamental issues because they could arise in situations where the real objective is to aid the affected State and persons under its jurisdiction. Risk of liability for damages could be a strong disincentive for giving assistance to the affected State.

The Disaster Charter represents a successful large-scale model for the effective coordination of disaster relief based on supply of satellite images. In the mechanism established by the Charter, no issue of responsibility for damages is involved in its whole course of operations. Art. 5.4 of the Disaster Charter clearly states 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. Considering the international nature of disaster management, clarification and universal applicability of the Good Samaritan principle is essential. According to this principle, actors giving assistance in situation of emergencies or in grave peril, or otherwise incapacitated are legally immune from liabilities, except when the damage is caused by gross negligence. States and organizations would become more confident about providing and receiving aid if they know precisely the scope of their responsibility and that they will not be held liable, even if the assistance is unsuccessful.

Some authors point out that assistance is characterized by case-by-case responses and spontaneous implementation efforts, but it is also encumbered with political and operational problems, such as the high degree of discretion by the affected and the intervening States. According to them, this practice is an expression of an “imperfect obligation” to assist the State affected by the disaster, which derives from the balance between the principle of sovereignty of State and the principles of good neighbourliness and cooperation (P. OKOWA, *Principle 18*, cit., pp. 488-489; A. ITO, *Legal Aspects of Satellite Remote Sensing*, Leiden-Boston, 2011, pp. 158-162). Imperfect obligation refers to an obligation, as that of charity or gratitude, which cannot be enforced by law, as to say moral duties. However, in the case of natural disaster, a consolidated practice regarding assistance of the affected State has been registered. It is more than a moral duty, it is a legal responsibility. Once the affected State seeks external assistance, third States shall assist the affected State as appropriate, as to say taking all possible measures, in light of the circumstances and their own specific capacities. Thus, in such cases denial of assistance is possible only if the third State is unable to give the necessary aid or if the assistance is too burdensome.

4.2. *On the Duty to Share Remote Sensing Data*

A general obligation to assist the affected State, where requested, derives hence from general principles of humanity and cooperation in good faith. The principle of cooperation, in situations of emergencies, implies duties to notify and share relevant information.

A general obligation of exchange and sharing information exists in particular areas of international law, as a measure to implement the principles of cooperation and good neighbourliness between States. An example of such structure is Art. 17 of the ILC Draft Articles on Prevention of Transboundary Harm from Hazardous Activities, adopted in 2001, which provides: “The State of origin shall, without delay and by the most expeditious means at its disposal, notify the State likely to be affected of an emergency concerning an activity within the scope of the present draft articles and provide it with all relevant and available information.” (UNGA, [A/RES/62/68](#), 6 December 2007, Annex).

In this context, which is the legal meaning of the term “information”? The significance of this kind of concept evolves through times and follows the technological development. Because of the changing nature of this notion, it could be preferable to use a broad approach for the definition of information. The majority of treaties dealing with information contains a broad definition, such as in the case of the Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (Aarhus Convention), adopted in 1998 in the context of the UNECE. According to Art. 1 of the Convention, «[...] *information means any information in written, visual, aural, electronic or any other material form [...]*». A specific type of information regards those data acquired through the use of satellites. There is no doubt that the concept of information via satellite encompasses information derived by remote sensing activities.

Remote sensing, as it is a use of outer space, is regulated by international law, which in the last years has evolved due to the awareness reached by the international community of the imperative need for global partnership to achieve natural disasters prevention and management.

Concerning space-based applications, the Tampere Convention on the Provision of Telecommunication Resources for Disaster Mitigation and Relief Operations, adopted on 18 June 1998, aims at facilitating the use of life-saving telecommunication equipment. Art. 3 of the Tampere Convention refers to «*the deployment of terrestrial and satellite telecommunication equipment to predict, monitor and provide information concerning natural hazards and disasters*» and to «*the sharing of information about natural hazards, health hazards and disasters among the States Parties and with other States, non-State entities and intergovernmental organizations, and the dissemination of such information to the public, particularly to at-risk communities*».

Regarding the sharing of remote sensing data, this kind of information should be allowed for free, due to the extreme constraints and the harmful consequences on the lives and security of human beings. The experience of the Disaster Charter, as well as that of other mechanisms, is relevant.

The mechanism established by the Disaster Charter has had a broad application by States. There have been around 600 activations, in 125 States, since 2000. According to the [2017 Annual Report](#), the Charter was activated 44 times in 2017, covering disasters in 30 countries. As today, there have been 31 activations in 2018. Latest activations regarded a flood in Iraq (25 November 2018), fires in California (USA, 14 November 2018), a flood in Russian Federation (25 October 2018), a landslide in Uganda (12 October 2018), the hurricane Michael in the United States (10 October 2018) and the earthquake and tsunami in Indonesia (29 September 2018). These disasters differ among them for several reasons, but they can be compared for the necessity of remote sensing data to better evaluate damages and improving the response.

In all these cases, the images and data are shared free-of-charge. Already in 2005, relevant doctrine highlighted that «it is [...] evident that data concerning natural disasters should be allowed for free, due to the extreme constraints and the harmful consequences on the life and security of human beings» and that «the tsunami of December 2004 has prompted reflection on remote sensing data pricing policy, shifting toward no charge in case of major disasters» (S. MARCHISIO, *Legal Aspects of Disaster Management*, cit., p. 6). Some authors point out that the Charter is not a treaty, and, in this sense, it does not produce binding obligations for States. This is surely true, but it should be never forgotten that provisions contained in non-binding instruments can evolve, through State practice, and upgrade to customary rules. The large amount of practice concerning the Charter regards cooperation among space agencies, other national organs and international organizations. Such a trend can be considered as one of the best practical means to implement the wording of Art. I of the OSTI, providing: «the exploration and use of outer space shall be carried out for the benefit and in the interests of all countries».

Space agencies are public entities, as to say organs of the State. According to Art. 4 of the Draft Articles on Responsibility of States for Internationally Wrongful Acts, adopted by the ILC at its fifty-third session in 2001, the conduct of any State organ shall be considered an act of that State under international law, whether the organ exercises legislative, executive, judicial or any other functions, whatever position it holds in the organization of the State, and whatever its character as an organ of the central Government or of a territorial unit of the State. An organ includes any person or entity which has that status in accordance with the internal law of the State. Thus, the Commission specifies that the reference to a State organ in Art. 4 is intended in the most general sense. It is not limited to the organs of the central government, to officials at a high level or to persons with responsibility for the external relations of the State. It extends to organs of the government of whatever kind or classification, exercising whatever functions, and at whatever level in the hierarchy, including those at provincial or even local level (ILC, *Yearbook of the International Law Commission*, 2001, vol. II, Part Two).

Furthermore, on the identification of a customary rule, it is fundamental that those States whose interests are specially affected by a custom participate to its making. The International Court of Justice (ICJ) explicitly recognizes that practice must include that of States whose interests were specially affected (see ICJ, *North Sea Continental Shelf*, Judgment, in *I.C.J. Reports*, 1969, para. 73). Concerning the duty to share remote sensing data, it is clear that the practice of those States capable of operating satellites and conducting remote sensing activities is particularly relevant for the consolidation of a customary rule on this matter.

In this sense, the 592 activations of the Charter mechanism, in a time of eighteen years, demonstrates an undeniable practice of relevant States, which freely share remote sensing images to help the affected States. This wide practice, however, is based on the accession to a particular mechanism of cooperation. Hence, considering the widespread participation in these mechanisms and their regional nature, covering almost all geographical areas of the Earth, it is now possible to affirm that a general practice on the sharing of remote sensing data and information, in case of natural disasters, exists. Since outside of the above-mentioned mechanisms the images are shared on a voluntary basis, it is not clear whether the second element of customary law, *opinio iuris*, is present. In any case, there is a general trend related to the sharing of information free-of-charge in case of disasters notwithstanding the reluctance of a few states outside the mentioned networks of cooperation.

In general terms, in the case of natural disasters, legitimate ground for refusal could be in extreme situations that involve essential interests of the State, such as the protection of national security or others legitimate grounds for refusal. Exception based on reasons of national security should be applied in a restrictive manner. It should be also considered that it is highly improbable that sharing remote sensing data concerning the territory of foreign State could be qualified an issue of national security, at least because the images regards territory outside the jurisdiction of the sensing State.

The Draft Articles on the Protection of Persons in the Event of Disasters, due to its humanitarian law-oriented approach, does not directly mention the sharing of satellite data (nor remote sensing, telecommunication or GPS) in the wording of the Articles dedicated to cooperation between States. This deafening silence in the works of the ILC on this topic is somehow mitigated by a brief reference in the Commentary of Art. 8, aimed at specifying that other forms of cooperation, not mentioned in the Draft Articles, such as technology transfer covering, among others, technology relating to satellite imagery, are not excluded.

5. Cooperation in Disasters' Management and Sharing of Remote Sensing Data: Which Role for the Security Council?

Remote sensing plays a vital role in disaster management because of the necessity to precisely define the damages. In this sense, it supports also the phase of relief and reconstruction.

Concerning the United Nations, the system of collective security established by the UN Charter is based mainly on Chapter VII and, thus on the role of the Security Council, which has the power to qualify a situation as a threat to peace and security (S. MARCHISIO, *Le Nazioni Unite e il mantenimento della pace e della sicurezza internazionale tra luci e ombre*, in I. CARACCIOLLO, U. MONTUORO (a cura di), *L'evoluzione del peacekeeping. Il ruolo dell'Italia*, Torino, 2017, pp. 35-50, particularly pp. 38-40). The practice of the Security Council on the issue shows that there is a trend in including new situations in the notion of threat to peace, such as, for example, proliferation of weapons of mass destruction, gross and systematic violations of human rights, massive displacement of persons, sanitary emergencies, foreign fighters. This practice highlights a wide discretionary power of the Council to determine a situation of threat to international peace and security, *ex Art. 39* of the UN Charter, based on the agreement between the five permanent members (See R. CADIN, *I Presupposti dell'azione del Consiglio di sicurezza nell'articolo 39 della Carta delle Nazioni Unite*, Milano, 2008).

As mentioned above, natural disasters are increasing phenomena that represent a common concern for the international community (See also K. PARK, *Law on Natural Disasters. From Law to Solidarity?*, in E. BENVENISTI, G. NOLTE (eds.), *Community Interests Across International Law*, Oxford, 2018, pp. 136-150). In worst cases, natural disasters exceed national boundaries. In other cases, the effects of a disaster can have transboundary nature, as in the case of the creation of massive displacement of peoples outside the affected State. These extreme situations could be so serious as to induce the UN Security Council to deal with it by declaring the situation as a threat to international peace and security, according to Art. 39 of the UN Charter (Cfr. K. PETERS, *Disasters, Climate Change, and Securitisation: the United Nations Security Council and the United Kingdom's Security Policy*, in *Disasters*, 2018, pp. 196-214).

An intervention of this kind would induce the Security Council to recommend to the States to take all necessary measures to deal with this threat, including support to the affected

State through the sharing of information in their possession, thus also the information deriving from remote sensing.

Assuming that a resolution is adopted under Chapter VII, concerning situations in which the affected State is not able to intervene autonomously, such an act would be directed to all UN member States, thus producing the effect of creating obligations also for those States which are not parties of bilateral or multilateral treaties of cooperation and assistance in case of emergencies. Such a position of the Security Council would not change the scope of the obligations of assistance and sharing of remote sensing data which already, in the context of natural disasters' management and the various cooperation mechanisms, are well established.

However, an intervention by the Security Council would still be desirable to emphasize the importance of coordination in responding to events of this kind. Moreover, such a legal act could endorse the already existing mechanisms and, in this sense, would strengthen the related obligations.

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