

Legal Aspects of Planetary Defence: Obligation to Inform and to Act, Liability, Responsibility, and International Decision-Making

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Obligation to Inform About a NEO Impact Threat

- Several **international instruments** provide a **basis for an obligation to inform**
- **Article XI Outer Space Treaty (1967)**: States shall **inform**, to the greatest extent feasible and practicable, about the nature, conduct, locations and **results of space activities**
- **Principle X of the Remote Sensing Principles (1986)**: ... States participating in remote sensing activities that have identified information in their possession that is capable of averting any phenomenon **harmful to the Earth's natural environment shall disclose such information to States concerned**
- **Elementary considerations of humanity** (see the 1949 International Court of Justice *Corfu Channel case*) speak in favor of a **duty to share information** in order **to avoid the loss of human lives**

Obligation to Act to Mitigate a NEO Impact Threat

- **No instrument** of international law **explicitly establishes** an **obligation** of States **to take action to mitigate a NEO impact threat**
- **Article 1 UN Charter:** Among the **purposes of the United Nations** is to achieve international **co-operation** in **solving international problems** of an **economic, social, cultural, or humanitarian character**, and in promoting and encouraging **respect for human rights** and for fundamental freedoms for all
- **Article 2 UN Charter:** All **Members** shall **give the United Nations every assistance** in any action it takes in accordance with the Charter
- The **human right to life** (ICCPR, ACHPR, ACHR, ECHR) includes a (“due diligence”) **obligation** of States to **ensure the right to life of those under their jurisdiction**, including appropriate steps to safeguard human lives, **taking into account their respective capacities and availability of resources**

- **Responsibility** describes the **consequences arising from a breach of an international obligation**
- **Difference to liability:** a State may be held internationally **responsible** for a wrongful act even though there is no material damage ↔ a State may be held internationally **liable** for damage even though it did not act wrongfully
- **Responsibility arises** when a State commits an **internationally wrongful act**, for example obligations under the **UN treaties on outer space**, or **other treaties**
- **Article VI Outer Space Treaty:** States bear international responsibility for “national activities” conducted in outer space, whether undertaken by **governmental agencies** or **non-governmental entities**; they need to **authorize and continuously supervise** non-governmental activities

Liability: Burden and Protection

- Liability can be generally described as the **duty to compensate for damage** caused by actions which, per se, are not necessarily unlawful
- The **Liability Convention** creates a unique **victim-oriented liability regime for space activities** → “**Burden and Protection**”
 - **Article II:** A launching State is “**absolutely**” liable to pay compensation for **damage caused** by its space object on the **surface of the Earth** or to aircraft in flight
 - **Article III:** A launching State is liable for **damage caused** by its space object **elsewhere than on the surface of the Earth** (e.g. to another State’s satellite) only if the damage is **due to its fault**

Launching State

According to the UN Space Treaties (OST, LIAB, REG) the “**launching State**” is a State:

- Which **launches** or **procures** the launching of a space object, or
- From whose **territory** or **facility** a space object is launched
 - Up to 4 “launching States” for one space object are possible
 - They are “jointly and severally liable” for damage caused by the space object

Issues specific to planetary defence:

- **Who is a “launching State”? Who is a victim/third party/innocent bystander?**
 - Is a State that requests, supports, or endorses a planetary defence mission a “launching State”, because it “procures” the launch?
 - If not, is this State a victim/third party/innocent bystander entitled to full protection?

Causation

- In the case of a planetary defence mission the **potential liability for damage could be immense**, which could **deter States** from carrying out such a mission

Issues specific to planetary defence:

- **What could “caused by/causation” mean?**
 - The duty to compensate for damage depends on the demonstration that the damage **is caused by a human-made space object**.
 - Would the launching State of a space object be liable **if a NEO causes damage** as the result of a **human-induced intervention**, such as the alteration of the trajectory of the NEO?
 - The **damage must be attributable** to the incident caused by the space object, without an interruption of the **chain of causation** by other incidents.
- **Indirect causation may likely be sufficient** to trigger liability and be legally actionable.

Possible measures to mitigate the risk of being held liable

- **Measure 1: Agreement between launching States**
 - Two or more launching States are jointly and severally liable
 - Article V LIAB suggests “agreements” among those regarding the apportioning of the financial obligations between them
 - An agreement of States directly carrying out a PD mission with States “asking for or agreeing to” (= “procuring”?) the planetary defence mission could exclude their role as beneficiaries of the space law liability regime

- **Measure 2: Agreement beyond the circle of launching States**
 - **International mandate**
 - For example, based on UN Security Council decision
 - Would embrace all UN member States
 - **International understanding or agreement**
 - For example, addressing a specific case of a PD measure triggered in case of emergency
 - Depending on content, context and circumstances, could be regarded as *lex specialis* to the LIAB
 - **Waivers of liability**
 - These could be given by States potentially benefitting from or being affected by a PD mission
 - May lead to a general discussion on exoneration from liability in return for undertaking a PD mission (“relief in return for action”)
 - **Non-legally binding instruments**
 - More easily to achieve but would not suffice to override existing legal obligations

- **General aspects of reaching agreement**
 - Anticipating the mitigation of liability risk is preferable over seeking solutions afterwards
 - Instruments should be developed *before* PD missions are carried out
 - Templates could be developed
 - Advisable in view of uncertainties about actual impact area and possible failures of PD mission
 - Waivers of liability could create incentives for States to conduct PD missions
 - Safeguards against negligent or intentionally destructive actions could be included
 - Compensation for victims and assistance for States that suffered damage could also be included
 - Adequate balance of interests could reduce the likelihood of subsequent disputes

There are **a number of bodies** in which decisions regarding planetary defence could be taken:

- **United Nations General Assembly (UNGA)**
 - Universal membership
 - Contribution to broad political support for planetary defence action
 - Decisions/resolutions of the UN GA are “Recommendations” to the UN members, not legally binding
- **United Nations Committee on the Peaceful Uses of Outer Space (UNCOPUOS)**
 - Membership is not universal, but includes most important space-faring nations
 - Experience and expertise in the areas of space science, technology, law and policy
 - Decisions are taken by consensus, do not have legally binding effect on UN members
 - UNCOPUOS reports to the UN GA, which can take further action, including submission to the UN Security Council

- **United Nations Security Council**
 - Membership is not universal
 - Decision-making: majority of 9 of 15 votes, right to veto of the five permanent members
 - Decisions are binding and prevail over conflicting obligations under international law
- **Ad-hoc decision-making group**
 - Specific structures and decision-making procedures for planetary defence purposes could be set up
 - Feasibility, financing, timing, and legitimacy would need to be discussed

Generally: Multilateral approaches would give **more legal certainty** to the State(s) carrying out the mission, in contrast to unilateral actions

Conclusion

- **International cooperation and coordination** with respect to potential **future planetary defence missions** is needed
- **Instruments** could be **developed in advance** to address problematic issues before action is taken.

These could address:

- Modalities for the **dissemination of information** regarding NEO impact threats
- Elements of a **mandate** to carry out a planetary defence mission
- A draft **agreement** between the potentially **affected State(s)** and the **State(s)** conducting **the mission**
- **Modalities for cooperation** and **common procedures** to undertake a mission
- Generally agreed **criteria for the selection** and **parameters for the authorization of planetary defence methods**
- **Liability** considerations (waivers of liability, modalities for compensation of victims)

Thank you for your attention

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