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EDITORIAL

World Health Organisation declared Covid-19 as a pandemic on 11th March 2020. The rapid spread of pandemic Covid-19 drastically disrupted all walks of human life across the world including education. It was a situation of crisis for education, because no responsible nation can afford to stop the process of research, learning and teaching. In India about 32 crore learners stopped going to schools and colleges. Campus activities were completely stalled. Despite of all these challenges the higher educational institutions have reacted positively and managed to ensure the continuity of teaching- learning and research during pandemic lock down. The Covid-19 pandemic reminded the entire world how necessity can become the mother ofinvention. The pandemic has shut down the existing avenues, optimism made the people to discover the new avenues. The educational institutions also did not lag behind to find new avenues. Compelled by the crisis they at the earliest switched the gear to adopt the online teaching learning which paved the way for the beginning of a virtual learning culture.In this situation of crisis the VaikuntaBaliga College of Law, udupi one of the premier institutions in the state taken sincere steps to organize two day international seminar (Online) on the CHANGING DYNAMICS OF INTERNATIONAL LAW IN THE 21ST CENTURY on 10th and 11th July, 2020.

Growing complexities and highly dynamic nature have always been the two key features of international politics. After having undergone big changes under the impact of the Second World War, the relations among nations have changed and are still changing in this 21st century. In fact the speed with which the changes are taking place has increased by manifold due to various economic and political factors. These changes in international politics and relations have deeply impacted international law. In effect the international law is entangled with conflict of interests, unequal powers,

compromises, adjustments and settlements, reaching and maintaining a right balance in international law is of utmost significance for global peace and security. Hence, international law has to adapt itself to changing equations and circumstances.

International seminar was inaugurated by Prof (Dr.) P IshwarBhat Vice Chancellor Karnataka State Law University Hubballi, followed by ten technical sessions chaired by eminent legal luminaries.Out of ten sessions six sessions were chaired by renowned professors from premier foreign universities. Deliberations were held on some of the significant aspects of international law like international environmental law, developments in international aviation law and adoption of conventions on liability, safety and security of passengers, space technology and law in 21st century, significance of the law of the sea and issues relating to jurisdiction and sovereignty in sea, international peace and security, conflicts and wars on the issues relating to terrorism, religion, border disputes, economic and trade issues, role of international organisations like UNO and other instrumentalities to maintain international peace and security to uphold the humanitarian values. Few well research papers on the concerned theme presented by the delegates were selected by the editorial board for the publication in this special issue of VBCL Law Review.

We express our heartfelt gratitude to Prof (Dr.) Sandeepa Bhat National University of Juridical Sciences West Bengal who was instrumental in organizing this international seminar. I also thank the seminar coordinator Prof. B G Shankaramurty senior faculty and other members of organizing team.

Prof. (Dr.) Prakash Kanive
Principal
Vaikunta Baliga College of Law, Udupi-02

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Air And Space Law

THE EXPANSION OF THE ENVIRONMENTAL CRISIS INTO OUTER SPACE

Dr.Martha Mejía-Kaiser*

ABSTRACT

In recent years, an increasing number of countries at various economic and scientific levels have entered the arena of space activities. They either launch and operate satellites themselves, or they contract launches and services of countries that have such capabilities. These activities of a broad range of countries can be seen as a realization of the provisions of Article I of the Space Treaty: exploring and using space "[…] for the benefit and in the interest of all countries […]". It is undisputed that our modern society benefits from space activities for telecommunications, meteorological forecast and navigation, to name only some of them.

However, for every satellite launched into outer space, detached objectsare abandoned (as part of normal launch operations). Satellites that cannot be controlled due to lack of fuel or malfunction are also abandoned in orbit. Many of these objects have accumulated in space and endanger astronauts, their ships, and remotely operated space objects. States make use of their right to explore and to use space. But don't they have obligations to preserve it? This articleaddressesrecommendations of the Inter-Agency Space Debris Coordination Committee (IADC), which enjoy an increasing recognition by institutions, such as the United Nations (UN). A growing number of States also follow such recommendations by implementing them through their national legislation.

The question arises if the international community will be on time to avert damage to the orbital environment of the Earth, that could have a large detrimental impact on our modern society.

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INTRODUCTION

Operational space objects moving around our planet (satellites[1]) are mostly for commercial uses.In recent years, an increasing number of countries of various economic and scientific levels have entered the arena of space activities, either through the launch and operation of satellites themselves, or through the promotion of such launch, hiring the services of countries that have such capabilities.

In the first years of the space era, it became evident that space activities would increase. However, nobody foresaw that such activities would be realized by a growing number of countries and pollute the orbits around our planet.

How is outer space polluted? After the launch, several objects detach from the launcher on its way to bring a satellite into outer space. Some of them detach in the atmosphere, some of them in outer space. Once a satellite is released from the last launcher stage, it unfolds to prepare for operations. In this process, small items are also released, such as sensor protectors, thermal blankets, restraint cables, solar panel clamps, bolts and nuts. These released space objects take their own orbital path. All non-functional space objects are known as 'space debris'. Space debris objects are under the effects of the gravitational pull of the Earth that lower their orbital paths in direction to the Earth's atmosphere. It is expected that once aspace debris object with less than 20 kg mass enters the atmosphere, it is fully destroyed by friction.[2]More massive space debris objects survive the fiery atmospheric re-entry and reach the soil.[3]

The higher is the orbit of a space object, the longer it will take to re-enter the atmosphere. Objects that are in outer space are called 'orbital space debris'. Since many years an accumulation in outer space of orbital space debris objects can be observed. One can make the analogy with abandoned floating plastic objects in the ocean that do not sink immediately and move in unpredictable currents for incalculable time.

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1 The term 'satellite' is defined as: "A body which revolves around another body of preponderant mass and which has a motion primarily and permanently determined by the force of attraction of that other body." International Telecommunication Union (ITU), Radio Regulations, Article 1.179. ITU, Radio Regulations, edition 2012, http://search.itu.int/history/HistoryDigitalCollectionDocLibrary/1.41.48.en.101.pdf. See also Amelia Carolina Sparavigna, "The Word Satellite, its Origin from Etruscan and its Translation into Greek", in Philica, article number 568, Jan. 29, 2016, https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2899407.

2 See Position Paper on Space Debris Mitigation-Implementing Zero Debris Creation Zones, International Academy of Astronautics (IAA), eds. Christoph Bonnal and Walter Flury, Oct. 15, 2005, 25, http://www.esa.int/esapub/sp/sp1301/sp1301.pdf.

3 See articles on spacecraft atmospheric reentry in Space Safety Magazine, http://www.spacesafetymagazine.com/space-debris/falling-satellite/. See also information on reentries inAerospace Corporation, https://aerospace.org/reentries.

RAPID POLLUTION IN LOW EARTH ORBITS

Space debris objects, moving at different speeds, in changing directions and altitudes, pose a danger to the operational satellites and humans in outer space.

The increasing accumulation of space debris objects prompted specialists from various space agencies to meet and to propose measures to mitigate the generation of space debris. These specialists instituted the Inter-Agency Space Debris Coordination Committee (IADC).

There is no international agreed definition of 'space debris', but the IADC defines it as: "[…] all man-made objects including fragments and elements thereof, in Earth orbit or re-entering the atmosphere, that are not functional".[4]

Although there are orbits at different altitudes, the IADC decided to start by focusing their efforts on two areas: the low Earth orbits and the Geostationary Orbit, both of which the IADC declared as 'Protected Regions'. The low Earth orbits (LEO) are the ones that are up to 2000 km altitude.

The IADC developed and published in 2002 a set of recommendations to mitigate the production of space debris.[5]The IADC proposed that satellites, which were about to finish their fuel, use the remaining fuel to ignite their motors to bring down their orbit and thus speed up the time for re-entering the Earth's atmosphere (de-orbit). The proposal was to lower the satellites to at least 600 km altitude, from where they re-enter the atmosphere inless than25 years.

This 600 km altitude limit measure is currently under debate in the United States.[6]The Federal Communications Commission wants to impose a new regulatory limit of 400 km for orbits of small satellites[7] that do not have propulsion systems. For orbits above 400 km altitude, US licensed satellites would then be required to have motors in order to avoid collisions, and for the lowering their altitude at their end-of-life.

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4 See Inter-Agency Space Debris Coordination Committee (IADC), 3.1 Space Debris. IADC, Space Debris Mitigation Guidelines, Oct. 15, 2002 (revision 2, March 2020), IADC-02-01, 6, https://www.iadc-home.org/documents_public/view/id/82#u.

5 IADC, Space Debris Mitigation Guidelines, ibid.

6 Caleb Henry, "FCC urged to delay vote on new space debris regulations", Space News, April 17, 2020, https://spacenews.com/fcc-urged-to-delay-vote-on-new-space-debris-regulations/.

7 See International Standardization Organization (ISO), International Space systems — Cube satellites (CubeSats), ISO Standard, ISO 17770:2017, published in 2017, abstract available at: https://www.iso.org/standard/60496.html, and https://www.iso.org/obp/ui/#iso:std:iso:17770:ed-1:v1:en.

It is important to note that the International Space Station orbits at about 400 km[8], which would be protected with this regulation– an urgent step in the present race of orbitinglarge numbers of cube satellites. However, private companies manufacturing small satellites oppose such a legislation proposal.

In low Earth orbits, other problems are large satelliteconstellations.[9] Even though the satellites of the evolving large constellations have propulsion, about 10% of the satellites of each constellation malfunction and transform into space debris right after separation from their launcher. To this percentage needs to be added thenumber of satellites that malfunction during their operational lifetime. At present, there are approximately 2,300 operational satellites and more than 30,000 space debris objects larger than 10 cm in the LEO Region.[10] It is expected that for the deployment of large constellation about 20,000 new satellites will be launched in the LEO region during the next 10 years.[11]

Some States follow the recommendation to lower the orbits of satellites after decommissioning or malfunctioning (if propulsion and guidance systems are still intact). However, the dramatic increase of space debriswhich originates from the deployment of large constellations will result in a mounting pollution, that will be impossible to mitigate withexisting measures.[12]In addition to this, researchers assess that the present amount of orbital space debris will collide, dismember and produce more collisions with other space objects in a cascade effect, even when fully observing of the Space Debris Mitigation Guidelines.This effect is known as the 'Kessler Syndrome'.[13]When this point is reached, no satellite will be saved. LEO satellite services forcommunications, remote sensing and other applications will be hampered.

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8 See the altitude of the International Space Station at Live Real Time Satellite Tracking,accessed July 1, 2020, https://www.n2yo.com/.

9 See Debra Werner, "Will megaconstellations cause a dangerous spike in orbital debris?", Space News, Nov. 15, 2018, https://spacenews.com/will-megaconstellations-cause-a-dangerous-spike-in-orbital-debris/. See transit of SpaceX's Starlink constellation over your area at Heavens Above, https://www.heavens-above.com/.

10 See European Space Agency (ESA), "Space Debris by the Numbers", ESA, Space Debris(Jan. 2019), http://www.esa. int/Safety_Security /Space_Debris/ Space _ debris_by_ the_numbers.

11 See Werner, Will mega constellations cause a dangerous spike in orbital debris?,supra9.

12 In 2017, the IADC released a statement with recommendations for the deployment of large constellations. See IADC Statement on Large Constellations of Satellites in Low Earth Orbit, Sep. 2017 2020, IADC-15-03, https://www.iadc-home.org/documents_public/view/id/82#u.

13 The 'Kessler Syndrome' was named after one of the co-authors of the article Donald Kessler and Burton Cour-Palais, "Collision Frequency of Artificial Satellites: The Creation of a Debris Belt", in Journal of Geophysical Research 83, no. A6 (June 1, 1978).

THE GEOSTATIONARY ORBIT

The Geostationary Orbit is only one circular orbit at about 36,000 km altitude, parallel to the Earth's equator. Satellites placed here, move from West to East,synchronized with the rotation of the Earth, and appear to be stationed above the Earth's equator. This orbit is heavily used by the telecommunications industry.It is of great interest not only for private companies, governments and international organizations, but also for the normal citizen, who is the end user of such telecommunications. More than 500 satellites operate here.For the protection of this orbit, the IADC added an area around the geostationary line to protect the satellites that arrive to their slots, that change their slots, and that have slightly inclined or eccentric orbits. TheGeostationary Protected Regionthus has a three-dimensional shape, like a ring.

Unfortunately, space debris is also accumulating in the Geostationary Protected Region. There are more than 1000 non-functional objects measuring at least 1 meter-cross-section.

Since the satellites are too far from the Earth's surface, the 600 km altitude limit of LEO does not make sense here.The IADC therefore recommends that satellites use the last kilograms of fuel to be lifted into orbits outsidethe Geostationary Protected Region, into so called 'graveyard orbits'. This transfer to a higher orbit is known as 're-orbiting'.[14]

Over the years, this IADC recommendation has been recognized by an increasing number of international organizations and countries.In the United Nations, the Committee on the Peaceful Uses of Outer Space (COPUOS) established its own set of recommendations,[15] largely based on the recommendations of the IADC. These recommendations were adopted by the General Assembly in a resolution.[16]The International Organization for Standardization, whose standards often become commercial market requirements, has also started publishing standards for space debris mitigation.[17]Likewise, the International Telecommunication Union has

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14 Due to the gravitational pull of the Earth, the IADC recommends that satellites in these orbits do not re-enter the Geostationary Protected Region during at least 100 years.

15 See UN, Space Debris Mitigation Guidelines of the Committee on the Peaceful Uses of Outer Space, Report of the Committee on the Peaceful Uses of Outer Space, UN Doc. A/62/20, June 15, 2007, 47-50 [Annex], http:// www. unoosa . org/pdf/gadocs/A_62_20E.pdf.

16 See UNGeneral Assembly (UNGA) Resolution, International Cooperation in the Peaceful Uses of Outer Space, UN Doc. A/RES/62/217, Dec. 22, 2007, [paragraphs 26 - 28], https://undocs.org/A/RES/62/217.

17 Example of ISO standards: Disposal of Satellites Operating at Geosynchronous Altitude, ISO Standard, ISO 26872:2010, TC20/SC14, ISO/DIS 26872, published in (2010), abstract available at: http://www.iso.org /iso/i so _ catalogue / catalogue_tc / catalogue_detail.htm?csnumber=43853.

issued recommendations to protect the Geostationary Region.[18]

More than 10 States have adopted national legislation that make reference to the re-orbit recommendation.[19]

But docountries actually re-orbit?

According to surveillance observations from 1998 to 2018,[20] countries and international organizations have followed the recommendation to re-orbit (see table).

Re-orbiting practice – IADC conformity 1998-2018	
Argentina	Russian Federation
Australia	Saudi Arabia
Brazil	Sweden
Canada	Thailand
China	Turkey
Egypt	United Kingdom
France	United Arab Emirates
India	United States
Japan	
Kazakhstan	ESA
Luxembourg	EUTELSAT
Malaysia	EUMETSAT
Mauritius	ITSO/INTELSAT
Mexico	IMSO/INMARSAT
Norway	NATO

In this period of 20 years, based on a total of 300 satellitesthat reached their and of life, 177 were correctly re-orbited following the IADC recommendation.

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18 See ITU, Environmental Protection of the Geostationary-Satellite Orbit, Recommendation ITU-R S.1003-2, (Question ITU-R 34/4) (1993-2003-2010), 1, Recommendation 3, https://www.itu.int/dms_pubrec/itu-r/rec/s/R-REC-S.1003-2-201012-I!!PDF-E.pdf.

19 United States became the first country to make mandatory the re-orbiting of satellites. See the United States, US 47CFR25, § 25.283 End-of-life disposal in Code of Federal Regulations, US Government Printing Office, Title 47 - Telecommunication, http://www.ecfr.gov/cgi-bin/text-idx? SID= f0e96087ff1 ac46 ccb6ac590e4969acb&mc=true&tpl=/ecfrbrowse/Title47/47cfr25_main_02.tpl. Other countries with implicit or explicit reference to this recommendation in national legislation are Austria, Belgium, Canada, China, Denmark, Finland, France, Germany, Japan, New Zealand, Ukraine, United Kingdom. See Martha Mejía-Kaiser, The Geostationary Ring - Practice and Law (Leiden: Brill/Nijhoff), 2020, Chapter 7, section 3.2.

20 See ESA/ESOC, Classification of Geosynchronous Objects, Issues 1 to 21 (1998-2018), Summary sections. Most of the reports are available on the Internet.

DOESANY TREATYPROHIBIT THE GENERATION OF SPACE DEBRIS?

After the launch of the Soviet Sputnik-1 in 1957, the first space object in history, delegates at UN COPUOS convened to draft five space treaties:

- Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty), 1967;[21]
- Agreement on the Rescue of Astronauts, the Return of Astronauts and the Return of Objects Launched into Outer Space (Rescue Agreement), 1968;[22]

Convention on International Liability for Damage Caused by Space Objects (Liability Convention), 1972;[23]

Convention on Registration of Objects Launched into Outer Space (Registration Convention), 1975;[24]

Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (Moon Agreement), 1979.[25]

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21 Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, Including the Moon and Other Celestial Bodies (Outer Space Treaty), Jan. 27, 1967, entered into force Oct. 10, 1967; 18 UST 2410; TIAS 6347; 610 UNTS 205; http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html. As of Jan. 1, 2020, 110 States have ratified this treaty. See Status of International Agreements Relating to Activities in Outer Space as at 1 January 2020, United Nations, Office for Outer Space Affairs, 10, https:// www. unoosa. org/ documents /pdf/ spacelaw/treatystatus/TreatiesStatus-2020E.pdf.

22 Agreement on the Rescue of Astronauts, the Return of Astronauts, and the Return of Objects Launched Into Outer Space (Rescue Agreement), Apr. 22, 1968, entered into force Dec. 3, 1968; 19 UST 7570; 672 UNTS 119; http://www. unoosa. org/oosa/en/ourwork/spacelaw/treaties.html. As of Jan. 1, 2020, 98 States have ratified this treaty. See Status of International Agreements Relating to Activities in Outer Space, supra21.

23 Convention on International Liability for Damage Caused by Space Objects (Liability Convention), Mar. 29, 1972, entered into force Sep. 1, 1972; 24 UST 2389; TIAS 7762; 961 UNTS 187; http:// www. unoosa. org/ oosa /en / ourwork / spacelaw/treaties.html. As of Jan. 1, 2020, 98 States have ratified this treaty. See Status of International Agreements Relating to Activities in Outer Space, supra21.

24 Convention on Registration of Objects Launched into Outer Space (Registration Convention), Jan. 14, 1975, entered into force Sept. 15, 1976; 28 UST 695; 1023 UNTS 15; http://www.unoosa.org/oosa/en/ourwork/spacelaw/treaties.html. As of Jan. 1, 2020, 69 States have ratified this treaty. See Status of International Agreements Relating to Activities in Outer Space, supra21.

25 Agreement Governing the Activities of States on the Moon and Other Celestial Bodies(Moon Agreement),Dec. 18, 1979, entered into force July 11, 1984; 18 ILM 1434; 1363 UNTS 3; http://www. unoosa.org/ oosa/en/ ourwork / spacelaw/treaties.html. As of Jan. 1, 2020,18 States have ratified this treaty. See Status of International Agreements Relating to Activities in Outer Space, supra 21.

After the last treaty was negotiated, States have been reluctant to adopt new binding obligations, so no more multilateral space treaties have been adopted thereafter.[26]The UN General Assembly has endorsed several resolutions thatset guidelines for States when performing space activities, but they only have recommendatory character.

During the drafting of the space treaties, the contamination of outer space with space debris around our planet did not exist, so it was not a concern. However, one treatyaddresses pollution.Article IX of the Outer Space Treaty stipulates: "[…] States Parties to the Treaty shall […] conduct exploration of [outer space] so as to avoid [its]harmful contamination […]." This Article does not include the word 'use' in connection to 'harmful contamination'; it does not define what is 'harmful contamination' and neither gives a hint ona threshold at whichcontamination becomes'harmful'. These questions need to beclearly defined to make a State responsible for its breach of a duty under this treatywhenharmfully contaminating'outer space'. So far, States havenot been challenged for breaching this provision,not eventhose States that have accumulated pollutionin outer space during many years, and neither those that have heavily polluted it bya single action.[27]

Another treaty, the Liability Convention, addresses damage to persons and property of other Statescaused by space objects. In this treaty, two kinds of liabilities are specified. Liability of a State for damage 'on the surface on the Earth' is absolute, if a causal link can be established between its space

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26 Of course, there are bi- and multilateral space treaties for specific endeavors.

27 In February 2007, China destroyed an old Chinese satellite Feng Yun 1C which was at 865 km altitude, with a missile launched from Earth. One year later, also with a missile launched from Earth, the United States destroyed the satellite USA-193, which was at about 250 km altitude. In 2019, India destroyed its satellite Microsat-R at 300 km altitude with a missile sent from Earth. These destructions produced space debris that are still in orbit. See Global Counterspace Capabilities: An Open Source Assessment, Secure World Foundation (SWF), ed. Brian Weeden and Victoria Samson, Apr. 2020, on the Chinese Feng Yun 1C destruction: p. 1-10; on the USA-193 destruction: p. 5-3 and Live Real Time Satellite Tracking,https://www.n2yo.com/satellite/?s=29651; on the destruction of the Indian Microsat-R satellite: pp. 5-2 & 5-3,https://swfound.org/media/206970/swf_counterspace2020_electronic_final.pdf.
On the USA-193, ESA reported "[i]n the short-term, however, the risk of penetration of the shields of the [International Space Station] manned modules by USA-193 fragments larger than 1 cm increased by about 30%." "Space Debris, Frequently Asked Questions", ESA, Apr. 20, 2013, http: // www. esa.int / Our_ Activities /Operations /Space_Debris/FAQ_Frequently_asked_questions.
On the Indian Microsat-R satellite, the SWF commented that US Space Control "[…] tracked roughly 125 pieces of debris from this test; as of February 2020, there were still 10 pieces being tracked, and at least some pieces had been thrown to an altitude of 1000 km due to collision dynamics, as happened with the February 2008 intercept of USA 193 by the United States […]". SWF, Global Counterspace Capabilities,ibid, p. 5-3.

object and the damagecaused.[28] The other kind of liability is for damage to persons and property of other States'in outer space', but only if a State caused the damage "[…] due to its fault […]".[29]Unfortunately, no definition of 'fault' is included in any space treaty, which makesit difficulttoapply the Liability Convention for compensation of damage causedin outer spaceto a State by the space debris of other State.[30]

Despite the mounting space debris around our planet,it is discouraging thatno negotiations at the United Nations are taking place to prohibit the generation of space debris.[31]The General Assembly resolution that endorsed to follow the space debris recommendations of COPUOS is only on a 'voluntary basis'.[32] This reluctance of States to adopt obligations, to assure that outer space stays operational,endangers the use of outer space for the benefit of the whole international society.

What will happen in these uncertain times when space actors, driven by commercial interests, endanger the space environment around our planet and no treaty can protect us against this?

IS THERE HOPE?

Since several years, academics in physical and social sciences discuss methods to remove space debris,[33] as a way to remediate the damage that has

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28 Article II of the Liability Convention stipulates: "A launching State shall be absolutely liable to pay compensation for damages caused by its space object on the surface of the Earth or to aircraft in flight". Liability Convention, Art. II, supra23.

29 Article III of the Liability Convention stipulates: "In the event of damage being caused elsewhere than on the surface of the Earth to a space object of one launching State or to persons or property on board such a space object by a space object of another launching State, the later shall be liable only if the damage is due to its fault or the fault of persons for whom it is responsible." Liability Convention, Art. III, supra23.

30 After ESA extended the operation of its Envisat satellite using its last fuel resources, it finally malfunctioned at 780 km altitude, despite warnings of space debris specialists. See Martha Mejía-Kaiser, "ESA's Choice of Futures: Envisat Removal or First Liability Case", in Proceedings of the IISL Colloquium on the Law of Outer Space, IAC-12.E7.5.11. (2012),http://ssrn.com/author=3412227. After the presentation of this paper, ESA commissioned studies to de-orbit this satellite. See the Envisat position at Live Real Time Satellite Tracking,accessed July 5, 2020, https:// www. n2yo.com/satellite/?s=27386#results.

31 The International Law Association (ILA), a group of experts, submitted to COPUOS a draft proposal to prohibit the generation of space debris, but did not receive attention. See Draft International Instrument on the Protection of the Environment from Damage Caused by Space Debris, which was submitted to COPUOS. See Karl-Heinz Böckstiegel, "ILA Draft Convention on Space Debris", in ZLW 43, issue 1 (1994) 395-400.

32 UNGA Resolution, A/RES/62/217, supra16.

33 See section 'Efforts to Mitigate Hazardous Orbital Space Debris' in Martha Mejía-Kaiser, "Space Law and Hazardous Space Debris", Oxford Research Encyclopedias - Planetary Science, 2020, https :// oxfordre .com /planetaryscience /view/10.1093/acrefore/9780190647926.001.0001/acrefore-9780190647926-e-70?rskey=mAKP6T&result=14.

affected the orbital Earth environment. Some tests with simulated space debris have been undertaken.[34] Unfortunately, no real space debris removal operation has taken place.

What will happen, if we don't have legally binding norms to counteract the pollution of outer space, if mitigation measures are not sufficient, and remediation measures are not existent?

The growing recognition of the IADC recommendations on re-orbiting in the Geostationary Protected Regionby international organizations, and their inclusion in national legislation by a growing number of States, are expressions that the international community is developing the conviction that the practice of re-orbiting is an obligation (in Latin: opinioiuris).

This opinioiuris, coupled with the development of a growing State practice of actually re-orbiting satellites into graveyard orbits, are elements that point into the direction of becoming an international customary norm. When such opinioiuris and State practice crystallize into a norm of customary law, it will become legally binding for all countries in the international community. This obligation will have an impact in the application of the Liability Convention. As a consequence, a country that does not re-orbit its satellites and causes damage to the space object of another country, will be considered at 'fault' and liable for compensating the injured State for the damage caused.

Since the last space treaty was adopted in 1979, no new treaties have come into force.Despite the reluctance of States to adopt norms to protect outer space, the development of the re-orbitingpractice into a norm of customary lawshows that international law adapts to the presently changing dynamics of the 21st century.

We have reached a moment in the history of mankind, where we are expanding the environmental crisis on Earth into outer space. Will we be on time to save the orbital Earth environment to continue benefiting from space activities? Will we be on time to preserve the province of all mankind?

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34 See "RemoveDEBRIS", in Surrey Space Center, https://www.surrey.ac.uk/surrey-space-centre/missions/removedebris.See also "Net successfully snares [simulated] space debris", University of Surrey, Sep. 19, 2018, https:// www.surrey. ac.uk/ news/net-successfully-snares-space-debris

EMERGING AVIATION SAFETY ISSUES- A CHALLENGE TO 21ST CENTURY

Dr.Sridevi Krishna*

"There is simply no substitute for experience in terms of aviation safety"

- Chesley Sullenberger[1]

ABSTRACT

The development of century has increasingly brought a daunting aviation safety challenges throughout the globe. The skies are more filled with the air transportation and the travelling public is growing ever since the new stakeholders entered the aviation market. They are more demanding of safety in skies. New operational procedures and technology have been introduced systematically and slowly. Air safety is the basis of public confidence in the air transport industry and maintaining the confidence of public is a necessary condition for the growth of aviation industry and also the world economy. Safety today is posing a threat to the industry and has put the sector on lot of pressure, especially since the outbreak of pandemic. The industry and the government of many countries are looking for new, safer ways to increase the movements of planes in the sky and this requires a level of safety enhancement in the aviation industry. This paper analyses the international obligation of safety standards in light of current challenges posed to commercial aviation safety and also discusses the emerging problems faced by the commercial aviation sector, which has threatened aviation safety today.

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1 www.brainyquotes.com

Key words: Air Space, Safety, Security, Commercial Aviation

INTRODUCTION

The signs of safety are all around us. The type of lines painted on roads and signs of speed limits are set according to conditions presented by different stretches of road. Even in buildings fire extinguishers, sprinklers and emergency exit signs are common. Sealed packaging standards are to be met in order to ensure food safety. Even motor vehicles too have brakes and air bags for the safety of driver. The electronic devices are protected through antivirus software and e-information can be protected through password so that their access is denied by other users. Similarly security at airports is installed in order to ensure safety of passengers from carrying any dangerous objects into plane. No matter what the context is, both safety and security requires constant vigilance. It is one of the important aspects in aviation sector today and certain minimum standards are laid down in this regard. For Example- flight attendants are trained to promote prompt evacuation of passengers during cabin fires, ramp agents wear reflective vests to reduce the chance of being run over by vehicles, pilot call outs help in ensuring that everyone in the flight is aware of emerging problem that may impact safety, fluids are prevented from being carried on board, cockpit doors are reinforced to prevent forced entry, and passengers are screened to prevent from carrying harmful weapons on board aircraft. Safety is the number one priority for aviation and it will continue to be so.[2] But it is important to know whether Aviation is really safe? The answer to this goes with the acronym USHRI (Ultra-Safe High- Risk Industry). Generally aviation is extremely safe and most reliable form of transport in terms of saving travel time and safety.[3] But still safety comes along with the risk and this risk is the combination of the severity of a dangerous condition or event and the probability of that event happening. It may be an accident or any act of threat to life of a person travelling in a plane. In terms of safety and security these risks expose an air traveler to a high-risk which requires a special concern to be studied.

INTERNATIONAL LAW ON SAFETY OBLIGATIONS

Safety and Security are paramount consideration in any invention meant to serve the public. But traditional International Law is bilaterally minded, it does not generally oblige states to adopt a certain conduct in the absolute except to which such obligations under a treaty or customary law is concerned. The development of contemporary aviation law has gone beyond traditional bilateralism and it's focused more on community interest. Generally the states under any convention or treaty do not have any interest of their own.[4] They merely have one common interest i.e. the

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2 CALIN ROVINESCU, CHAIRMAN, IATA,(2015); STEPHEN K.CUSICK,ET.AL, COMMERCIAL AVIATION SAFETY, (McGraw Hill, 6 th Edt,2018), At 2

3 Id. At

4 Advisory Opinion, ICJ Reports(1951),15,At 23

accomplishment of the purposes enshrined in the convention or treaty. The International Court of Justice referred to this type of obligation as 'ergaomnes' stating that –

> "An essential distinction should be drawn between the obligations of a states towards the international community as a whole and those arising vis-à-vis another state in the field of diplomatic protection. The former are the concerns of all the states. With respect to the rights involved, all states can be held to have a legal interest in their protection; they are the obligations ergaomnes."[5]

One of the main characteristics of obligations ergaomnes is their universality and non-reciprocity as they are obligations of a State towards the international community as a whole. The reference to 'International Community as a whole' can better be referred under the Vienna Convention on Law of Treaties which defined the 'peremptory norm' as a 'norm accepted and recognized by the International Community of States as whole.' Since then, the concept is concerned with common interest of all the states and indirectly, of mankind.

The Chicago Convention was adopted in 1944, when the bilateral or reciprocal mode of operation was prevailing in inter-State relationships and the concept of ergaomnes was not yet proclaimed. One of the most important objectives of ICAO is to ensure the safe and orderly growth of International Civil Aviation throughout the world. This rationale clearly denotes an over reaching system which embodies a common interest of all States and, indirectly, of mankind.[6] The safety standards laid on within the frame work of Chicago Convention are designed to protect the common interest of the International Civil Aviation Community and to enhance the global normative system for the safety of Civil Aviation. For example according to Art 33 of the Chicago Convention, certificate of worthiness and of competency and license must at least meet the minimum standards established under the convention. If a member State does not impose the minimum standard in this respect, the other member States may refuse to recognize its validity but could not take retaliatory action there by. The non-complying State, on the other hand, could not legally refuse to recognize the validity of certificates and licenses issued by other States, solely on the ground that they have refused to recognize the validity of the certificates and licenses issued by the former. The safety standards are not pronounced on the basis of quid pro quo, under which States could derogate from obligations inter se. A State is obliged to comply with the requirement irrespective of how other States may have behaved. They are not pursuing with their national or

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5 Belgium v Spain, ICJ Reports 3, (1970), At 32

6 C. TOMUSCHAT, OBLIGATIONS ARISING FOR STATE S WITHOUT OR AGAINST THEIR WILL, (Rd.C 241,1993), At 209-227

individual interest but it is a common interest. The obligations are therefore incurred towards the international community as a whole or at least towards all of the member States of ICAO. Thus it can be said that safety obligations under Chicago Convention are not designed for reciprocal purposes, but for higher aims. They are grounded 'in an adherence to a normative system', namely, a normative system for promoting the safe and orderly development of international civil aviation.

In the context of civil aviation, certain elements of safety obligations have been referred to as having the status of jus cogens. In the Lockerbie case,[7] it was stated that wide spread use of the formula 'aut dedere aut judicare', as stipulated in certain aviation security conventions attests to the existing jus cogens principle. The obligation to maintain certain standards of safety of life in the sea is in the nature of jus cogens. The same rationale may apply to the obligation to maintain certain standards of safety of life in the air. The States have a duty to comply with the international standards and recommended practices under the Chicago Convention which has become jus cogens.

In regard to aviation safety, it is difficult to find sufficient evidence to support their status as jus cogens. The notion of jus cogens, which has been influenced by domestic laws, provide for the nullity of agreements conflicting with public order or policy objectives.[8] Accordingly, the duty to comply with international standards and recommended practice under Art 37 of the Chicago Convention falls short of the status of jus cogens because Art 38 of the convention specifically allows States to opt for such compliance. Even Art 40 of the Chicago Convention contains provision for contracting out certain obligations, which reads as follows-

> 'No aircraft or personnel having certificates or licenses so endorsed shall participate in international navigation, except with the permission of State or States whose territory is entered'.

This denotes that the issue concerning airworthiness and personnel licensing could be bilateralised i.e. handled by the relevant States inter se without the involvement of international community. Thus, as long as flown State has no objection, aircraft and personnel who failed to satisfy ICAO minimum standards are not the concern of other States.

The safety requirements today are different from those of the time when Art 40 was drafted. Even at that time, the derogation clause was an exception. In the interest of international community restrictive interpretation should be given to this clause with a view to limiting it to isolated cases. Nevertheless, derogation from the standards of ICAO is still possible and thus it is difficult to support that duty to comply with ICAO

7 ICJ Reports (1992), At 163
8 Supra 3, At 182

standards has become jus cogens.

Applying the principle of lex ferenda, whether the concept of 'safety first' can be elevated to take the status of jus cogens is a question which requires a detail consideration. Art 4 of Tokyo Convention specifies that derogation from the general provisions of the Chicago Convention in order to preserve the safety of air navigation. Art 2 of Tokyo Convention also provides that-

> "without prejudice to the provisions of Art 4 and except when the safety of aircraft or of persons or property on board so requires, no provision of this convention shall be interpreted as authorizing or requiring any action in respect of offenses against penal laws of political nature are those based on racial or religious discrimination."

On the basis of this provision, the convention could be interpreted as authorizing action in respect of offenses against penal laws of political nature. This could be perceived as that safety consideration has been given overriding priority by the international community. Even Art 82 of Chicago convention provides that the contracting States accept this Convention as abrogating all obligations and understanding between them that are in consistent with its terms and undertake not to enter into any such obligations and understanding.[9] Unlike jus cogens, the Chicago Convention obliges contracting States to abrogate in consistent obligations. This is applicable to member States of ICAO and for non-member States; they are bound by jus cogens but not by Art 82. Thus, it can be said that Art 82 of Chicago Convention contains the seed of peremptory norms, which has received sanctions from the International Community.

ICAO STANDARDS ON AVIATION SAFETY

The ICAO seeks to develop regulations for International Air Transport. In so doing, it guides the development of aircraft technology and has set standards for international civil aviation safety and efficiency. The ICAO has harmonized technical requirements imposed on airplanes, developed air transport rules and resolved customs-related issues. A set of internationally agreed standards, rules and regulations have been developed by the ICAO, as manifest in the Chicago Convention 1944, to achieve the optimum level of safety.[10]

The Chicago Convention serves as the main repository of principles for the development of international civil aviation. The convention states in its preamble that the abuse of international civil aviation can become a threat to the general security and recognizes the desirability to develop international civil aviation in a safe and orderly manner.

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9 Art 103 of the Charter of United Nations contains similar provisions.

10 JIEFANG HUANG, AVIATION SAFETY THROUGH RULE OF LAW, ICAO'S MECHANISM AND PRACTICES, AVIATION LAW AND POLICY SERIES,(Kluwer Law International, 2009), At 5

The Chicago Convention also stipulates two other objectives for the ICAO:

(a) That the ICAO promotes flight safety in international civil aviation, and

(b) That the ICAO, through the development of its standards and recommended practices (SARPs), meets the needs of safe, regular, efficient and economical air transport.[11]

The ICAO's vision of safety oversight is a uniform, internationally standardized programme, aimed at ensuring the adequacy of each state's oversight of civil aviation. It is founded on the premise of an expanded Safety Oversight Programme, properly implemented harmonized and supported by safety audits of the states.

On October 1994, the ICAO Council established, Safety Oversight Programme to confirm and ensure that all civil aviation authorities provided the aviation safety oversight of their carriers as set out in the ICAO Annexes. Annex 17 provides details on safeguarding international civil aviation from unlawful interference. Art 83 bis is a milestone in ensuring safety of leased aircraft by solving regulatory and legal problems. It gave a basis and legal framework for bilateral agreements on transferring responsibility under Art 12, where responsibility is on the state to ensure aircraft flying over or maneuvering within its territory; Art 30 Aircraft Radio Equipment which must be licensed by the state of registry and Art 31 which makes it mandatory to obtain certificate of airworthiness by every aircraft engaged in international navigation. Art 83 bis cast these responsibilities on operators. It has therefore raised a global endorsement as there are no uncertainties about its acceptance by civil aviation world.

On 1st September 2010, a diplomatic conference in Beijing composed of representatives from 77 States, adopted two international Air Law instruments for the suppression of unlawful acts relating to civil aviation. The two instruments adopted by the Diplomatic Conference on Aviation Security held from 30th August to 10th September are the Convention on the Suppression of Unlawful Acts Relating to International Civil Aviation and the Protocol Supplementary to the Convention for the Suppression of Unlawful Seizure of Aircraft. Since the 1960s, a number of treaties on aviation security have been concluded under the auspices of ICAO. These legal instruments criminalize acts against international civil aviation, such as hijacking and sabotage, and facilitate the cooperation between States to make sure that such acts do not go unpunished.

The treaties adopted in Beijing, further criminalized the act of using civil aircraft as a weapon, and of using dangerous materials to attack aircraft or other targets on the ground.[12] The unlawful transport of biological, chemical and nuclear weapons and their related material becomes now punishable

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11 Id. At 6

12 Treaty Collection, (1st June, 2020, 6 pm) www.icao.int

under the treaties. Moreover, directors and organizers of attacks against aircraft and airports will have no safe haven. Making a threat against civil aviation may also trigger criminal liability. Some 400 participants from more than 80 States and international organizations attended the Conference.

The Beijing Convention and Beijing Protocol of 2010 will require parties to criminalize a number of new and emerging threats to the safety of civil aviation, including using aircraft as a weapon and organizing, directing and financing acts of terrorism. These new treaties reflect the international community's shared effort to prevent acts of terrorism against civil aviation and to prosecute and punish those who would commit them. The treaties promote cooperation between States while emphasizing the human rights and fair treatment of terrorist suspects.

The Beijing Convention of 2010 will succeed and improve provisions in the Convention for the Suppression of Unlawful Acts against the Safety of Civil Aviation (the Montreal Convention of 1971) and it's amending Airports Protocol of 1988 as between States Parties. The Beijing Protocol of 2010 amends the Convention for the Suppression of Unlawful Seizure of Aircraft (the Hague Convention of 1970) as between States Parties. The underlying treaties are widely ratified and have stood the test of time, but many of their provisions have become outdated, since they were adopted. The new Beijing Convention and Protocol taken together effectively establish a new broader and stronger civil aviation security framework.

EMERGING SAFETY ISSUES IN AVIATION

In aviation industry operational procedures and technology have been introduced systematically and slowly. Safety is a critical concern of the industry, so these challenges must be approached with caution. There has been increased traffic growth and for this to continue safely, the air traffic management system must also undergo changes. This includes changing the system so that it centers on the performance of flight itself. In United Sates Federal Aviation Administration is the body that governs how the safety policies and technologies are being implemented that will make air transportation more safe and efficient. They have taken Next Gen programme such as surveillance, required navigation performances and Automatic dependent Surveillance Broadcast (ADS-B) System.[13] In addition to these worldwide, airspace is under growing pressure by a new type of user. An Unmanned aircraft system also called as drones by the public is an aircraft without a human pilot onboard and it is controlled by an operator on the ground. The growth of these has exploded as users purchase them for commercial and recreational purposes. As they may become more common in the sky, they tend to threaten the safety of traditional aircraft operating in the airspace. On February 19th 2016, the French Government reported that,

13 Supra 4 at 464

a UAS came within 16 feet of impacting an Air France A-320 carrying 150 people which was arriving in Paris from Barcelona. The pilot had to disconnect the auto pilot and take evasive action to prevent collision. Many such collisions may happen within 5 miles of an airport and at altitude higher than 400 feet, which an UAS obviously can operate far into the airspace that is regularly used by commercial aircraft. These UAS may even pose a challenge of locating the operators, who could be just about anyone in a private residence operating a small UAS out of their backyard. Currently, aircraft engine manufacturers test their designs against bird strikes but have not taken UAS into consideration. Even UAS tend to damage glass of cockpit, fracturing helicopter blades and destroy jet engines. To prevent the mishaps and ensure safety, the FAA and industry group have taken initiative of introducing no drone zones without prior authorization.[14]

Today, aerospace companies are developing vehicles designed for suborbital spaceflight to perform science missions that study the atmosphere, astronomy and global climate change. These spacecraft are designed to depart from and arrive at commercial airfields in the same way that traditional aircraft use runways. The vehicles may feature rocket-powered climbs up to 350,000 feet that result in extremely high rates climb through all the levels of airspace. An increase in space operations combined with continued growth in air traffic operations could place a huge demand on the airspace system and air traffic control. The FAA has developed Space and Air Traffic Management System. It provides enhanced communications, navigation, and surveillance services. The goal is to generate methods and procedures to reduce the amount of airspace that is restricted for each launch and the amount of time that space will be needed. This would also accommodate regular traffic without disrupting the space mission and compromising safety. But, one obvious risk of operating traditional aircraft in the same airspace as the comparatively much faster space vehicles is collision.

There is also a threat posing a challenge to safety in oceanic traffic monitoring and it is the difficulty of communication and coordination between air traffic control centers. The disappearance of Malaysia Airlines Flight 370 in the Indian Ocean has pulled the international aviation community together to improve aircraft tracking. The wreckage and flight data recorder are essential items to have for the accident investigation. As a result, the safety community is taking measures to make sure that these items can be located whenever there is an accident. Ocean currents can move aircraft wreckage from its initial point of impact. ICAO has developed the Global Aeronautical Distress and Safety System to work on the above matters. This system addresses the concern of locating an aircraft's position both during and after the accident sequence. GADSS consists of components like aircraft tracking system by increasing an autonomous distress tracking

14 www.faa.gov/UAS

system. Unusual attitude, speed, acceleration or failure would trigger an alert. There would also be an automatic, deployable flight recorder. The flight recorder would separate automatically from the aircraft in the event of an accident. There would be an improved coordination and information sharing and enhanced training of emergency teams.[15]

Another threat faced by aviation industry in 21st century is Cyber threats. Incidents happening recently demonstrate that terrorists are interested in targeting the aviation sector. In 2011, radio hackers spoke on the frequency of British air traffic controllers, giving fictitious instructions to pilots and making fake distress calls. Another incident in the same year concerning internet security company Pure Hacking executed an infiltration on an airline network. In just one attack, the tester was able to completely compromise an airline network, which included capturing credit card numbers, plans, communications and databases. But, there are no strict regulations mandating the industry to report cyber security threats and incidents. The European Aviation Safety Agency has recently established a special committee to flight the continuously changing landscape of cyber threats against aviation. The threat seems daunting and immediate, although it should be noted that, to date, no cyber attacks has successfully hacked a commercial airliner's system while in flight. But this does not mean that hackers would not target an aircraft's networks, ground-based systems, navigation and cabin entertainment. The field of software safety and security will likely receive significantly more attention in the near future to protect commercial aviation safety.

Today, the outbreak of pandemic has created a new challenge to aviation industry. The impact of coronavirus and governmental travel reactions sweep throughout the world, many airlines have probably been driven into technical bankruptcy, or are substantially in breach of debt covenants. The shutdown and return to service have led to many changes to the operating environment. These will continue to evolve until we reach to normal. The organizations need to address management of changes effectively and regulators need to engage with their organizations to ensure safe and effective. If the complex aviation system restarts, new hazards will undoubtedly emerge. Currently, there are substantial number of exemptions, extensions and safety buffers. The European Union Aviation Safety Agency have identified six safety issues like Management Systems; Human Performance; Training, Checking And Recency; Outdated Information; Infrastructure and Equipment; Financial Impacts On Safety which are need to be addressed by respective member states.[16] Globally at this juncture there is a need for cooperation among the states. Failure to coordinate will result in protectionism and less competition in industry. An unstructured and

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15 Werfelman.L 'Aero Safety World', (June, 2015) , State of Mind, at 12-15
16 https://www.easa.europa.eu

nationalistic outcome will not be survival of the fittest. It will mostly consist of airlines that are the biggest and the best supported by their respective governments. The system will bring nationalism which would not better support and serve the needs of 21st century world.

CONCLUSION

The future of aviation safety is difficult to predict, but we are able to extrapolate from emerging trends to explore probable upcoming developments in commercial aviation safety. Aircrafts should be designed with enhanced safety and security systems and new safety management policy should be adopted to ensure safety in aviation. All such sophisticated developments will continue making commercial air travel the safe form of public transportation, which will be expected by an increasingly demanding public that is intolerant of accidents and serious incidents. Apart from grappling with health challenges of coronavirus, governments should coordinate to save the industry from being ruined.

Law Of The Sea

MARINE POLLUTION AND SOLID WASTE MANAGEMENT

Dr. Bheemabai S. Mulage*

ABSTRACT

The protection of the marine environment has become one of the most important ecological issues of modern times. Indeed, it forms part of that general emergence of environmental consciousness which has captured world attention in the past six to seven decades and which figures so prominently in the politics of international discourse today. Several studies on the sources of pollutants show the major contributory factor to marine pollution is from solid waste sources. The solid waste sources have become the major contributor of pollution and contamination in the marine environment. However many countries have officially banned the disposal of municipal solid waste into the ocean. In the past century, as the world's population has grown and become urban and affluent, waste production has risen tenfold. When the pollution levels rise to unsustainable levels, the impact will be felt not only by living marine ecosystems but also by the economic sectors dependent on them. Presently, solid waste is generating faster than other environmental pollutants, including greenhouse gases. The Marine litter becomes a trans-boundary challenge that is rooted in unsustainable production and consumption patterns, poor solid waste management and lack of infrastructure, lack of adequate legal and policy frameworks and its poor enforcement.

This paper will discuss the problems of marine pollution and waste management and highlights how marine litter poses environmental, economic, health, aesthetic and cultural threats and effective methods for solid waste management.

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Key words: Marine pollution, Waste management and Legal Regulations

INTRODUCTION

Oceans are the great reservoir of natural resources, raw materials, minerals and food, which covers 70.84% of the earth's surface. It is the treasure of wealth in the globe, which has vast array of biological resources along with minerals, energy and raw materials. Therefore, its contribution to humanity is enormous.[1]However, the recent years have seen an appreciable growth in the level of understanding of the dangers facing the international environment. An extensive range of environmental problems like marine pollution,[2] atmospheric pollution, global warming and threatened wildlife species are now the subject of serious international concern. The increasing population and their needs, urbanization, improper management of coasts, harbors and beaches, increasing coastal tourism, offshore activities, commercial exploitation, scientific and military use of oceans, atmospheric dumping, space debris, run-off, accidents, oil spills, discharge of coastal sewage, dumping of hazardous waste etc., are posing a serious threat to the marine environment. Hence, the maintenance of the world's ocean clean and alive is now becoming inevitable for the very survival of the earth and its species, because a small change in the ocean can make huge difference in the earth's ecology.

MEANING AND NATURE OF MARINE POLLUTION AND SOLID WASTE

Marine

There is no universal definition regarding the term 'Marine', but the 21st Century Chambers Dictionary says, "it is something related to sea and marine includes oceans, bay and its marginal seas, which contain salt water."

Apart from this, various pollution laws have also attempted to define the term 'marine' as "it is the area of salt water, which occurs on the surface of the earth."

The above definitions are not exhaustive, but by looking into the nature, composition, and its unique features of marine, we can say,"Marine is a complex solution of various salts, trace elements and gases like oxygen and carbon-dioxide. The marine basins are interconnected and circulate together with rotation of the earth and causes change in the earth's climate. It

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1 ALYN DUXBURY, THE EARTH AND ITS OCEANS 49(University of Washington, Addison Wesley Publishing Company 1971).

2 Convention on the Law of the Sea enumerates the definition of marine pollution as 'pollution of the marine environment' means the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate uses of the sea, impairment of quality for use of sea water and reduction of amenities ….

produces approximately 80% of the total oxygen. It is a great reservoir of various minerals, raw materials and energy."

Marine Pollution

Marine pollution usually refers to the contamination or presence of pollutants[3] in oceans and seas. In other way we can say that, Marine Pollution means 'anything that contaminates the sea'.[4]

The Intergovernmental Working Groups in November 1971 has defined the term 'Marine Pollution' as "the introduction by man, directly or indirectly of substances or energy in to the marine environment (including estuaries) resulting in such deleterious effects as are harmful to living resources, hazards to human health, hindrance to marine activities including fishing impairment of quality for use of sea water and reduction of amenities."

United NationsConvention on the Law of the Sea, 1982 enumerates the definition of 'Marine Pollution' as 'pollution of the marine environment' means "the introduction by man, directly or indirectly, of substances or energy into the marine environment, including estuaries, which results or is likely to result in such deleterious effects as harm to living resources and marine life, hazards to human health, hindrance to marine activities, including fishing and other legitimate use of the sea, impairment of quality for uses of sea water and reduction of amenities."

The industrial revolution and human activities both on land and on oceans have affected the marine environment significantly. The destructive process has been further accelerated by pollution of water bodies, which ultimately reaches the marine. Almost every form of waste directly or indirectly finds their way in to the sea eventually. Ocean possesses self-purification capacity and hence, humanity tends to regard ocean as a convenient place for planetary waste. Many nations continue to use the ocean as their ongoing depository for waste that are generated within their respective borders. For example, U.S. National Advisory committee on oceans and Atmosphere (NACOA) has estimated that the United States produces nearly three billion tons of solid waste annually. During 1979, U.S. alone has dumped 8,652,998 tons of wastes directly in to the ocean.The Water Pollution Statistics 2018-2019 estimates that nearly 14 billion pounds of plastics are directly dumpedinto the ocean each year.[5]It is apparent from the above stated

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3 The pollutants can be any chemical (toxic metal, radionuclide, oregano phosphorus, compound, gases or geo chemical substances (dust, sediment) biological organism or product, or physical substances (heat, radiations, sound wave) that is released intentionally or inadvertently by man to the environment with actual or potential adverse, harmful or unpleasant or in convenient effects. Such undesirable effects may be direct (i.e., affecting man) or indirect, being mediated via this resource organisms or climatic changes.

4 GURDIP SINGH, ENVIRONMENTAL LAW, INTERNATIONAL AND NATIONAL PERSPECTIVES 23 (Lawman (India) Pvt. Ltd. New Delhi 1995).

5 https://www.globewater.org/facts/water-pollution-statistics/ visited on 30.06.2020.

figure that the International solid waste problem is enormous and need immediate attention.[6] Now, the ocean disposals of different types of hazardous and deleterious substances have grown at an exorbitant pace.

Waste

The panel of the chemical manufacturers association, USA defined the term 'Waste' as "any gas, liquid or solid residual material at facility whether hazardous or nonhazardous and which is not used further in the production of a commercial products or provision of service which itself is not a commercial product."

Hazardous Waste

The Hazardous waste means "any substance, whether in solid, liquid or gaseous form, which has no foreseeable use and which by reason of any physical, chemical, radioactive or infectious characteristics causes danger or is likely to cause danger to health or environment. whether alone or when in contact with other wastes or environment, and should be considered as such when generated, handled, stored, transported, treated and disposed of. The definition also includes any product that releases hazardous substance at the end of its life, if indiscriminately disposed of.[7]

TYPES OF WASTE

The different types of wastes are refuge, trash, garbage, etc.

a. Refuge, has a broader meaning like waste and is used as its synonym.
b. Trash means the most combustible components of throwaway materials (paper, rag, wood chips, toys, etc.)
c. Garbage means the fall-outs and throwaway from market place, kitchen, stores, ware houses, etc., and may contain various putrescible wastes.

Land based Solid Waste and its Types

The increased population and repaid development of urbanization and industrialization have generated large quantities of waste in different forms. In most parts of the world, human activity has damaged the ecosystems, which sustain us. Many studies have proved that developed cities of the world, which produce most of the world's solid and liquid waste, consume most of the world fossil fuels, emit the majority of ozone destructive compounds and toxic gases, and give economic incentive to clearing of the

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6 NATL Advisory Committee, Oceans and Atmosphere, The role of the ocean in a waste management strategy 43 (1981).

7 G. R. Chhatwal (et al.), Environmental Water Pollution and Its Control 139 (Anmol Publications Pvt. Ltd. New Delhi 2003).

world's forests and agricultural lands and depletion of marine assets.[8]The quantity and quality of solid waste vary from one country to another country based on the various factors like, nations percapita income, living style, social behavior, types of industries, reutilization techniques of waste as raw materials, market for waste etc. Therefore, themanagement of municipal solid waste becomes the major problem all over the world. Most of the developing countries are now facing severe problems like increased urbanization, poor planning, lack of adequate resources etc., and have contributed to poor state of municipal solid waste management.

Types of land based solid waste

Land based solid waste includes sewage, sewage sludge, solid waste, garbage, rubbish, pesticides, sediments, nutrients, domestic waste, industrial waste, waste from ship breakage yards and all kinds of wastes of hazardous nature.

ThereforeLand Based wastes are classified as.

a. Domestic waste/Municipal Waste

b. Industrial waste

c. Agricultural waste

d. Sediments

The waste generated from the residential areas, commercial establishments, institutions, municipal services, waste treatment plants, construction and demolition activities are land based/municipal solid wastes. Segregation of this municipal solid waste is a difficult task, but once it has separated, then it is easy to manage. However, due to inadequate effective treatment of solid waste system,somecountries are releasing minimal treated sewage to various water bodies, like rivers, lakes and estuaries, ultimatelyit reaches the marine, and some countries without any treatment are dumping maximum part of sewage sludgedirectly to the oceans.

MANAGING SOLID WASTE

Among the various civic problems, the solid waste management has identified as important one. It becomes a major concern in all developed and developing countries. It is the today's need to develop and adopt efficient solid waste management system to overcome solid waste crisis. The solid waste management is a difficult process because it involves many disciplines and requires high technological and managerial skills. Thus to deal with this

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8 Leonie Crennan and Greg Berry, A Synopsis of Information Relating to Waste Management, Pollution Prevention and Improved Sanitation with a Focus on Communities in the Pacific Islands Region, Vol. 3, Technical Report on Issues for Community-based Sustainable Resource Management and Conservation: Considerations for the Strategic Action Programme for the International Waters of the Pacific Small Island Developing States,1,14(2002-03).

gigantic problem it requires, commitment, resources, and technical capacity. The overall objective of solid-waste management is to minimize the adverse environmental effects caused by the indiscriminate disposal of solid wastes, especially of hazardous wastes.[9] All these processes have to be carefully carried out within the existing legal and social guidelines that protect the public health and environment and are to be aesthetically and economically acceptable. The successful waste management also requires involvement of the community and private entrepreneurs to work with local government in a positive interdisciplinary relationship.[10]However, if waste is not properly treated and handled, this not only threatens human life but also the environment in long run. Therefore, it is necessary to implement suitable strategies for the management of solid wastes.

CONTROL OF LAND BASED SOLID MARINE POLLUTION

Effective control of Land Based Solid Marine Pollution can be achieved through Scientific, Economic, Social and legal Dimensions.

a. Scientific Aspects

Adequate scientific measures are required to be taken provided they are economically feasible and socially acceptable. Scientific data is an indispensable basis for the control of Land Based Marine Pollution. It involves a number of activities that aim to ensure that all relevant information is available and in this way, it helps to undertake an appropriate strategy for pollution control.[11]

b. Economic Aspects

It is found that, measures like imposition of tax for non-conformity; tax incentives to encourage firms to invest in the improvement of treatment technologies and processing; encouraging the firm also to move away from environmentally sensitive areas; setting environmental standards. Punishments or impositions of fine on violation of such standards like suspension of production or termination of business; conformity to polluter pays principles often help to meet the environmental standards.[12]

c. Social Aspects

Social and political factors usually plays an important role in the decision making process on the control of pollution. The varying interest of different social and political groups, the balance between environment and

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9 Vivek S. Agarwal and Neeraj Gupta, Models for Solid Waste Management in India, India Infrastructure Report, 187 (2008).

10 Lal's Commentaries on Water and Air Pollution, Vol. 2, 1371(Delhi Law House 2004).

11 MEN QUING-NAN, LAND BASED MARINE POLLUTION: INTERNATIONAL LAW AND DEVELOPMENT 28 (Graham and Trotman 1987).

12 DAUD HASSAN, PROTECTING THE MARINE ENVIRONMENT FROM LAND BASED SOURCES OF POLLUTION 38 (Ashgate publishing company, 2006)

development and distribution of public wealth, often lead to internal political conflict in dealing with land based marine pollution control measures.

d. Legal Aspects

Laws and regulations are of course necessary means of achieving minimum proposed standards on prevention, reduction and control of environmental degradation. In legally binding regional agreements, specific standards are prescribed to prevent pollution by specified contaminants. Since, land based marine pollution control is a matter of national concern, as it arises from the sovereign limits of a state, no specific prevention standards are prescribed at the global level.[13]

INTERNATIONAL CONVENTIONS

Times to time many International regimeshave been established to regulate the deliberate dumping of wastes. Some of the important conventions are as follows.

The London Convention of 1972 was adopted under the auspices of the Government of the United Kingdom in 1972, later it was modified by the 1996 Protocol. Now the International Maritime Organization (IMO) executes all the functions of the Convention.

Almost all International Conventions governing ship-source marine pollution are IMO Conventions and these conventions are global in scope.The International Conventions related to ship-source marine pollution are classified as IMO Conventions and Non- IMO Conventions.

a. IMO Conventions are

International Convention Relating to Intervention on the High Seas in Cases of Oil Pollution Casualties, 1969; Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter, 1972; International Convention for the Prevention of Pollution from Ships, 1973; International Convention on Salvage, 1989; International Convention on Liability and Compensation for Damage in Connection with the Carriage of Hazardous and Noxious Substances by Sea, 1996; International Convention on Oil Pollution Preparedness, Response and Cooperation, 1990;International Convention on Civil Liability for Oil Pollution Damage, 1992; International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1992; International Convention on the Control of Harmful Anti-fouling Systems on Ships, 2001; International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001; International Convention for the Control and Management of Ships' Ballast Water and Sediments, 2004; The Hong Kong International Convention for the Safe and Environmentally Sound Recycling of Ships, 2009

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13 Ibid.

b. Non-IMO Conventions are

United Nations Convention on the Law of the Sea, 1982; Basel Convention on the Control of Trans-boundary Movements of Hazardous Wastes and Their Disposal, 1989.

The Principle of Good Neighbourliness

Article 74 of the UN charter, makes an express reference to the principle of good neighbourliness. The principle of good neighbourlinesshas been defined as, 'No state may conduct, promote or sustain in its territory activities which cause other than inconsiderable and usual damage in the territory of a neighbouring state.'

According to this principle, oceans may be used by nations but the use has to be reasonable. Nations may not abuse their right, or unreasonably interfere with the freedom of other nations on the high seas. This principle implies a positive obligation on nations in terms of the utilization of the high seas for the sake of the interest of others.

Article 24 of the Convention on the High Seas provides that "every state shall draw up regulations to prevent pollution of the sea by the discharge of oil from ships or pipelines or resulting from the exploitation and exploration of the sea bed and its subsoil, taking account of existing treaty provisions on the subject."

Article 3(c)(iii) of the Paris Convention for the Preservation of Marine Pollution from Land based Sources,1974, defines offshore installation as land based solid marine pollution. Article 25(2) of the Convention on the High Seas impose obligations on states to regulate land based solid marine pollution.

London Convention, 1972 and 1996 Protocol

The preamble to the Convention noted that: "Marine Pollution originates in many sources, such as dumping and discharges through the atmosphere, rivers, estuaries, outfalls and pipelines, and it is important that states use the best practicable means to prevent such pollution and develop products and processes which will reduce the amount of harmful wastes to be disposed of."

In terms of control measures, Article 7 of this Convention focuses on Vessels, aircraft and platforms. In relation to dumping from outfalls and pipelines, nothing has been specifically mentioned which makes this Convention an appropriate instrument for land based solid marine pollution control.

The 1996 Protocol made new provisions, introducing the 'Precautionary Principle' and 'Polluter Pays Principle'. This protocol broadens the definition of dumping to include any storage of wastes, or other matter, in the seabed and the subsoils, from vessels, aircraft, platforms or other man-made structures at sea, by the abandonment or toppling at site of platforms or other

man-made structure at sea, for the sole purpose of deliberate disposal. [14]

United Nations Convention on the Law of the Sea

The United Nations Convention on the Law of the Sea is a comprehensive framework for the protection and preservation of the marine environment. Part XII of the Convention is devoted to the protection and preservation of marine pollution. Article 192-206 cover general rights and obligations of states; international and regional cooperation in formulating rules, standards and recommended practices; research and exchange of information; and technical and scientific assistance for the protection and preservation of the marine environment. Article 207-222 relates to the specific provisions for particular types of marine pollution.[15]

c. Soft Laws

A number of soft laws are also address the issue of land based marine pollution. Important among them are, Stockholm Declaration, Montreal Guidelines, Agenda 21 of UNCED, and the Global Program of Action for the protection of the Marine Environment from Land-based Sources (Washington Conference 1995).

CONCLUSION

Oceans are the great reservoir of natural resources, raw materials, minerals and food. The very survival of the planet earth depends on the maintenance of oceans clean and alive. However, offshore mining, Seabed exploitation etc., are posing a grave threat to the marine environment. Marine pollution has its direct impact on both ecology and economy of the earth.[16]The capacity of the ocean to absorb and recycle the waste of human society is endless. In fact, world oceans are treated as ultimate dumpsite. Many of the people are not even ready to accept the repercussions of such untreated and uncontrolled discharge of wastes.Therefore, the maintenance of the world's ocean clean and alive is now becoming inevitable for the very survival of the earth and its species, because a small change in the ocean can make huge difference in the earth's ecology. Thus, the protection and preservation of environment needs joint and individual effort globally.

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14 Ibid.
15 Ibid.
16 P.C. SINHA, COASTAL AND MARINE DISASTERS 114 (1stedition Anmol Publications Pvt. Ltd. 1998).

ESTABLISHMENT OF REGIONAL FISHERIES MANAGEMENT ORGANIZATION UNDER THE FISH STOCKS AGREEMENT, 1995 FOR THE EASTERN INDIAN OCEAN AND THE ARABIAN SEA: AN ANALYSIS

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ABSTRACT

Fish stocks are important sources of food and livelihood for theinhabitants of coastal areas surrounding Eastern Indian Ocean and the Arabian Sea ("region"), as the region represents much of the fisheries-dependent population in the world. Since many fish species traverse more than one country, the task of preservation of fish stocks often gets complicated.Fish stocks in this region have been further rendered vulnerable due tocauses such as industrial pollution, run-off from agricultural sources, illegal, unreported and unregulated (IUU) fishing, climate change, etc. Furthermore, the disputes related to fishermen between the countries in this regionalso affect the availability of fish stocks in their respective waters. Thus, there is a need to involve the coastal States surrounding the Eastern Indian Ocean and the Arabian Sea towards conservation of fish stocks. The paper proposes the establishment of a Regional Fisheries Management Organization ("Organization"/ "RFMO") for the Eastern Indian Ocean and the Arabian Sea, in accordance with the provisions of the United Nations Fish Stocks Agreement, 1995. The paper seeks toexamine the causes for the lack of existence of a regional fisheries management organization (RFMO) for the Eastern Indian Ocean and the Arabian Sea under the Fish Stocks Agreement

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and tostudy the inadequaciesof the existing RFMOs, if any, for the region.Furthermore, the paper attempts to elucidatethe legal frameworkfor such an organization, in light of the cultural, economic and geographical similarities among these countries. The paper also presents legal-cum-scientific suggestions for the preservation of fish stocks.Lastly, the paper highlights the potential impact of the establishment of such an RFMO on the marine environment,and on efforts towards fulfilment of Goal 14 of the Sustainable Development Goals (SDGs).

Keywords: Regional Fisheries Management Organization, Fish Stocks, Fishermen,Indian Ocean, Arabian Sea

INTRODUCTION

The fisheries sector plays a huge role in the development and growth in many countries. The sector provides livelihood opportunities for both women and men, and takes care of a portion of food security and nutritional needs, and trade needs. Asia has accounted for about 89 percent of world's production of fish for human consumption in the past two decades.[1]In the Indian subcontinent, India[2], Bangladesh[3], and Myanmar[4] belong to the group of countries accountable for half of the world's total inland water captures.According to The State of World Fisheries and Aquaculture Report 2020[hereinafter as "SOFIA 2020"]of the Food and Agriculture Organization (FAO), the percentage of people engaged in fish farming in Asia is 85 percent[5], with 14 percent of the workers being women[6].

Fish consumption has wide-ranging benefits, primarily in the form of food, also known as "food fish"[7]. Non-consumptive uses of fish (including fish, crustaceans, molluscs, and other aquatic animals[8]) involve utilization of fish enzymes that are used in food processing[9], biological research[10],

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1 The State of World Fisheries and Aquaculture, 2020, FAO, 7 (Jun. 25, 2020, 4:30 PM) http://www.fao.org/3/ca9229en/CA9229EN.pdf.[hereinafter as "SOFIA 2020"]
2 supra note 1, at 6.
3 Id.
4 supra note 1, at 18.
5 supra note 1, at 7.
6 Id.
7 supra note 1, at 3.
8 supra note 1, at 2.
9 See N.F. HAARD, B.K. SIMPSON, PROTEASES FROM AQUATIC ORGANISMS AND THEIR USES IN THE SEAFOOD INDUSTRY. IN: FISHERIES PROCESSING (A.M. Martin, ed. Springer 1994)(Jun. 24, 2020, 1:30 AM) https://link .springer com /chapter/10.1007/978-1-4615-5303-8_6.
10 Malcolm B. Hale, Using enzymes to make fish protein concentrates, 36 MAR. FISH. REV.15 (1974) (JUNE. 24, 2020, 1:30 PM) https: // spo .nmfs .noaa .gov /sites / default/files/pdf-content / MFR / mfr362 / mfr3623.pdf.

manufacture of cleaners[11], building construction[12] and cosmetics manufacturing[13].

The numerous uses of fish species and the prevalent threats to these species justify the need for adopting proper conservation measures. Such a need can be felt in the Indian subcontinent in the years to come, considering the increasing population and rising levels of food insecurity and pollution. To fulfill this need, thepaperproposes the creation of an RFMO in accordance with the provisions of The United Nations Agreement for the Implementation of the Provisions of the United Nations Convention on the Law of the Sea of 10 December 1982 relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks [hereinafter as the "UN Fish Stocks Agreement" or "Fish Stocks Agreement"], different from the ones existing in the region. Part II gives an account of various threats to marine biodiversity and assesses their negative impact on the environment and consequently on fish stocks. Part III explains at length the concept of fish stock, measurement of sustainabilityof fish stocks through legal and scientific concepts, and explains how the fish stocks are managed. Part IV examines the need for creation of anRFMO for the region and gives a detailed account of the gaps in the functioning of the existing RFMOs. Part V elaborates upon the legal framework of the organization. Part VI concludes the paper.

THREATS TO MARINE BIODIVERSITY

Despite wide-ranging benefits accruing from the fisheries sector, there has been a decline in the judicious use of fisheries over the decades. The rise in sea temperature and ocean acidification[14] over the years has affected the composition of fish species in the seas and oceans of the world, because their spawning and breeding are dependent on an optimum range of temperature[15]. Incidents such as coral bleaching[16] also affect fish, because it

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11 supra note 1, at 50.

12 S. Abhinaya& S. Prasanna Venkatesh, An Effect on Oyster Shell Powder's Mechanical Properties in Self Compacting Concrete, 5 INTL. J. OF INN. RES. IN SCI., ENG. AND TECH.11785, 11786 (2016), (Jun. 22, 2020, 1:30 PM) https://www.ijirset.com/upload/2016/june/296_Oyster%20shell%20powder.pdf.

13 Eric P.H. Li, Hyun Jeong Min et al., Skin Lightening and Beauty in Four Asian Cultures, 35 NA –ADV. IN CONS. RES. 444, 449 (2008), (Jun. 24, 2020, 2:30 PM) http: // www.acrwebsite.org/volumes/v35/naacr_vol35_273.pdf.

14 When absorption of carbon dioxide by seawater becomes excessive, chemical reactions occur that reduce seawater pH and carbonate ion concentration. These chemical reactions are called 'ocean acidification'. (Jun. 25, 2020, 4:30 PM) https://www.pmel.noaa.gov/co2/story/What+is+Ocean+Acidification%3F.

15 JánosBakos , Technology for Fish Propagation, FAO (Jun. 26, 2020, 5: 30 PM) http://www.fao.org/3/x5744e/x5744e0c.htm.

16 When corals are stressed by changes in conditions such as temperature, light, or nutrients, they expel the symbiotic algae living in their tissues, causing them to turn completely white. This is known as Coral bleaching. (Jun. 25, 2020, 3:30 PM) http://oceanservice.noaa.gov/facts/coral_bleach.html.

affects the entire ecosystem.[17] Since an entire ecosystem is almost always at risk, nothing short of an ecosystem approach to fisheries management (EAFM)[18] justifies any effort towards conservation of the marine environment.

Fish stocks get endangered or threatened because of various anthropogenic causes.One such threat is evident in the form of fertiliser subsidies, which often result in indiscriminate application of fertilisers in the fields and the consequent runoff from fields, causing eutrophication in water bodies and resulting in 'dead zones', such as the one in Bay of Bengal[19]. Another looming threat is Illegal, Unreported and Unregulated (IUU) Fishing[20]. As the nomenclature suggests, it includes fishing in violation of national and/or international laws and regulations, fishing without a license or quota for species, failure to report catches, making false reports, using inappropriate fishing gear, etc.[21]It can also lead to overfishing, which reduces food production, and hampers proper functioning of ecosystems.[22]Apart from IUU fishing, oil spills also pose as a major threat to the marine biodiversity. Oil, by virtue of its property, floats on water, thus reducing the amount of dissolved oxygen (DO) that would otherwise be available to the marine plants and animals. In addition, toxic components in oil can be fatal for these organisms.[23] Poaching is another significant threat to marine

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17 Oliver Milman, Marine Food Chains at risk of collapse, extensive study of world's oceans finds, THE GUARDIAN, Oct 13, 2015 (Jul. 1, 2020, 4: 30PM) https:// www.theguardian.com/environment/2015/oct/13/marine-food-chains-at-risk-of-collapse-extensive-study-of-worlds-oceans-reveals.

18 "Ecosystem-based fisheries management is a holistic approach that recognizes all the interactions within an ecosystem rather than considering a single species or issue in isolation." See https://www.fisheries.noaa.gov/insight/understanding-ecosystem-based-fisheries-management (Jun. 30, 2020, 4: 30 PM). The ecosystem approach to fisheries: Issues, terminology, principles, institutional foundations, implementation and outlook, 443 FAO Fisheries Technical Paper 5-6 (2003) (Jun. 30, 2020, 4: 15 PM) http://www.fao.org/3/a-y4773e.pdf.

19 K.S. Jayaraman, 'Dead zone' found in Bay of Bengal, NATURE INDIA (2016) (Jul.1, 2020, 5:30 PM) https: // www . natureasia . com / en /nindia /article /10.1038/nindia.2016.163.

20 See generallyReport of the Expert Workshop to Estimate the Magnitude of Illegal, Unreported and Unregulated Fishing Globally,FAO Fisheries and Aquaculture Report No. 1106 (2015)(Jun. 24, 2020, 9: 30AM) available at http://www.fao.org/3/a-i5028e.pdf.

21 Some of them have been classified as "serious violation" under the UN Fish Stocks Agreement. IUU Fishing- Frequently Asked Questions, NOAA (Jun. 25, 2020, 3:15PM)https://www.iuufishing.noaa.gov/FAQs/IUUFishingFAQs.aspx.

22 Overfishing, illegal and destructive fishing, MARINE STEWARDSHIP COUNCIL (Jun. 27, 2020, 1:30PM) https://www.msc.org/what-we-are-doing/oceans-at-risk / ov e rf ishing-illegal-and-destructive-fishing.

23 Effects of Marine Oil Spills, MARTRANS (Jun. 24, 2020, 2:50PM) http://www.martrans.org/eu-mop/library/ITOPF%20-% 20Effects %20of %20 Marine%20Oil%20Spills.htm.

biodiversity. It has often resulted in arrests of fishermen and consequent conflicts between two coastal States. Examples include conflicts relating to India-Pakistan[24], India-Bangladesh[25], India-Sri Lanka[26] and India-Myanmar[27] maritime boundaries.

FISH STOCKS AND THEIR MANAGEMENT

The condition of the world's marine fish stocks is yet to reach sustainable levels in many areas, regardless of visible steadiness in some areas. The proportion of marine fish stocks within sustainable levels has declined from 90 percent (1974) to 65.8 percent (2017).[28]Moreover, in the Bay of Bengal and Andaman Sea regions, monitoring of the production of capture fisheries becomes difficult due to the presence of small-scale fisheries, centred around multiple species.[29]Thus, management of fish stocks is of prime concern.

For fisheries policy and management purposes, the concept of maximum sustainable yield (MSY) finds a place in the United Nations Convention on the Law of the Sea (UNCLOS)[30], the UN Fish Stocks Agreement[31] and the FAO Code of Conduct for Responsible Fisheries[32]. The objectives entail maintaining fishing mortality at or below levels associated with MSY and ensuring that the prevailing stock is situated at least at the MSY level. The concept is useful for controlling overfishing and stock depletion. However, the main drawback of the concept is that it does not represent a precautionary approach to managing many species of fish.[33]Another major issue arises in terms of establishing a measure for sustainability and determining the sustainability of a particular fishery. The commonly used

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24 Pakistan arrests 16 Indian fishermen for allegedly violating maritime boundary, NDTV, Oct. 24, 2018 (Jun. 30, 2020, 4:30PM) https://www.ndtv.com/india-news/pakistan-arrests-16-indian-fishermen-for-allegedly-violating-maritime-boundary-1936668.

25 Bangladesh troops kill Indian guard in fishing row at border, ALJAZEERA, Oct. 18, 2019 (Jun. 30, 2020, 4:40PM) https: // www .aljazeera .com/ news /2019 /10 / bangladesh-troops-kill-indian-guard-fishing-row-border-191018063921011.html.

26 18 Indian fishermen arrested for allegedly poaching in Sri Lankan waters, HINDUSTAN TIMES, Apr. 5, 2019 (Jun. 30, 2020, 2:30PM) https: // www .hindustantimes. com / world-news/18-indian-fishermen-arrested-for-allegedly-poaching-in-sri-lankan-waters/story-3y9Ne9P5o9iNfmAzCyRHcO.html.

27 SeeKiruba-Sankar, R. Lohith Kumaret al., Poaching in Andaman and Nicobar coasts: Insights, 23 J. COAST. CONSERV.95–109 (2019) (Jun. 28, 2020, 4:50PM) https://doi.org/10.1007/s11852-018-0640-y, 129 detained Myanmar fishermen return from India, NDTV, Jun. 1, 2016 (Jun. 28, 2020, 4:30PM) https :/ / www ndtv. com/world-news/129-detained-myanmar-fishermen-return-from-india-1414364.

28 supra note 1, at 7.

29 supra note 1, at 53.

30 Arts. 61(3), 119(1)(a), UNCLOS, 1982.

31 Art. 5, Fish Stocks Agreement, 1995.

32 Art. 7.2.1, FAO Code of Conduct for Responsible Fisheries (Jun. 24, 2020, 4:15PM) http://www.fao.org/3/v9878e/V9878E.pdf.

33 Precautionary Approach, FISHSEC (Jun. 24, 2020, 5:15PM) https://www. fishsec .org /management-strategies/precautionary-approach/.

methods for assessing sustainability employs the direct relationship between abundance and sustainability[34], as well as the inverse relationship between the intensity of fishing pressure and sustainability of the fish stock[35]. However, due to anthropogenic (say, petroleum exploration and drilling, leakage of chemicals from industries etc) or natural (El Nino and La Nina systems, mixing of freshwater and brackish water, etc) causes, fish stocks tend to naturally fluctuate.Thus, even the best management system cannot guarantee that the stock levels will not drop to unsustainable levels.

Regarding the fish stocks in different parts of the world's oceans, both Western Indian Ocean and the Eastern Indian Ocean have among the highest proportion of fish stocks within biologically sustainable levels (close to 70 percent).[36] This depicts a foreseeable positive future for the population residing in or around these oceans, parts of which are a prime focus of this paper.

NEED FOR ANRFMO FOR THE EASTERN INDIAN OCEAN AND THE ARABIAN SEA

The discussion in the previous section reinforces the need for "sustainable management" of the fish stocks, elaborated upon by the International Tribunal for the Law of the Sea (ITLOS), in terms of using the fishery resources "within the framework of a sustainable fisheries management regime".[37]Regional fishery bodies (RFBs) play a crucial role in the management of shared fisheries. There are around 50 RFBs around the world, most playing only an advisory role[38]. In order to check the causes of depletion of fish stocks in the region (Eastern Indian Ocean and the Arabian Sea), many RFMOs have been established at different points of time.

Under the FAO system of categorization, the region comprising of parts of the Western as well as Eastern Indian Ocean would fall within the areas 51 and 57espectively. Some RFMOs that cater to these regions are (in chronological order of their establishment years) the Asia Pacific Fisheries Commission (APFIC) (est. 1948), Western Indian Ocean Tuna Organization (WIOTO) (est. 1992), Indian Ocean Tuna Commission (IOTC) (est. 1996), and the South West Indian Ocean Fisheries Commission (SWIOFC) (est.

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34 The State of World Fisheries and Aquaculture, 2016, FAO, 40 (2016) (Jun. 28, 2020, 1:30PM) http://www.fao.org/3/a-i5555e.pdf.

35 Id.

36 supra note 1, at 53-54.

37 Request for Advisory Opinion submitted by the Sub-Regional Fisheries Commission, Advisory Opinion, 2 April 2015, ITLOS Rep. 2015, 4, 56(Jun. 30, 2020, 12:30PM) https://www.itlos.org/fileadmin/itlos/documents/cases/case_no.21/advisory_opinion_published/2015_21-advop-E.pdf.

38 T. TerjeLøbach, M. Petersson, et al., Regional fisheries management organizations and advisory bodies. Activities and developments, 2000–2017, 651 FAO Fisheries and Aquaculture Technical Paper (2020) (Jun. 24, 2020, 7:30PM) http: // www .fao.org/3/ca7843en/CA7843EN.pdf.

2004). One common feature among them is that they are all established under the Constitution of the FAO, except the WIOTO, which had been established under the WIOT Convention. All of them recognize and regard the UNCLOS.

Despite the presence of legal frameworks for all these RFMOs, some of their inadequacies cannot be overlooked. The APFIC Agreement, though includes the mandate to "increase the efficiency and sustainable productivity of fisheries and aquaculture"[39], it does not include any of the specific principles mentioned in either the UNCLOS or the Fish Stocks Agreement. In the case of IOTC, the Agreement for the Establishment of the IOTC [hereinafter as "IOTC Agreement"], there is a general reference to the provisions of theUNCLOS in Article V, but they do not explicitly mention the guiding principles for the functions of the Commission.[40]The decisions of the IOTC cannot be implemented unless they are approved by the Director-General of the FAO.[41]The IOTC Vessel Monitoring System (VMS) does not include within itself a mandate to regularly share data.[42]The IOTC Agreement is also silent about measures to tackle excess capacity and over-fishing.[43] Perhaps the most important observation regarding IOTC is the fact that the Agreement for the Establishment of the IOTC does not recognise theprinciples outlined in the UN Fish Stocks Agreement, such as the Precautionary Approach (PA)[44] andEAFM.[45]Regarding the WIOTO, though it had many founding members including India, Sri Lanka and Maldives from the Indian subcontinent, it is no longer operative because of financial constraints.[46]Similarly, though the establishment of the SWIOFC has been a laudable initiative, its functioning also suffers from some shortcomings. The principles mentioned in the Statutes and Rules of Procedure of the SWIOFC, though consistent with the UNCLOS nevertheless have a drawback in that

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39 APFIC Agreement, Art. IV(b)(i) (Jul. 2, 2020, 6:30PM) http: // www. fao. org / apfic/ background/apfic-agreement/en/.

40 Report of the 2nd IOTC Performance Review, Indian Ocean Tuna Commission, 16 (2015) (Jul. 1, 2020, 5:30PM) available at https://www.iotc.org/documents/report-2nd-iotc-performance-review.

41 Id. at 18.

42 Jessica Rattle, A case study on the management of yellowfin tuna by the Indian Ocean Tuna Commission, BLUE MARINE FOUNDATION, Jun. 2019 (Jul. 2, 2020, 1:30PM) https://www.bluemarinefoundation.com/2019/06/09/a-case-study-on-the-management-of-yellowfin-tuna-by-the-indian-ocean-tuna-commission/.

43 supra note 40, at 17.

44 "Management according to the precautionary approach exercises prudent foresight to avoid unacceptable or undesirable situations, taking into account that changes in fisheries systems are only slowly reversible, difficult to control, not well understood, and subject to change in the environment and human values." (Jul. 1, 2020, 4:50PM) http://www.fao.org/3/w3592e/w3592e07.htm.

45 supra note 40, at 15.

46 (Jul. 3, 2020, 4:15PM) https:// confer ences .unite. un. org / unterm / Display / record /UNHQ/NA?OriginalId=31557ba296f4306c852569fa0000e414.

the Commission, being of advisory nature, cannot impose any obligation on its members.[47] The SWIOFC has made considerable effort through the EAF-Nansen Project[48] in promotion of the EAFM, but where it has not made considerable advance is in the promotion of the PA.[49] Furthermore, a need has been felt for the improvement of transparency with regard to access to documents from meetings, reports, etc.[50] The difference in management of overlapping species of the IOTC and SWIOFC due to advisory nature of the latter in comparison with binding decisions of the former could be an additional cause for concern.[51]

It is indeed a point of concern that the important countries around the Eastern Indian Ocean and the Arabian Sea are not members of one particular organization/RFMO. India, Bangladesh, Maldives, Myanmar, Pakistan, Sri Lanka etc. are members of atleast one of the abovementioned organizations, but there is no RFMO which includes all of them together. The abovementioned RFMOs considerably lack explicit specific provisions on environmental conservation and sustenance of livelihoods.From these reasons emanates the need for an RFMO which scores over these lacunae.

THE RFMO FOR THE EASTERN INDIAN OCEAN AND THE ARABIAN SEA: LEGAL FRAMEWORK IN ACCORDANCE WITH THE FISH STOCKS AGREEMENT, 1995

In the light of the evident inadequacies of the existing RFMOs in the region, it is clear that there is need for an organization which would adopt a holistic approach towards conservation of fish stocks and would consequently improve the status of the marine environment. The area of competence of the organization envisaged in this paper would remain similar to those of the abovementioned RFMOs in terms of the FAO Statistical areas 51 and 57[52], but would get narrowed down to a few countriesthat are not only neighbours but share highly migratory and straddling fish species among them. The organization shall be established in accordance with provisions

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47 Report of the Performance Review of the South West Indian Ocean Fisheries Commission, v (Jun. 25, 2020, 5:18PM) http:/ /www. fao.org /fishery /docs/ DOCUMENT/SWIOFC/PerformanceReview_Report.pdf.

48 The EAF-Nansen Project "Strengthening the Knowledge Base for and Implementing an Ecosystem Approach to Marine Fisheries in Developing Countries" (GCP/INT/003/NOR) is an initiative to support the implementation of the ecosystem approach in the management of marine fisheries. (Jun. 26, 2020, 5:20PM) http://www.fao.org/3/a-bd544e.pdf.

49 supranote 47, at 16.

50 Id. at 29.

51 Claire van der Geest, Redesigning Indian Ocean Fisheries Governance for 21st Century Sustainability, 8 Global Policy (2017) (Jul. 2, 2020, 5:40PM) http: // onlinelibrary. wiley.com/doi/10.1111/1758-5899.12447/epdf.

52 SeePart III. Indian Ocean and Indo-Pacific Area (Jul. 3, 2020, 5:40PM) http : / / www . fao.org/3/w1310e/w1310E03.htm.

under Part III[53] of the Fish Stocks Agreement and shall have the following features:

- Ideally, such an organization would include the best practices of all the regional fishery bodies, and exclude those merely recommendatory in nature. Thus, it would be based on the principles of PA[54] and EAFM[55]. The EAFM shall ensure the departure from an extensive reliance on traditional fisheries management[56], which focusses exclusively on conservation of single species, not taking into consideration the ill-effects it may have on the food chain and the ecosystem in general.

- Though the geographicalextent of the organization would confine the membership primarily to coastalcountries belonging to the Indian subcontinent (India, Bangladesh,Pakistan, Maldives, Myanmar, Sri Lanka) collaborative efforts with other coastal States near the region cannot be disregarded as many species are migratory or straddling between countries. This would imply that other countries surrounding the Eastern Indian Ocean and the Arabian Sea (ASEAN members and Gulf countries) could also be included in the framework in the form of either Associate Member(s) or be given Observer status. Membership shall be voluntary in nature.

- Since the member countries will have shared objectives, it will be imperative for them to take decisions through consensus-building. Article 7(1) and 7(2) of the Fish Stocks Agreement makes sure that apart from taking decisions mandating cooperation, the member countries shall be duty bound to ensure compatibility between measures taken for conservation at the national level vis-a-vis those taken for Areas Beyond National Jurisdiction (ABNJ).[57]Articles 10 (a)[58], (j)[59] and (k)[60] take the compatibility provision to

53 Mechanisms for International Cooperation concerning Straddling Fish Stocks and Highly Migratory Fish Stocks

54 Art. 6, Fish Stocks Agreement, 1995.

55 Resumed Review Conference on the Agreement Relating to the Conservation and Management of Straddling Fish Stocks and Highly Migratory Fish Stocks (Jul. 3, 2020, 1:30PM) https: // www. un.org /depts /los / convention_ agreements /reviewconf / FishStocks_EN_B.pdf.

56 Fishery bodies such as IOTC promote single species conservation, or traditional fisheries management.

57 Article 7, Fish Stocks Agreement, 1995-Compatibility of conservation and management measures.

58 Article 10, Fish Stocks Agreement, 1995 Functions of subregional and regional fisheries management organizations and arrangements In fulfilling their obligation to cooperate through subregional or regional fisheries management organizations or arrangements, States shall:
(a) agree on and comply with conservation and management measures to ensure the long-term sustainability of straddling fish stocks and highly migratory fish stocks

59 Article 10
… (j) agree on decision-making procedures which facilitate the adoption of conservation and management measures in a timely and effective manner;

60 Article 10
… (k) promote the peaceful settlement of disputes in accordance with Part VIII;

another level, by making it imperative for members of a regional or a subregional organization to agree on conservation measures, and also cater to the potential need for dispute settlement.

- The organization shall also strive to assimilate the best practices towards monitoring, control and surveillance (MCS) of fisheries around the world in order to conserve the fish stocks, and shall adopt principles such as those mentioned in the FAO's Code of Conduct for Responsible Fisheries[61] and FAO's International Plan of Action to Prevent, Deter and Eliminate IUU Fishing (IPOA-IUU)[62]. Since most countries in the region are developing economies, adopting such practices might lead to a significant reduction in subsidies for fisheries, development of fisheries sector, and clarity as to the status of labour relations within the sector. This shall also be in conformity with the recommendations of the Informal Preparatory Working Group 4 at the national level[63] and to the RFMOs at the international level[64].

- Members would be expected to give priority to 'cooperation over conflict', despite any ongoing conflicts with respect to any other bilateral, trilateral or multilateral issues at any other platform. This may have a positive effectin discussions in regional organizations such as South Asian Association for Regional Cooperation (SAARC)where cooperation, reciprocity and harmony would be required.

- With regard to the species, after conducting proper regional assessment, list of common species could be attached to the Agreement or the Charter of the organization and could be updated as and when possible. With regard to non-coastal States as possible members, assessment of species as part of small-scale fisheries in their inland waters could be taken up, in order to improve the contribution of fisheries to their economies.

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61 Code of Conduct for Responsible Fisheries, FAO (Jul. 1, 2020, 5:14PM) http:// www. fao.org/docrep/005/v9878e/v9878e00.htm.

62 The IPOA-IUU describes inter alia, the following practices: vessel monitoring systems (VMS), observer programmes, catch documentation schemes, inspection of vessels in port and at sea, denial of port access or privileges to suspected IUU vessels.
Stopping Illegal, Unreported and Unregulated (IUU) Fishing, FAO Corporate Document Repository (Jun. 25, 2020, 5:45PM) http: / www. fao .org /docrep / 005 / Y3554E/y3554e01.htm.

63 "Reiterating the importance to the achievement of Target 14.6 of quickly concluding the WTO fisheries subsidies negotiations, including prohibition and standstill on subsidies contributing to overcapacity and overfishing and elimination of subsidies contributing to IUU fishing, as well as appropriate and effective special and differential treatment for developing countries, including small island developing states and least developed countries." Trade-Related Fisheries Targets: Sustainable Development Goal 14, Summary Document: Informal Preparatory Working Group 4: High-Level United Nations Conference to Support the Implementation of Sustainable Development Goal 14,11 (2017) (Jul. 1, 2020, 4:20PM) http: // unctad. org/en /PublicationsL ibrary / ditcted2017d3_en.pdf.

64 "Recommending that RFMOs be involved or incorporated in monitoring, reporting and enforcement, in order to make the implementation of future commitments on subsidies more effective." Id.

- A large number of women across the world are part of the fisheries[65], and the situation in the Indian subcontinent is no different[66]. According to the SOFIA 2020, the percentage of women directly engaged in fisheries sector in total is 14 percent, but when the secondary sector (i.e. post-harvest operations) is included, women comprise about half of the workforce.[67] Thus, one of the core aims of the organization shall also be to facilitate gender mainstreaming[68] and women empowerment throughwomen's participation in aquaculture[69],which could signal for women a departure from choices linked solely to domestic pursuits.[70]This would be in accordance with Art. 24(2)(b) of the Fish Stocks Agreement, 1995, which requires States to make fisheries accessible to women fishworkers, among other categories of fishworkers.

- The member countries shall be motivated by the application of principles of "Integrated Ocean Governance"[71] while formulating resolutions and taking collective decisions. This will not only help manage the drastic effects of oil spills, but will directly lend assistance to proper conservation of fish stocks, which get displaced due to seismic surveys for oil exploration, discharge of chemicals from industries, etc.

- The organization shall, as far as possible, align its short-term and long-term goals with those of the Sustainable Development Goal (SDG) 14[72].

The benefits of establishing the organization shall be manifold. First, the regional organization will promote cohesion among the countries and make them work towards constant improvement of the fisheries sector at the national level as well as regional level. The current trends denote that more number of employed people in Asia are found in industrial and service sectors as compared to agriculture and fisheries, which belong to the primary

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65 supra note6.

66 Role of Women in Small-Scale Fisheries of the Bay of Bengal, Swedish International Development Authority, FAO 5-8 (1980) (Jun. 29, 2020, 5:19PM) http://www.fao.org/3/ad745e/ad745e00.pdf.

67 supra note 5.

68 Mainstreaming Gender in Fisheries and Aquaculture: A stock-taking exercise- Final Report, FAO 1 (2013) (Jul.1, 2020, 5:40PM) http://www.fao.org/3/a-i3184e.pdf.

69 Elvira Baluyut, Women in Aquaculture Production in Asian Countries, FAO (Jun. 28, 2020, 5: 20PM) http://www.fao.org/docrep/s4863e/s4863e06.htm.

70 Module 13: Gender in Fisheries and Aquaculture, 565 (Jun. 30, 2020, 5:30PM) http://www.fao.org/3/aj288e/aj288e07.pdf.

71 Integrated ocean governance aims at planning "ocean spaces and activities, taking all marine industries into account, with the goal of maximizing collective benefits while minimizing negative impacts on the environment and ecosystems." It can help fisheries and petroleum exploration activities coexist in marine spaces. The State of World Fisheries and Aquaculture, 2016, FAO, 87(2016) (Jun. 30, 2020, 4:44PM) available at http://www.fao.org/3/a-i5555e.pdf.

72 Goal 14- Conserve and sustainably use the oceans, seas and marine resources, UN (Jun. 25, 2020, 8:40PM) = http://www.un.org/sustainabledevelopment/oceans/.

sector[73].[74]Second, the establishment of the organization could ensure that this sector could witness increased but not excessive activity and subsequently contribute towards raising the amount of fiscal revenues.[75]Third, it will allow member countries to share expertise and experience in the development of fisheries sector. Some of the examples of national level initiatives in some of the proposed member countries are Blue Revolution[76], Green Harbours[77], Cage Culture[78], role of a national corporation in the development of fisheries[79], regulation of fisheries through laws and regulations[80], etc. The information could be shared and exchanged among the countries for a true assimilation of the best practices in each country. It will also lead to port-development initiatives at the national level, which could be supplemented by regional efforts towards ensuring the adoption of compatible measures.

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73 LABOR MARKETS IN ASIA: ISSUES AND PERSPECTIVES 518 (J. Felipe, R. Hasan eds., Asian Development Bank 2006) (Jun. 30, 2020, 00:30 AM) https://books.google.co.in/books.

74 Asia's Economic Transformation: Where to, How, and How Fast? Key indicators for Asia and the Pacific 2013: Special Chapter, Asian Development Bank, Manila, 52 (2013) (Jun. 25, 2020, 1:20PM) https: //www .adb .org /sites /default /files /publication/30358/ki2013-special-chapter.pdf. Trade and Development Report, 2016: Structural Transformation for Inclusive and Sustained Growth, Chapter III: The Catch-Up Challenge: Industrialization and Structural Change, UN, 3 (2016) (Jun. 24, 2020)http://unctad.org/en/PublicationChapters/tdr2016ch3_en.pdf. See generally INDIA: PERSPECTIVES ON EQUITABLE DEVELOPMENT 146 (S. Mahendra Dev, N. Chandrasekhara Rao eds., 2009) (Jun. 29, 2020, 11:30 PM) https: // books. google.co.in/books.

75 According to the UNCTAD, primary sector is a major source of fiscal revenues, which can help capitalize economic diversification and ensuring additional private investment. Trade and Development Report, 2016: Structural Transformation for Inclusive and Sustained Growth, Chapter III: The Catch-Up Challenge: Industrialization and Structural Change, UN, 84 (2016) (Jun. 27, 2020, 1:30PM) http: // unctad. org/ en / PublicationChapters/tdr2016ch3_en.pdf.

76 It is part of the Rainbow Revolution in India. The Blue Revolution envisages holistic development of fisheries sector, encompassing all linkages from harvesting to marketing. (Jun. 27, 2020, 2:30PM) https: // pib. gov. in/ newsite / PrintRelease. aspx?relid=185914.

77 Initiated by Sri Lanka. It envisages development of fishery harbours as Green Harbours, complete with proper infrastructure. (Jul. 2, 2020, 3:30PM) https: //lk. ambafrance org/AFD-project-under-preparation-in-the-Sri-Lankan-fisheries-sector-the-Ambassador.

78 A common feature in India and Pakistan. Both countries have laid special emphasis on development of fisheries through Cage culture as most of the land is under agriculture or horticulture. See National Fisheries Development Board (Jul. 3, 2020, 7:30PM)http://nfdb.gov.in/ce-message.htm, (Jul. 3, 2020, 7:40PM) http://www.fao.org/fishery/facp/PAK/en.

79 Eg- Bangladesh Fisheries Development Corporation is a unique model of development of fisheries under a statutory national corporation. See http://www.bfdc.gov.bd/. Similarly, National Fisheries Development Board (India), Fisheries Development Board (Pakistan) in supra note 78.

80 Indian Fisheries Act, 1897 (India) and The Fisheries Act (5/87) (Maldives)(Jun. 25, 2020, 1:20PM) http: // nbaindia. org/ uploaded / Biodiversity india/1. %20Fisheries %20Act.pdf, https://www.gov.mv/en/files/fisheries-act-of-the-maldives.pdf.

Fourth, although the progress towards achieving the targets of SDG 14 (especially 14.2, 14.4, and 14.6, all of which relate to fisheries)[81]falls short of important requirements[82],establishing this organization could contribute substantially to the achievement of the SDG 14. According to the results derived from International Model for Policy Analysis of Agricultural Commodities and Trade (IMPACT) model[83], it has been projected that aquaculture will make a huge contribution to the fisheries sector in Asia and towards meeting the growing global demand of seafood in the coming 20 years.[84] Furthermore, adopting sustainable measures for conservation will intensify efforts towards 'blue growth'[85], which leads to biosecurity and depends on the usage of precautionary approach.[86]Blue growth will facilitate the 'blue economy' initiative of countries situated in or around the Indian Ocean.[87]Apart from achievement of Goal 14 of the SDGs, development of fisheries can contribute towards the achievement of Goals 1[88] and 2[89] of the SDGs.[90]For instance, the potential of fisheries in Pakistan could be explored[91], considering the prominent location of its ports on the Arabian Sea. Furthermore, it has been noted that between 1961 and 2017, the global food fish consumption has risen at twice the growth of the annual global population.[92]The population in South-East Asia and East Asia is

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81 Sustainable Development Goal 14 (Jun. 30, 2020, 1:15PM) https: // sustainabl development.un.org/sdg14.

82 supra note 1, at 54, 104.

83 Developed by International Food Policy Research Institute (IFPRI) in the 1990s. (Jun. 30, 2020, 1:40PM) https://www.ifpri.org/program/impact-model.

84 Fish to 2030: Prospects for Fisheries and Aquaculture, World Bank Report Number 83177-GLB, The World Bank, 71 (2013) (Jun. 30, 2020, 5:34PM) http://www.fao.org/docrep/019/i3640e/i3640e.pdf.

85 Blue growth is "an umbrella of actions to promote business ideas relating to the local sea and aquatic resources through environmental and economic approach."(Jun. 23, 2020, 5:34PM) http://www.bluegrowth.gr/.

86 Report of the Thirty-Fourth Session of the Asia-Pacific Fishery Commission (APFIC),FAO, 3 (2016) (Jun. 24, 2020, 6:40PM) http://www.fao.org/3/a-i5617e.cpdf.

87 Blue Economy is a priority focus area of the Indian Ocean Rim Association countries, which encompasses all environment-friendly and lucrative initiatives towards marine conservation and development. SeeBlue Economy (Jul. 1, 2020, 5:30PM) https:// www.iora.int/en/priorities-focus-areas/blue-economy.

88 "End poverty in all its forms everywhere". (Jun. 23, 2020, 7:30PM)http: // www. u n . org/sustainabledevelopment/poverty/.

89 "End hunger, achieve food security and improved nutrition and promote sustainable agriculture". (Jun. 23, 2020, 7:40PM) https://www.un.org/ sustainabledevelopment /hunger/.

90 VOL. II: UN SPECIALIZED AGENCIES AND GLOBAL OCEAN GOVERNANCE THE IMLI TREATISE ON GLOBAL OCEAN GOVERNANCE 319 (David Joseph Attard, Malgosia Fitzmaurice et al. eds., Oxford University Press 2018).

91 I.M. Siason, E. Tech, et al.,Women in Fisheries in Asia, 23 (Jun. 30, 2020, 4:50PM) http://pubs.iclarm.net/Pubs/Wif/wifglobal/wifg_asia.pdf.

92 supra note 1, at 3.

projected to grow to 8 billion by 2050[93], and food security and nutrition will pose a huge challenge to these countries. The coastal countries of the region can leverage the opportunities being advanced by the fisheries sector and get their needs met by engaging in consistent development of fisheries.

CONCLUSION

Sustainability of fish stocks, whether straddling or highly migratory, affects the whole ecosystem. But of late, anthropogenic threats have made the fish stocks vulnerable and there is a need for consistent and simultaneous planning and execution. Thus, it is very important to make the interrelationship between oceans and man sustainable in nature. This can be done through RFMOs in the world. But in the Indian subcontinent, there exists a need for an RFMO to be created in accordance with the UN Fish Stocks Agreement, so as to launch an effective programme of conservation with the adoption of an ecosystem approach, making the fish stocks as the starting point of such an endeavour. Thus, creation of the RFMO for this region shall be the first step towards ensuring a systematic mechanism for all steps leading to the ultimate aim of conservation of fish stocks in the region. Such an organization will be a manifestation of robust political will along with the application of the best available scientific evidence and practices, and could become a replicable model for other regions to emulate.

93 South-Eastern Asia Population, Worldometers (Jun. 23, 2020, 5: 40PM) http://www.worldometers.info/world-population/south-eastern-asia-population/.

MARINE OIL POLLUTION: A CRITICAL ANALYSIS OF THE INTERNATIONAL LEGAL REGIME

Amrita Malik*

ABSTRACT

In the recent times, oil pollution in the marine environment has become a matter of international concern and is also considered to be one of the major sources of marine pollution. Many catastrophic accidents like the Gulf war oil spill, the Gulf of Mexico Oil spill, Troy Canyon disaster, the Atlantic Express incident, ABT Summer, Amoco Cadiz, Odyssey Oil Spill, MT Haven, Exxon Valdez Oil Spill etc, and the most recent Arctic oil spill, has highlighted the dangers that these oil spills might cause to the oceans and result in irreparable damage. There has been an unprecedented growth in the production and transportation of oil, which have led to the increase in the risk of oil spill in the waters. Tanker accidents are considered to be one of the sources of marine pollutions taking for example the Prestige or the Erika oil spill disaster. Shipping activities and offshore oil production also contribute to the marine oil pollution. Taking the numerous incidents into account several conventions have been enacted like The Declaration on the Human Environment (Stockholm Declaration), Geneva Conventions of 1958, United Nations Convention on the Law of the Sea (UNCLOS) 1982, International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) of 1954 etc. However, the existing international conventions have not been successful enough to prevent oil spills and issues have also been raised when it comes to the liability and compensation matters. The researcher in the present paper aims to highlight the existing legislations, conventions, and liability and compensation issues on marine oil pollution. And further aims to highlight the dangers such oil spill might cause to the marine ecosystem and further provide suggestions for the improvement in the present legislations.

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Keywords: compensation, legislations, liability, marine pollution, oil spill.

RESEARCH OBJECTIVES

The present study aims to find out the following objectives:

1. To analyse the existing international laws and conventions to combat the scourge of marine oil pollution
2. To analyse the issues relating to compensation and liability in case of marine oil pollution.
3. To provide for suggestions on the improvement of the existing legislations.

RESEARCH METHODOLOGY

The researcher in the present study uses doctrinal method. The study is based upon secondary data which comprises of books, journals, articles, official websites, and online sources. Harvard Bluebook 20th edition citation method is followed for the present study.

SCOPE OF THE STUDY

The present study aims to explore the existing laws and conventions in the field of marine pollution. The study is limited to marine pollution caused by oil pollution and other sources of marine pollution are kept out of the scope for the present study. The study also deals with the various marine catastrophes caused by oil spillage, and highlights the impacts of such accidents on the marine environment. It also deals with the liability and compensation issues in case of damage caused by oil spills and provides for cleanup methods as well.

INTRODUCTION

The marine environment is considered to be a vast and dynamic area facing major environmental issues. Various conflicting activities like that of industrial developments, urbanisation, aquaculture, fisheries, tourism, shipping etc. cause continuous pressure on the marine environment. As far as the scale and impact of the individual development projects is concerned it is unprecedented followed by enormous increase in the legal challenges.[1] United Nations Convention on the Law of the Seas (UNCLOS), defines marine pollution as the direct or indirect introduction of substances or energy into the marine environment which has an impact on the human health, causes interference to the marine activities , impairs the quality of the water. The various sources which is believed to cause marine pollution are: sea-bed

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1 Mahesh R. Sharanappa, Marine Pollution and controls – Need for a comprehensive Environmental Impact Assessment laws, Lex infinitum, http:// www .vmslaw. edu. in/ marine-pollution-and-controls-need-for-a-comprehensive-environmental-impact-assessment laws/ #:~: text = Under % 20that %20 Article % 2C % 20 States % 20 shall, as%20the%20case%20may%20be.

activities, runoffs, dumping, off shore drilling and the most common shipping which often causes oil spill accidents. Shipping is known to be a polluting industry, with shipping operations comprising of tanker accidents and transportation of oil which results in dumping of oil into the waters. [2]

At a global scale, industrialisation has increased which has also led to the increase in transportation of hazardous substances. This eventually increases the chances of accidents like oil spill caused by the ships which causes an adverse impact on the marine environment. This has intensified the concern for the accidental discharges from the ships. Despite of the existence of a variety of regulatory measures relating to prevent oil spillage, the number of such incidents is on the rise. Marine oil spill comprises of accidental discharge of oil like that of crude oil, refined products, persistent fuels so on and so forth. The toxic nature of the oil causes a negative impact on the marine ecosystem. Oil spills is a matter of concern as it causes economic loss and irreparable and long term damage to the marine environment. [3] Incidents of oil spills by tankers depicts the potential of oil spills to hamper and cause irreparable damage to the marine environment. In the recent years, legal concern with respect to marine oil pollution have witnessed an enormous growth , and one of the major factors which has spurred this is, oil spills accidents.[4]

LEISLATIVE FRAMEWORK

In the year 1926, the first international convention on marine oil pollution was adopted by the International Maritime Conference (IMC) in Washington. However the convention was not ratified. With time, there was an increase in the pollution by oil spills and hence the issue of marine oil pollution gained importance. The sources of marine oil pollution are many, however when it comes to pollution caused by oil, there is a dearth of legal documents. Some of the legal instruments which highlight the issues of marine oil pollution are discussed below.

The Declaration on the Human Environment (Stockholm Declaration) 1972

The Stockholm Declaration on the Human Environment of 1972 in its Principle 7 has clearly stated that appropriate steps needs to be taken to prevent marine oil pollution, further Principle 22 highlights the liability and compensation schemes for the marine pollution. It imposes a duty on the states to develop rules of international law to prevent oil pollution.

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2 Sime Curkovic, Sustainable Development: Authoritative and Leading Edge Content for Environmental Management (Sime Curkovic, 2012).

3 III, Charles Sheppard, World Seas: An Environmental Evaluation, 391 (2 ,2019).

4 Mohit, 11 Major Oil Spills Of The Maritime World, Marine Insight (Jun, 10. 2020) https://www.marineinsight.com/environment/11-major-oil-spills-of-the-maritime-world/.

Action Plan

The Stockholm declaration also adopted 109 recommendations which comprised of an ambitious action plan. The plan addresses various types of pollution by means of environmental management, environment assessment and various other supporting measures.

United Nations Environment Programme (UNEP)

The establishment of the United Nations institution, United Nations Environment Programme (UNEP) is considered to be one of the best outcomes of the Stockholm declaration. The UNEP adopted the regional seas actions plans which deals with oil spill and conservation of marine ecosystem and species.

Geneva Convention

Oil pollution as such is not covered under the global conventions exclusively. However, the Geneva Convention on the Continental shelf 1958 in its Article 5(1) states that exploration of the continental shelf or its natural resources should not result in interference with other activities or cause harm to the living resources and Article 5(7) obliges the coastal state to take proper measures to protect the living resources of the sae from harm. Further Geneva Convention on the High Seas in its Article 24 imposes a duty upon the states to make regulations so that oil pollution from ships and sea bed activities can be prevented.

United Nations Convention on the Law of the Sea (UNCLOS), 1982

This convention is considered to be an umbrella convention which deals with the nation's rights and responsibilities regarding their use of oceans and lays down guidelines for business and environment and also deals with the management of marine natural resources. However, the convention lays down general provisions and does not provide for detailed rules regarding marine environment protection. Article 192 of the convention deals with the general obligation of the states to protect and preserve the marine environment and its resources. Article 193 of the convention talks about the right of the states to exploit the natural resources according to the policies and stresses on their duty to protect the marine environment. Article 194 deals with the measures which states are required to undertake to prevent, reduce and control pollution with respect to marine environment. Article 195 imposes a duty on the states not to transfer damage or hazards or transform one form of pollution into another. Article 215 lays down the procedure for enforcement of rules, regulations and procedures to protect the marine environment. Article 207 and Article 208 deals with the measures which states should take to protect the oceans from pollution caused by land based resources and seabed activities respectively. Article 213-214 deals with the enforcement rules regarding pollution caused from land based resources and seabed activities respectively. Article 235 lays down the responsibility and liability for the states with respect to the protection of the marine

environment and in clause 2, it deals with the compensation scheme in case damage is caused by pollution.

Agenda 21

The outcome of the Earth Summit which took place in Rio de Janeiro, Brazil 1992 was the adoption of Agenda 21, among other non binding legal instruments. Agenda 21 is a non-binding in nature. In its Chapter 17, it deals with the protection of the oceans from pollution. It also focuses upon the pollution caused by illegal discharge by ship and the risk of oil spill accidents. It focuses on the compliance of International Convention for the Prevention of Pollution From Ships, 1973 as was modified by the Protocol of 1978 (MARPOL) and the UNCLOS.

International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL) of 1954

This convention is an international treaty which was signed in the year 1954 in London and is considered to be one of the first international treaty which deals with oil pollution. OILPOL '54 addressed the issue of marine pollution caused by the dumping and discharge of oil from ships and oily wastes. OILPOL is administered by the International Maritime Organization (IMO), which is responsible for regulating shipping.

MARPOL (The International Convention for Prevention of Marine Pollution For Ships) 1973

This convention is considered to be the most important convention which aims at prevention of pollution caused by ships. Its objective is to minimise marine pollution caused by activities like dumping and oil pollution. [5]

TORREY CANYON INCIDENT: LEGAL DEVELOPMENTS

One of the worst incident of oil spill in the history was that of the Torrey Canyon oil spill disaster will depicted the loopholes in international system to tackle such incidents which had devastating effects on the marine environment. The provision for accessing compensation and liability was also lacking when it came to the oil spill accidents caused due to the shipping accidents. Therefore, the International Maritime Organisation (IMO) established a legal committee to look into the liability and compensation scheme and a new sub-committee of the Maritime Safety Committee (MSC) was constituted for handling the issues related to the environment.[6] Thus, the Torrey Canyon incident led to the formation of the MARPOL Convention

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5 Australian Government, The International Convention for the Prevention of Pollution from Ships (MARPOL), Infrastructure.gov (Jan.2, 2018), https:// www. infrastructure . gov.au/maritime/environment/MARPOL.aspx.

6 IMO, Convention on the International Maritime Organization, IMO, http://www.imo.org/en/About/Conventions/ListOfConventions/Pages/Convention-on-the-International-Maritime-Organization.aspx.

and the International Convention for the Prevention of Pollution from Ships (MARPOL) was adopted in the year 1973 to deal with pollution caused by oil, chemical and other harmful substances. The incident also led to the adoption of the International convention relating to intervention on the high seas in cases of oil pollution casualties 1969 which dealt with the rights of the coastal states to take measures to prevent, mitigate or eliminate danger to the coastline from oil pollution or any other related casualty. Article I of the convention imposes a duty on the parties to adopt measures to prevent, mitigate or eliminate danger to coastline caused by oil pollution. Article VI deals with the obligation of the state who is responsible for causing damage to others to pay for compensation in such a scenario wherein the measures undertaken has exceeded than those necessary.

LIABILITY AND COMPENSATION REGIME

The oil spill disasters clearly shows that the laws are inadequate for making the polluter liable, and thus, two conventions namely International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC) and the International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (FUND) was adopted to address the compensation for damage caused by oil pollution.

International Convention on Civil Liability for Oil Pollution Damage, 1969 (CLC)

The CLC (1969) deals with the adequate compensation to be paid to the person suffering the damage which is caused by oil pollution resulting from maritime casualty .Under Article III of the convention, liability is on the owner of the ship which pollutes the waters and the liability is strict in nature and the onus of proof is on the owner who is guilty of the fault. It provides for internal rules and procedure which are uniform in nature in order to determine the liability and compensation issues. Further to address the situations wherein compensation was not adequate under the CLC (1969) an international fund was established to look into the compensation scheme under the Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage (1992)

International Convention on the Establishment of an International Fund for Compensation for Oil Pollution Damage, 1971 (FUND)

This convention aims to provide for an additional compensation to the victims who suffered damage due to oil pollution in cases where the compensation provided under the CLC 1969 was inadequate. It also provides for mandatory insurance liability for the ship owner. In order to be entitled to compensation what is required is that the damage must result from the pollution and must have caused a quantifiable economic loss. Further, the claimant has to produce appropriate evidence to substantiate the loss suffered. Under the Protocol of 1992, a separate fund called as International Oil Pollution Compensation (IOPC) was established. This Protocol of 1992

provides for the maximum amount for compensation that is payable for a single incident i.e. 135 million SDR. The FUND also provides for compensation to any of the claimant who has suffered damage because of pollution in cases where no liability arises under the CLC 1969. Further, the CLC (1969) and FUND (1971) conventions was revised during the Diplomatic conference on liability and compensation in 1984. This was because of the Amoco Cadiz oil spill incident which took place in the year 1978. This incident highlighted the inadequate liability limits provided under the FUND and CLC. Thus the Protocol of 1984 revised and updated the liability and compensation schemes for oil pollution damage caused by the ships.[7] The protocol of 1992 amended the CLC (1969) with respect to the limitation amount. And under Article 6(1) of the protocol of 1992 the liability limitation was raised to 89, 77 million SDR.

IMAPCT OF OIL SPILL ON THE MARINE ENVRONMENT

Oil spills are often referred to as environmental disasters taking into account their potential to cause wide range of impacts to the marine ecosystem. Oil spills are toxic in nature and is lethal to the aquatic animals. Oil spills causes enormous harm to the marine environment. It results in physiological and behavioural disruptions; it can also result in death as it affects the respiration and other movement functions of the species. It affects the offshore and coastal waters, plankton, fishes, sea birds, marine mammals and reptiles, corals etc. It leads to mass mortality and contaminates the fishes. Oil causes imbalance in the food chain in the marine ecosystem and also causes long term ecological effects. The wildlife like reptiles, mammals birds etc. are also affected by such oil spills. The hazards include damage to reproductive system and abnormal behaviours, ingestion, smothering etc. Due to heavy oil smothering, there has been a loss of mangroves as they are vulnerable to oil spills. Oil spills affects the shorelines, sea beds, wet lands, as well, and causes damage to the coastal amenities as well. Oil spill not only causes an adverse impact on the aquatic animals but also has the potential to affect human health and activities like fishing, tourism, import export activities etc.

CASE STUDIES

The oil spill accidents that has occurred in the recent times and in the past , has released millions of gallons of oil into the waters which has adversely impacted the marine ecosystem. Due to the increase of use of pipelines for petroleum products, there was a decrease in the use of tankers for oil transportation. Despite of this, incidents of oil spill still occurs. In the year

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7 Beth Van Hanswyk, The 1984 Protocols to the International Convention on Civil Liability for Oil Pollution Damages and the International Fund for Compensation for Oil Pollution Damages: An Option for Needed Reform in United States Law, TIL 319 (1988) .

2019-2020 itself a number of oil spill accidents took place. Some of them are, the Norilsk oil spill in Russia, the Santa Barbara oil spill, wherein an oil tank overturned into Cuyama river releasing about 6,000 gallons of crude oil,[8] the Willowton Oil spill which contaminated the Umunduzi river by spilling 1.6 million litres of caustic soda and fatty oil,[9] the Northeast Brazil oil spill,[10] the Solomon Trader oil spill which spilled around 60 tonnes of oil on the coral reefs of Solomon Island[11]among the others. Some of the worst oil spill disasters are discussed below.

Torrey Canyon disaster- This incident is considered to be one of the most serious oil spills in the world which took place in the year 1967. The Super tanker SS Torrey Canyon spilled almost about 100,000 tonnes of crude oil into the English Channel after hitting the rock off the Cornawall coast.[12] It had a devastating impact on the birds and marine mammals. The effects of the spill continued for years which affected the food chain of the species. [13]

Norilsk Diesel Fuel spill – In the month of June 2020, Russia's president Vladamir Putin called for a state emergency after the Ambarnaya river was contaminated by oil spill from a fuel tank[14] It spilled over 21,000 tonnes of diesel into the river which feeds into the Arctic area This incident is similar to the Exxon Valdez accident, which took place in the year 1989[15]

Exxon Valdez: Is considered to be one of the most infamous oil spill disaster which occurred in the year 1989, Alaska. The oil spill was caused by

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8 Gretchen Wenner,Oil spills into Cuyama River when tanker truck overturns in Santa Barbara County, VC Star, (Mar, 21. 2020 8:31 AM), https: // www .vcstar. com/ story/news/local/communities/county/2020/03/21/oil-spills-into-cuyama-river-when-tanker-truck-overturns-santa-barbara-county/2891016001/.

9 Fred Kockott, Oil spill – Willowton agrees to community demands, Daily maverick (Sep, 11. 2019) https://www.dailymaverick.co.za/article/2019-09-11-oil-spill-willowton-agrees-to-community-demands/#gsc.tab=0.

10 Sao Paulo, Brazilian northeast beaches hit by second oil spill Reuters (Dec, 31. 2019) https://www.reuters.com/article/us-brazil-environment-spill/brazilian-northeast-beaches-hit-by-second-oil-spill-idUSKBN1YY1I1.

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an oil tanker named Exxon Valdez , and a total of 57,000 tonnes of crude oil was released into thee waters which caused destruction to the marine flora and fauna, aquatic animals

Prestige: In the year 2002 an oil tanker MV Prestige sinked into the coast of Galicia, Spain resulting in 60,000 metric tonnes of heavy fuel oil which polluted the coastline sand beaches [16]

Deep water Horizon (Gulf of Mexico) oil spill- It is considered to be the largest marine oil spill in the petroleum industry which took place in the year 2010. It resulted in an extensive damage to the marine ecosystem which killed thousands of birds and marine mammals, se turtles among others. It's impacts were visible till the year 2014, where in aquatic animals like dolphins ,tuna , amberjack who were exposed to the oil died and other developed deformities in their organs.

MT Haven- In the year 1991, MT Haven, a crude carrier exploded of the coast of Genoa, Italy releasing 50,000 tonnes of crude oil into the Mediterranean. For nearly twelve years, the Mediterranean coast was polluted.[17]

Amoco Cadiz oil spill- In the year 1978, a crude oil tanker named Amoco Cadiz ran aground on the rocks of Portsall which was about 5 kilometres from the coast of Brittany, France and spilled nearly 69 million gallons of light crude oil. This killed millions of invertebrates, birds and also contaminated the oyster beds[18].

The Castillo de Bellver Oil Spill- In the year 1983, a Spanish tanker named MT Castillo de Bellver caught fire and broke into pieces resulting in an oil spillage of 170,000 tonnes of crude oil into the Saldanha Bay, Cape town, South Africa.[19]

CONCLUSION

In the recent years, some of the major oil spill accidents have taken place like the Deepwater Horizon in (2010), Norilsk Diesel Fuel spill (2020), Prestige (2002), Exxon Valdez (1989), among others which made this a pressing problem to be addressed urgently. Taking into account the historical oil spill disasters and the recent incidents of oil spill, it is very clear that the aftermath of such accidents is for a long duration and it adversely affects the

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17 Martinelli et al, The M/C Haven oil spill: Environmental assessment of exposure pathways and resource injury IOSC Proceedings 679, 681 (1995).

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marine environment and causes irreparable damage to the marine environment. The spillage caused by the vessels affects not only the aquatic species but also human health and activities. Considering the frequency of oil pollution in the oceans either by exploration or marine casualties, it becomes pivotal to employ oil spill cleanup methods. In order to combat the oil pollution there exists various methods like Bioremediation which uses microorganisms or biological agents to break down or remove the oil from the ocean surface, dispersants can be used to dissipate the oil slicks, vacuum and centrifuge method can be used to suck up the oil spread on the surface of the ocean along with the water and then centrifuge method can be used to separate the oil from water, Solidifying method can be used to clean up the oil spill by converting the physical state of the spilled oil from liquid state to solid state .[20] Which method to apply largely depends upon the amount of oil spillage on the surface of the ocean, i.e. it depends from case to case. Also, the cleanup methods do not bring back the exact state of the natural water as it was before the oil spill, it just reduces the damage which is caused by the oil spillage. Thus, these catastrophes have lead to the development of various laws at international level. They indicated the need for adopting new rules for the prevention, protection and mitigation of such oil spill disasters. There is a need for proper enforcement and compliance of the existing rules followed by the sharing of resources in the international community with respect to the conventions and amendments. Concepts like precautionary principle and polluter pays principle needs to be applied more strictly which are dealt under the sustainable development. These principles are reflected in the conventions of CLC and FUND, to regulate the liability and compensation schemes. The existing international legislations should aim at preventing such incidents and ensuring that least damage is caused to the marine ecosystem by such oil pollution incidents caused by the ships and tankers.

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International Environmental Law

CONSERVATION OF NATUTAL RESOURCES

Dr.M.Jayashree*

ABSTRACT

The economic development of any country is based on its poverty alleviation and maintaining human environment is how to avoid depletion of natural resources such as water,forests,wildlife, minerals and the like. The people of the developed countries are facing many problems associated with the over exploitation of natural resources. Many policies for the conservation of natural resources has been drafted. The public became aware of thedepletion of natural resources and environmental degradation like global warming ,ozone layer depletion, acid rain, famines, floods, scarecity of fuel, drought,starvation and many more. India after Independense to grow economically strong it exploited natural resources at its maximum level now it's the time to rethink about conservation o natural resources. Natural resource can generate and sustain growth, thereby support achievement of millenium development goals.economic growth of any country based on natural capital bothrenewable and non renewable may result in resource depletion. Renewable capital produces the increase of both goods and services but non renewable natural resources such as oil and minerals may decrease in the long run halting economic growth. Renewable natural resources, in principle, can be maintained in perpetuity so long as their rate of use does not exceed their rate of regeneration. So two different set of standards for conservation are required in respect of both renewable and non-renewable natural resources.conservation of natural resources are challenges to the policy makers, in part because it is not a problem of any particular country but a global one. That's why norms and institutions relating to conservation of natural resources and protection of environment have to

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be developed at International level as well as national level.the important international declarations with respect to this are the stock holm Conference 1972, Brundtland commission , caring for the Earth , the Rio Declaration, Agenda 21 etc along with Ntional policies of India.

Key words; economic development, human environment,depletion, water, forest, wildlife, minerals,renewable and non- renewable resources.

INTRODUCTION

Conservation of natural resources is now usually embraced in the broader concept of conserving the earth itself by protecting its capacity for self renewal. Particularly some of the resources are non-renewable they may be the problem for future.for example oil and coal. The aims of conservation of resources are to avoid the depletion of resources that are mainly used for the future generation or posrerity. So conservation of resources is protection as well as rational use of the natural resources. The research method adopted in this paper is doctrinal research.

WHAT IS NATURAL RESOURCE?

Natural resources can be defined as the resources that exist independent of human actions. These are the resources that are found in the environment and are developed without the intervention of humans[1].

The environment is everything which surrounds on organism and influences its life in many ways. It includes physical and biological components. The physical components of the environment are soil, water, air, light and temperature that is abiotic components. The plants and animals are collectively referred to as biotic components.all these components work together ,interact and modify the effect of one another.the basic need of life are fulfilled by minerals present in the nature. These are referred to as Natural Resources. The Earth's natural resources include air, water, soil, minerals, fuels, plants, and animals. Conservation is the practice of caring for these resources so all living things can benefit from them now and in the future

RENEWABLE AND NON-RENEWABLE RESOURCES

All the things we need to survive, such as food, water, air, and shelter, come from natural resources. Some of these resources, like small plants, can be replaced quickly after they are used. Others, like large trees, take a long time to replace. These are renewable resources.

Other resources, such as fossil fuels, cannot be replaced at all. Once they are used up, they are gone forever. These are nonrenewable resources. Natural resources are renewable resource and non-renewable

1 Intranet.bhu.ac.in>pdf

resource:Renewable resources[2] can proliferate in that period relavant for human planning. However, they can be depleted .eg forests or waterNon-renewable resources: Their characteristic: their stock ' provided by' the earth is constant in the period relavant for human planning. For example, traditional energy sources such as gas or coal.

REASON FOR PROTECTION OF NATURAL RESOURCES

People often waste natural resources. Animals are overhunted. Forests are cleared, exposing land to wind and water damage. Fertile soil is exhausted and lost to erosion because of poor farming practices. Fuel supplies are depleted. Water and air are polluted. If resources are carelessly managed, many will be used up. If used wisely and efficiently, however, renewable resources will last much longer. Through conservation, people can reduce waste and manage natural resources wisely. The population of human beings has grown enorrmously in the past two centuries. Billions of people use up resources quickly as they eat food, build houses, produce goods, and burn fuel for transportation and electricity. The continuation of life as we know it depends on the careful use of natural resources. The need to conserve resources often conflicts with other needs. For some people, a wooded area may be a good place to put a farm. A timber company may want to harvest the area's trees for construction materials. A business may want to build a factory or shopping mall on the land.

All these needs are valid, but sometimes the plants and animals that live in the area are forgotten. The benefits of development need to be weighed against the harm to animals that may be forced to find new habitats, the depletion of resources we may want in the future (such as water or timber), or damage to resources we use today.

Development and conservation can coexist in harmony. When we use the environment in ways that ensure we have resources for the future, it is called sustainable development. There are many different resources we need to conserve in order to live sustainably.

THE NEED OF UNDERSTANDING BIODIVERSITY

Biodiversity is the variety of living things that populate the Earth[3]. The products and benefits we get from nature rely on biodiversity. We need a rich mixture of living things to provide foods, building materials, and medicines, as well as to maintain a clean and healthy landscape. When a species becomes extinct, it is lost to the world forever. Scientists estimate that the current rate of extinction is 1,000 times the natural rate. Through hunting, pollution, habitat destruction, and contribution to global warming, people are speeding up the loss of biodiversity at an alarming rate.It's hard to know

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2 https://www.cbd.int>financial,pdf

3 Nationalgeographic.org

how many species are going extinct because the total number of species is unknown. Scientists discover thousands of new species every year. For example, after looking at just 19 trees in Panama, scientists found 1,200 different species of beetles—80 percent of them unknown to science at the time. Based on various estimates of the number of species on Earth, we could be losing anywhere from 200 to 100,000 species each year.

We need to protect biodiversity to ensure we have plentiful and varied food sources. This is true even if we don't eat a species threatened with extinction because something we do eat may depend on that species for survival. Some predators are useful for keeping the populations of other animals at manageable levels. The extinction of a major predator might mean there are more herbivores looking for food in people's gardens and farms.

Biodiversity is important for more than just food. For instance, we use between 50,000 to 70,000 plant species for medicines worldwide. The Great Barrier Reef, a coral reef off the coast of northeastern Australia, contributes about $6 billion to the nation's economy through commercial fishing, tourism, and other recreational activities. If the coral reef dies, many of the fish, shellfish, marine mammals, and plants will die, too.

Some governments have established parks and preserves to protect wildlife and their habitats. They are also working to abolish hunting and fishing practices that may cause the extinction of some species.

The most obvious reason for conservation is to protect wildlife and promote biodiversity. Protecting wildlife and preserving it for future generations also means that the animals we love don't become a distant memory[4]. And we can maintain a healthy and functional ecosystem.

Some species cannot survive outside of their own natural habitat without human intervention such as in zoos and aquariums. So the destruction of their natural habitates poses a real threat to their survival. Furthermore, species that migrate and inhabit more than one natural habitate are also vulnerable. So the preservation of these habitats helps to prevent the entire ecosystem being harmed. As more and more species face extinction, the work being done to protect the wildlife that calls this planet home is becoming more and more important.

THE PROTECTION OF EARTH THROUGH CONSERVATION OF NATURAL RESOURCES

It's not a secret that the future of our planet desperately needs to be safeguarded, with climate change already wreaking havoc on our natural environment. In order to preserve the earth for future generations, we are not only need to reduce the amount of harm that human activities have on the environment but support the natural world as much as we can. Nature itself is

4 www.fao.org

our biggest tool in the fight against global warming, and through conservation work, we can fully utilise nature's contribution to the mitigation action that is needed to avoid a catastrophic increase in temperature[5]. Everything from tropical forests to our coastline has a part to play in the fight against climate change, as well as protecting our communities. So it's important to do all that we can to protect them.

FOR THE BETTER HEALTH OF HUMAN BEINGS

One pretty big reason for conservation work that is talked about a little less often is the impact that it has on human health. Both in terms of preventing the emergence of new diseases, and the production of medicines that we rely upon.Having wild habitates for animals serves as a barrier. It prevents emerging infectious diseases from jumping from animals to humans. Previously undisturbed habitats have been cleared to make way for humans and agriculture. This has brought wild and domestic animals together and helped to facilitate the jump of diseases to humans. One such example is the Ebola outbreak. Ebola is a zoonosis i.e.,an animal disease that can jump to humans.It is believed that it most likely spread to humans from bats. The present one is corona virus which is making the whole world to suffer immensely.

A lot of the medicines that we use as humans are also derived from chemicals that are produced by animals or plants. So by protecting nature we also protect the life saving drugs we rely upon, including anti-cancer drugs.

Because of all these reasons we cannot be healthy in an unhealthy environment. It is in our own best interests to preserve the natural world as much as we can. The exploitation of the natural world threatens our capacity to provide food and water for the people on earth, and things like pollution are directly harmful to human health.

RESOURCE MEANS

The word resource is used for "means of supplying a material generally held in reserve." The natural resources are the materials available in the normal environment and useful for life. The natural resources occur naturally within environments. Natural resource is often characterized by amounts of biodiversity and geo diversity existent in various ecosystem[6]. Any material which is part of earth and satisfy human need and add value is called as resource. Example: rocks, minerals, soil, rivers, plants and animal. Human is also a resource because developing his skill, he can develop other resource by adding value to the physical material.

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5 https://www.nationalgeographic.org

6 https://en.m.wikipedia.org>wiki

CONSERVATION OF NATURAL RESOURCES AND THE RELATED LAWS IN INDIA

One of the basic problems associated with economic development are poverty alleviation and maintaining human environment is how to prevent depletion of natural resources,India at rhe time of independence, was among the poorest countries with little infrastructure for development and therefore for the purpose of economic growth started using natural resources to extensively build infrastructure resulting in over exploitation of natural resources such as water for agriculture, forests and minerals[7].This process helped india to bring substantial portion of the people above the poverty line but this process of economic growth put pressure on natural resources of the country. Various global environmental assesments show a continuous decline of natural resources, increasing the vulnerability of the poor as a result of eco system stress, competeition for space, soaring food and energy prices and climate change. Concerns about the implications of environmental degradation and resource depletion have never been as widely documented and shared as today[8].

The need for protection and conservation of environment and sustainable use of natural resources is reflected in the constitutional framework of India and also in the international commitments of India. The Constitutionof India under Part IVA, Art 51A-Fundamental Duties[9] casts a duty on every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife, and to have compassion for living creatures. Further, the Constitution of India under Part IV, Art 48A the Directive Principles of State Policies[10], stipulates that the State shall Endeavour to protect and improve the environment and to safeguard the forests and wildlife of the country. Moreover the better environment is a fundamental right under Article 21 of the part III of the Indian Constitution[11], for better human living environment conservation of natural resources is very important and essential one.

Several environment protection legislations existed even before Independence of India. However, the true thrust for putting in force a well-developed framework came only after the UN Conference on the Human Environment (Stockholm, 1972). Fn.(shodh ganga).

After the Stockholm Conference, the National Council for Environmental Policy and Planning was set up in 1972 within the Department of Science and Technology to establish a regulatory body to look after the environment-

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7 EUGEN P.ODUM AND GRAY W. BARRET, Fundamentals of Ecology,(NEW York: Oxford University Press, 1985,p.5.

8 natural resources and pro –poor growth google search.

9 V. N. SHUKLA's Constitution of India, Mahendra p.Singh, eleventh edition, Eastern Book Company,2011,p.361.

10 Opcit p.359

11 Opcit pp.191 to 211

related issues. This Council later evolved into a full-fledged Ministry of Environment and Forests (MoEF).

MoEF was established in 1985, which today is the apex administrative body in the country for regulating and ensuring environmental protection and lays down the legal and regulatory framework for the same. Since the 1970s, a number of environment legislations have been put in place. The MoEF and the pollution control boards ("CPCB", ie, Central Pollution Control Board and "SPCBs", ie, State Pollution Control Boards) together form the regulatory and administrative core of the sector.

Some of the important legislations for environment protection are as follows:

The National Green Tribunal Act, 2010

The Air (Prevention and Control of Pollution) Act, 1981

The Water (Prevention and Control of Pollution) Act, 1974

The Environment Protection Act, 1986

The Hazardous Waste Management Regulations, etc.

These important environment legislations have been briefly explained in the following paragraphs.

THE NATIONAL GREEN TRIBUNAL ACT[12]

The National Green Tribunal Act, 2010 (No. 19 of 2010) (NGT Act) has been enacted with the objectives to provide for establishment of a National Green Tribunal (NGT) for the effective and expeditious disposal of cases relating to environment protection and conservation of forests and other natural resources including enforcement of any legal right relating to environment and giving relief and compensation for damages to persons and property and for matters connected therewith or incidental thereto.The Act envisages establishment of NGT in order to deal with all environmental laws relating to air and water pollution, the Environment Protection Act, the Forest Conservation Act and the Biodiversity Act as have been set out in Schedule I of the NGT Act.

THE AIR (PREVENTION AND CONTROL OF POLLUTION) ACT

The Air (Prevention and Control of Pollution) Act[13], 1981 (the "Air Act") is an act to provide for the prevention, control and abatement of air pollution and for the establishment of Boards at the Central and State levels with a view to carrying out the aforesaid purposes.To counter the problems associated with air pollution, ambient air quality standards were established under the Air Act. The Air Act seeks to combat air pollution by prohibiting the use of

12 https://green tribunal.gov.in…PDF
13 legislative.gov.in 1981 PDF

polluting fuels and substances, as well as by regulating appliances that give rise to air pollution. The Air Act empowers the State Government, after consultation with the SPCBs, to declare any area or areas within the Sate as air pollution control area or areas. Under the Act, establishing or operating any industrial plant in the pollution control area requires consent from SPCBs. SPCBs are also expected to test the air in air pollution control areas, inspect pollution control equipment, and manufacturing processes.

THE WATER (PREVENTION AND CONTROL OF POLLUTION) ACT

The Water Prevention and Control of Pollution Act[14], 1974 (the "Water Act") has been enacted to provide for the prevention and control of water pollution and to maintain or restore wholesomeness of water in the country. It further provides for the establishment of Boards for the prevention and control of water pollution with a view to carry out the aforesaid purposes. The Water Act prohibits the discharge of pollutants into water bodies beyond a given standard, and lays down penalties for non-compliance. At the Centre, the Water Act has set up the CPCB which lays down standards for the prevention and control of water pollution. At the State level, SPCBs function under the direction of the CPCB and the State Government.Further, the Water (Prevention and Control of Pollution) Cess Act was enacted in 1977 to provide for the levy and collection of a cess on water consumed by persons operating and carrying on certain types of industrial activities. This cess is collected with a view to augment the resources of the Central Board and the State Boards for the prevention and control of water pollution constituted under the Water (Prevention and Control of Pollution) Act, 1974. The Act was last amended in 2003.

THE ENVIRONMENT PROTECTION ACT

The Environment Protection Act[15], 1986 (the "Environment Act") provides for the protection and improvement of environment. The Environment Protection Act establishes the framework for studying, planning and implementing long-term requirements of environmental safety and laying down a system of speedy and adequate response to situations threatening the environment. It is an umbrella legislation designed to provide a framework for the coordination of central and state authorities established under the Water Act, 1974 and the Air Act. The term "environment" is understood in a very wide term under s 2(a) of the Environment Act. It includes water, air and land as well as the interrelationship which exists between water, air and land, and human beings, other living creatures, plants, micro-organisms and property.

Under the Environment Act, the Central Government is empowered to take measures necessary to protect and improve the quality of environment

14 https://www.jspcb.nic.in>files,PDF
15 https://indiacode.nic.in>ep_a...PDF

by setting standards for emissions and discharges of pollution in the atmosphere by any person carrying on an industry or activity; regulating the location of industries; management of hazardous wastes, and protection of public health and welfare. From time to time, the Central Government issues notifications under the Environment Act for the protection of ecologically-sensitive areas or issues guidelines for matters under the Environment Act.

In case of any non-compliance or contravention of the Environment Act, or of the rules or directions under the said Act, the violator will be punishable with imprisonment up to five years or with fine up to Rs 1,00,000, or with both. In case of continuation of such violation, an additional fine of up to Rs 5,000 for every day during which such failure or contravention continues after the conviction for the first such failure or contravention, will be levied. Further, if the violation continues beyond a period of one year after the date of conviction, the offender shall be punishable with imprisonment for a term which may extend to seven years.

HAZARDOUS WASTES MANAGEMENT REGULATIONS.2016

Hazardous waste means[16] any waste which, by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics, causes danger or is likely to cause danger to health or environment, whether alone or when in contact with other wastes or substances.There are several legislations that directly or indirectly deal with hazardous waste management. The relevant legislations are the Factories Act, 1948, the Public Liability Insurance Act, 1991, the National Environment Tribunal Act, 1995 and rules and notifications under the Environmental Act. Some of the rules dealing with hazardous waste management are discussed below:

Hazardous Wastes (Management, Handling and Transboundary) Rules[17], 2008 brought out a guide for manufacture, storage and import of hazardous chemicals and for management of hazardous wastes.

Biomedical Waste (Management and Handling) Rules, 1998, were formulated along parallel lines, for proper disposal, segregation, transport, etc, of infectious wastes.

Municipal Solid Wastes (Management and Handling) Rules, 2016,the above said all drafts has been replaced by the 2016 rules. Solid waste management means the discipline associated with the control of generation, storage, collection, transfer, processing and disposal of solid waste. The principles of waste management are waste hierarchy, life cycle of a product, resource efficiency, polluter pays principle, modern era, waste handling practices, landfill and incineration.

16 https://vikaspedia.in>environment.
17 https://indian kanoon.org>doc.

E - Waste (Management and Handling) Rules, 2011 have been notified on May 1, 2011 and came into effect from May 1, 2012, with primary objective to reduce the use of hazardous substances in electrical and electronic equipment by specifying threshold for use of hazardous material and to channelize the e-waste generated in the country for environmentally sound recycling. The Rules apply to every producer, consumer or bulk consumer, collection centre, dismantler and recycler of e-waste involved in the manufacture, sale, purchase and processing of electrical and electronic equipment or components as detailed in the Rules.

Batteries (Management & Handling) Rules, 2001 deal with the proper and effective management and handling of lead acid batteries waste. The Act requires all manufacturers, assemblers, re-conditioners, importers, dealers, auctioneers, bulk consumers, consumers, involved in manufacture, processing, sale, purchase and use of batteries or components thereof, to comply with the provisions of Batteries (Management & Handling) Rules, 2001.

Other Laws Relating to Environment

In addition, there are many other laws relating to environment, namely –

The Wildlife Protection Act.

The Wild Life (Protection) Act[18], 1972 was enacted with the objective of effectively protecting the wild life of this country and to control poaching, smuggling and illegal trade in wildlife and its derivatives. The Act was amended in January 2003 and punishment and penalty for offences under the Act have been made more stringent. The Ministry has proposed further amendments in the law by introducing more rigid measures to strengthen the Act. The objective is to provide protection to the listed endangered flora and fauna and ecologically important protected areas.

The Forest Conservation Act.

The Forest Conservation Act[19], 1980 was enacted to help conserve the country's forests. It strictly restricts and regulates the de-reservation of forests or use of forest land for non-forest purposes without the prior approval of Central Government. To this end the Act lays down the pre-requisites for the diversion of forest land for non-forest purposes.

The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006, recognises the rights of forest-dwelling Scheduled Tribes and other traditional forest dwellers over the forest areas inhabited by them and provides a framework for according the same. The Indian Forest Act, 1927 consolidates the law relating to forests, the transit of forest-produce and the duty leviable on timber and other forest-produce.

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18 legislative.gov.in>sites>files pdf.
19 Nbaindia.org>legal>pdf.

The Biological Diversity Act.

The Biological Diversity Act[20] 2002 was born out of India's attempt to realise the objectives enshrined in the United Nations Convention on Biological Diversity, 1992 which recognises the sovereign rights of states to use their own Biological Resources. The Act aims at the conservation of biological resources and associated knowledge as well as facilitating access to them in a sustainable manner. The National Biodiversity Authority in Chennai has been established for the purposes of implementing the objects of the Act.

Coastal Regulation Zone Notification[21].

The Ministry of Environment and Forests had issued the Coastal Regulation Zone Notification vide Notification no. S O. 19(E), dated January 06, 2011 with an objective to ensure livelihood security to the fishing communities and other local communities living in the coastal areas, to conserve and protect coastal stretches and to promote development in a sustainable manner based on scientific principles, taking into account the dangers of natural hazards in the coastal areas and sea level rise due to global warming.again notified in 2019.

INTERNATIONAL EFFORTS FOR CONSERVATION OF NATURAL RESOURCES.

Evolution of principles of law relating to conservation of natural resources at international level

The intellectual development prior to 1972 produced certain works questioned the desirability of too much industrialization, modernization and development and sought to rethink the impact of human activity on the environment9. There was a strong dooms day trend and scarce of disasters.

The Stockholm Conference 1972

The first major step in respect of protecting human environment was the United

Nations Conference on Human Environment or Stockholm Conference 1972. The conference brought the dichotomy between the claims of developed and developing countries. The conference ended up with three substantive outcomes[22]. Firstly emphasized the importance of a global commitment to protect resources and limit pollution against the importance of economic development. Secondly the recommendations relating to human settlement, resource management, pollution, development and the social dimensions of the impact of environmental degradation on human environment. Thirdly the united nations environment programme. The

20 eptrienvis.nic.in>All pdf files.
21 https://www.jagranjosh.com.
22 Shodhganga.inflibnet.ac.in

major achievement of this conference was that it brought the government of all nations together to debate the international environment issues.

Caring for the Earth

In the 1991 'Caring for the Earth', the successor to the World Conservation Strategy was prepared in cooperation with the UNEP. It concentrates on Energy, Business, industry and commerce, Human settlement, Farm and range lands, Forest lands, Fresh waters, oceans and coastal areas. Although a more discursive document, it does endeavour to define actions that are necessary to achieve sustainable development. It contains a broad range of prescriptions on environmental policy and includes a substantial section on the content of environmental law.

THE RIO DECLARATION.1992

The important principles proclaimed at Rio[23] were, Human beings are entitled to a healthy and productive life in harmony with nature; State has the sovereign right to exploit their own resources and responsibility to ensure that activities within their jurisdiction do not cause damage to the environment of other states; The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations (Doctrine of Intergeneration Equity) ; In order to achieve sustainable development, environmental protection shall constitute an integral part of the developmental process (Doctrine of Sustainable Development); All States and all people shall cooperate in the essential task of eradicating poverty; The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable, shall be given special priority; In order to protect the environment, the precautionary approach shall be widely applied by the States. Lack of scientific certainty shall not be used as a reason for postponing cost effective measures to prevent environmental degradation (Precautionary Principle); National authorities should endeavour to promote the internalization of environmental costs taking into account the approach that the polluter bears the cost of pollution (Polluter Pays Principle); Peace, development and environmental protection are interdependent and indivisible; State should recognize and duly support the indigenous people and other local communities because of their knowledge and traditional practices relating to environmental management and development. States should also enable their effective participation in the achievement of sustainable development; and States and people shall cooperate in good faith and in a spirit of partnership in the fulfillment of the principles embodied in this declaration.

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23 https://sustainabledevelopment.un.org>pdf

Agenda 21

Agenda 21 consists of 40 chapters, divided into four sections as: first, the socio-economic dimension (habitats, health, demography, consumption and production patterns, etc.). Second the conservation and resources management (atmosphere, forest, water, waste, etc.). Third strengthening the role of NGO and other social groups such as trade unions, women, youth, etc and lastly measures of implementation like financing, institutions[24], etc.

The Agenda for the 21st century stressed on international cooperation in environmental protection as an absolute necessity, to conserve the environment in its totality. Cooperation between States for environmental protection appears most often in the work of international organizations. Many environmental problems cannot be solved by simple adoption of regulation; they need ongoing cooperation between the concerne States. The principle of preservation and protection of the environment can be achieved only through international effort, as environment is not the concern of one State or group of States, but of this planet.

CONCLUSION

Regardless of the economic activity, development is closely linked to use of the natural resource endowment. Nevertheless the absence of an appropriate strategy for ensuring comprehensive management of this endowment over the long term could make sustainable development a difficult goal to reach. Sustainable development is largely about people, their well being, and equity in their relationships with each other, in a context where nature-society imbalances can threaten economic and social stability. we need to conserve our Natural Resources because it is the main source of our daily needs. we need to conserve because it is limited one .if these resources are abused and harmed then there will sure threat for the human life.

24 MI News Network, 9 Methods for Oil Spill Cleanup at Sea , Marine Insight (Jan.3,

International Organisation

WTO DISPUTE SETTLEMENT SYSTEM, TRADE, ISSUE OF JUSTICE AND CHALLENGES

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ABSTRACT

There is a feeling that of public international law relating economic relations among states, individuals and firms which is implemented and monitored through treaty based institutions such as WTO, IMF and the World Bank is not fair to all member nations of trade community. It is observed that 'liberal trade brings peace and prosperity'. But there has to be creation of level playing field on which least developed, developing and developed countries will have equal right to access to international market without compromising the quality of goods and services. By underlying the importance of acting in accordance with rule of law and by adopting justice oriented approach, the world economic order will have the potential of ensuring inclusive growth and achieving Sustainable Development Goals (SDG). It is high time to conduct audit of the WTO working system in the light of mandate of SDGs. There are challenges like lack of expertise in WTO law, constrained financial resources and fear of political and economic pressure are the areas on which serious debate should take place. The paper looks critically into the various strategies the developing countries should adopt in order to successfully respond to these challenges. Ultimately, it is a perspective that matters for the parties. Sector specific approach and level of development of the states shall be bases for determining and applying the strategy to deal with difficulties facing WTO. With constitutionalization of international economic institutions on democratic principles and sustainable development goal based vision, all the participants in the market should be able to equally play their role. It is important to analyze agriculture sector as it is included in the negotiations between WTO member countries and also is

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backbone of most of the developing countries. It is also interesting to note and analyze Trump effect on international economic order and social justice.

Key words: WTO, Justice, SDG, Trade, Agriculture, and Agreements.

INTRODUCTION

Legislative and judicial roles are the two important roles that the WTO plays. The one is limited to the conduct of trade relations among Member.[1] The other one is to conduct litigation brought pursuant to the consultation and dispute settlement provisions of WTO covered agreements.[2] As disputes are endemic, the requirement of their settlement becomes indispensable for the growth of trade. This occupies important place in realization of Sustainable Development Goals, along with sense of fulfillment based on justice. The gap between poor, developing and developed nations is increasing year after year. There is a need to strengthen the international organizations like WTO dispute settlement body which is gradually losing its relevance in the field of international trade. The paper tries to analyze the flaws at WTO and the possibility of removing them.

THE CONCEPT OF TRADE DISPUTE

In international law the term dispute means a specific disagreement relating to a question of rights or interests in which the parties proceed by the way of claims, counter-claims, denials and so on.[3] A situation in which one WTO Member State adopts a trade policy or measure or takes some action that one or more concerned WTO Members consider to be a breach of the WTO Agreements or a failure to meet obligations under such agreements is considered to be a situation of "dispute" in the context of the WTO dispute settlement system.[4]

Disputes are different from conflicts. Conflicts may not be desirable as they bring hostility, but disputes are desirable as they may have an effect of law clarification. Trade can be carried systematically only when there is a system existing, particularly a legal system. The term 'system' implies that there is co-ordination and regularity. The legal system sets out many tasks to be achieved. Broadly speaking, it provides a framework within which people conduct their affairs. It also carries out educative function of shaping people's ideas. The overall task of legal system is to achieve justice in society. Injustices are practiced, no one doubts that these do occur, the authorities contrive to hide them behind a veil of justice.[5] It is when such practices become

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1 MARRAKESH AGREEMENT ESTABLISHING THE WORLD TRADE ORGANIZATION (WTO AGREEMENT), ART. II.

2 DISPUTE SETTLEMENT UNDERSTANDING (DSU), ART. 1.1.

3 J. COLLIER, V. LOWE, THE SETTLEMENT OF DISPUTES IN INTERNATIONAL LAW. INSTITUTIONS AND PROCEDURES, 1(New York 2000)

4 K. Sarhan, The ABCs of WTO Dispute Settlement, DISPUTE RESOLUTION JOURNAL, 72 (Nov 2005–Jan 2006)

5 RMW DIAS, JURISPRUDENCE, 62 (5th ed.Lexis Nexis, New Delhi, 2013)

intolerable to the masses and the veil becomes threadbare and transparent that revolution tears the system apart in the hope of establishing a new and more just system in its place.[6] This is the time for the member nations to strive for the establishment of more just WTO dispute settlement system, keeping in mind that the achievement of a minimum of justice is a condition sine qua non of the continuity of a free and fair trade system in the world. This necessity becomes more relevant in the light of the statement of Professor H.A. Smith that international law as a whole is binding upon all civilized states irrespective of their individual consent, and that no State can by its own act release itself from the obligation either of the general law or of any well established rule.[7]

WTO AND ITS' WORKING SYSTEM

It is believed that the WTO is a vehicle which will take nations on the path of development. It is also the experience that to get on this vehicle is not easy, nor is it simple to stay on it without losing balance because of the WTO's unique power. Some scholars call it as "Cross retaliation" power.[8] They call it so because, parties to the WTO agreements, if they fail to implement or act according to agreed schedules under the agreements, they will perish.[9] However, the emergence of WTO at the conclusion of the Uruguay round of trade negotiations of GATT has marked the beginning of new global order.

We are all aware of the fact that World Trade Organisation is a two-tier mechanism.[10] One is at the domestic level, other one is at the international level. Both are interdependent and interconnected. If a particular case is poorly handled at the domestic level, it will have lower chance of success at the international level. Some scholars opine that the handling of cases by the governments in cooperation with private industries or corporations will have better chance of winning at the international level.

Some of the criticisms against WTO are about lack of transparency in decision-making, the ambiguous special and deferential treatment provisions and poor enforcement mechanisms and the asymmetrical use of WTO dispute settlement understanding (DSU) provisions by developed and developing member states are the main criticisms.

It is always important to settle the disputes as quickly as possible to achieve prosperity. Early resolution of disputes will have beneficial impact on the

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6 Id.

7 Vol I, Professor H.A. Smith, Great Britain and the Law of Nations 12,13 (1932), quoted in J.G. STARKE, INTRODUCTION TO INTERNATIONAL LAW 26 (10th ed.Butterworth & Co Ltd. U.K. 1989)

8 TALWAR SABANNA(ed), WTO AND INDIAN ECONOMIC REFORMS, ix.(NEW DELHI,Serials Publications, 2008)

9 Id.

10 Thomas Cottier, A Two-Tier Approach to WTO Decision Making, 1.NCCR Trade Working papers .

trade and economy of any member nation under the international trade law. The states have various options to settle their disputes particularly with reference to trade. Some states prefer to settle their disputes under a system of rules rather than under a system of negotiations.[11]Powerful states and weak states may have different approaches for settlement of disputes depending upon the chances of obtaining the favorable settlement. Rachel Brewster had opined that the powerful states may prefer to adopt a system of negotiations because they have resources to settle their disputes on favorable terms. By contrast, weak states prefer the system of rules so as to hold the powerful states accountable to the terms in the agreement.[12] But it is very interesting to note that state like United State of America preferred to adopt rule based approach to settle the dispute as it would give the President control of the trade policy on the domestic level, even though it may restrain the bargaining power in the international politics.[13] However, recently during President Trump regime, the approach of "America first" is clear departure from the earlier stand of "globalist approach", which will have negative impact on the dispute settlement mechanism. The Trump Administration had clearly rejected the ideology of Globalism and embraced the doctrine of patriotism.[14] These are implemented by taking steps like withdrawing from the U.N. Human Rights Council, from the United Nations Educational, Scientific and Cultural Organization (UNESCO). If the U.S. continues its approach of criticizing the global dispute resolution mechanisms, it would increase the risk of instability and conflict.[15]

INTERNATIONAL TRADE

International trade was prevalent from the dawn of civilization. But there was lack of systematic law to govern this field of trade. Now it is well established that without integration of markets, it would be just impossible to achieve progress in any field of economic activity.

There is a strong link between trade and justice. It is the trade that has lot of impact on resource distribution. Due to inequalities in resource distributions, there is always a perception that international regimes such as trade are unjust, thus undermining the ability of international trade to promote domestic and international peace.[16] In the media it is reported that the trade has an image problem with respect to fairness. Frank J. Garcia argues that this image problem is particularly influenced by domestic

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11 See, Rachel Brewster, Rule-Based Dispute Resolution in International Trade Law, 92 VA. L. REV. 251 (2006).

12 Id.

13 Id. at. 288

14 Kiran Nasir Gore, An Introduction to the Trump Effect on the Future of Global Dispute Resolution, 51 Geo. Wash. Int'l L. Rev. 635 (2019).

15 M. Arsalan Suleman, The Trump Effect: International Negotiation and Dispute Resolution, 51 Geo. Wash. Int'l L. Rev. 651 (2019).

16 Frank J. Garcia, Trade, Justice and Security, 37 Stud. Transnat'l Legal Pol'y 78 (2005).

inequalities and their perceived link to trade and globalization.[17] He also argue that linking policy tools such as competition law to trade law can ameliorate the negative perceptions of trade's impact on domestic inequality, thereby improving trade's capacity to promote international peace and security.[18]

JUSTICE CONTENT IN WTO DISPUTE SETTLEMENT:

Trade participants are having expectations of receiving justice at the hands of international institutions like WTO dispute settlement body. There are different senses in which one can speak about justice. Formal justice in legal reasoning, procedural justice in processing legal claims, transitional justice in doing justice to the past, and corrective, retributive and restorative justice in human rights abuses are the various senses of justice commonly known to the legal system.[19] As Law is an instrument of society,[20]the function and purpose of law is to ensure justice, bring stability and peaceful change in the society. Injustice is the charge leveled against men, acts or laws that treat one or more persons more harshly or more favorably than others in the same situation.[21] John Rawls calls justice as fairness.[22] Justice as fairness is not a complete contract theory. For it is clear that the contractarian idea can be extended to the choice of more or less an entire ethical system, that is, to a system including principles for all the virtues and not only for justice.[23]All social values, liberty and opportunity, income and wealth, and the bases of self-respect are to be distributed equally unless an unequal distribution of any, or all, of these values is to everyone's advantage. Injustice, then, is simply inequalities that are not to the benefit of all.[24] Applying these principles to the WTO dispute settlement body and other related bodies, it becomes obvious that it is the binding duty of all these bodies to take decisions for the benefit of the world trading community.

SOME CONCERNS AT WTO SYSTEM

Some scholars have expressed their doubts whether WTO can live up to the moniker "World Trade Court".[25] This apprehension had arisen because

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17 Id.at.79
18 Id.
19 SCOTT VEITCH, EMILIOS CHRISTODOULIDIS AND LINDSAY FARMER, JURISPRUDENCE: THEMES AND CONCEPTS, 51 (2nd ed. Routledge, London,2012)
20 P.J. FITZGERALD, SALMOND ON JURISPRUDENCE, 60-61 (12th ed. Sweet & Maxwell, London, 1966)
21 Id.
22 JOHN RAWLS, THE THEORY OF JUSTICE(1971)
23 Id.
24 Id.
25 See discussion in John A. Ragosta, Unmasking the WTO-Access to the DSB System: Can the W7O DSB Live Up to the Moniker "World Trade Court"? 31 LAW & PoL'Y IN-r'L Bus. 739 (2000).

of some of the difficulties faced by the nations in getting justice at the hand of WTO. The binding nature of dispute settlement under the WTO should send strong message to the member nations that they should abide by the agreed-upon terms or face possible sanctions.[26] The scholars stated[27]

In sum, forced compliance via binding dispute settlement should, theoretically, ensure that each country receive all the benefits for which it negotiated, and that no country is required to make concessions to which it has not agreed and which have not been "paid for."

The member nations have expectations that WTO DSB would adopt appropriate judicial behavior in all cases. There is also demand for fundamental reformulation of WTO DSB like the member nations must have some ability to block implementation of panel decisions that are fundamentally inconsistent with important provisions, strict standard of review need to be provided and protection of real parties in interest are essential.[28]If such reforms are not undertaken then, there is a possibility of WTO dispute settlement body becoming increasingly irrelevant which would be an unfortunate consequence that the international trade should face.

Some scholars are expressing the view that rule-based international trading order is most likely ending.[29] The WTO norms that have effectively governed trade disputes for two decades involve three major principles: acceptance of multilateral adjudication, a prohibition on counter retaliation, and the regulation of remedies. There are some concerns at WTO dispute settlement system which require urgent attention of all the members. They are, long timetables to conform with the treaties by a Member in breach and not strict enough incentives and sanctions to help achieve the implementation objective of prompt compliance, the lack of checks and balances, the private counsel controversy, dispute settlement system's independence, keeping the lid on dissents, consensus at all costs, rebalancing retaliation problem, the question of equal access to the DSU, and legitimacy concerns.[30]

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26 John Ragosta, Navin Joneja & Mikhail Zeldovich, WTO Dispute Settlement: The System Is Flawed and Must Be Fixed, 37 Int'l L. 697 (2003).

27 Id. at.698

28 Id.

29 Rachel Brewster, Wto Dispute Settlement: Can We Go Back Again? AJIL UNBOUND (Aug 18, 2020 2.30PM)https://www.cambridge.org/core/journals/american-journal-of-international-law/article/wto-dispute-settlement-can-we-go-back-again/BA9985348C5BE20F8EF11FD620A48BEF

30 Bartosz Ziemblicki, The Controversies over the WTO Dispute Settlement System (Aug.19,2020 3.30 PM)https: //www. google. com/ url?sa= t&rct= j&q= &esrc= s&source=web&cd=&cad=rja&uact=8&ved=2ahUKEwjvm 9KsejrAhVSX HwKHULABZ4 QFjALeg QIAhAB &url= http% 3A%2 F% 2Fwww.bibliote kacyfrowa. pl%2FContent%2F32203%2F0014.pdf&usg=AOvVaw27zLd1H1Io1b22g-AjCG5H

AGRICULTURE AND WTO

The main function of WTO is to ensure that trade flows as smoothly, predictably and freely as possible. The main issue relating to agriculture is export subsidy. Tenth Ministerial conference held at Nairobi directed all the member nations to stop distorting trade relating to agriculture by eliminating subsidies.[31] Subsidies in developed countries have affected the trading pattern of a number of Indian agricultural products. Instability of international prices has negatively affected export performance of a few crops in which India is internationally competitive.[32] However, due to ruling by WTO against United States of America in Cotton case involving cotton growing country like Brazil, the interest of the developing country may be hoped to be protected. There are issues relating to lack of expertise, lack of consultation and lack of proper balancing of interests are the major subjects which are to be given serious attention at the appropriate international forums.

CONCLUSION

There is a prediction that a world of more power-based bargaining may be returning, and the value of the WTO to all countries will be greatly diminished.[33] On the other hand there is also a view that WTO can play effective role the post-covid-19 pandemic. The emerging economies like India, China, Brazil, Koria such other countries have successfully used WTO dispute settlement system in protecting their commercial interest. They must raise voice against USA which is trying to harm the rule-based trading system. There is a need to remove the impression that the recourse to WTO dispute settlement is long drawn process. Three major principles of WTO like, acceptance of multilateral adjudication, a prohibition on counter retaliation, and the regulation of remedies have to be reinforced in order to achieve Sustainable Development Goals. As the new wave of national interests are emerging like America for America, all member nations should unite together to protect the interests of all nations in the way they had united in establishing United Nation Organisation. The principle of constitutionalisation of international organizations like WTO is very much required to be executed in order to face the new global challenges, particularly in the light of Trump effect on international trade and trade war with China.

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31 Ministerial Decision of 19 December 2015 : WT/MIN(15)/45 — WT/L/980

32 Pal, Parthapratim: Current WTO Negotiations on Domestic Subsidies in Agriculture: Implications for India, Working Paper, No. 177, Indian Council for Research on International Economic Relations (ICRIER), New Delhi(2005)

33 Rachel Brewster, CAN INTERNATIONAL TRADE LAW RECOVER? WTO DISPUTE SETTLEMENT: CAN WE GO BACK AGAIN? (Aug. 20,2020,11.40PM)https://www.google.com/url?sa= t&rct=j&q=&esrc =s&source=web &cd=&cad=rja&uact=8 &ved=2ah UKEwiwj 6enp97r AhXszT gGHXo KARs QFjA BegQ IChA E&url=https%3A%2F%2Fwww.cambridge.org%2Fcore%2Fjournals%2Famerican-journal-of-international-law%2Farticle%2Fwto-dispute-settlement-can-we-go-back again%2FBA9985348C5BE20F8EF11FD620A48BEF&usg=AOvVaw0t_d0VTxF1 yYssFDQjc2xr

JUSTIFIABILITY OF EXPORT RESTRICTIONS IN TIMES OF COVID-19 UNDER THE WTO REGIME

Ms. Shivani Rajesh*

ABSTRACT

Since the detection of the first case in December 2019, the world is grappled with the novel coronavirus, which is declared as a public health emergency by the WHO. The ramifications of the pandemic have penetrated international trade with as many as 80 countries having declared export restrictions on a variety of goods to the likes of medical supplies and equipment, foodstuffs, etc. The exports have been restricted supposedly to prevent a critical shortage at the national level. Apart from the fact that these export restrictions result in destruction of food security, sudden spike in price of products, non-availability of medical supplies, etc., they also violate Article XI of the GATT, 1994. Article XI prohibits export restrictions except in cases where the restriction is to deal with critical shortage of foodstuffs and essential products at the national level. For the exception, of critical shortage to apply, the shortage must occur before restrictions are imposed andprecautionary measures do not qualify this requirement. Additionally, Article XX of the GATT allows for export restrictions if they are necessary to protect human, animal or plant life or health subject to the fact that the restrictions are not arbitrarily or unjustifiably discriminatory in nature. Additionally, Article XXI of the GATT allows for trade restrictions in cases of emergencies, however, the entire issue of whether the pandemic would qualify as an emergency in the light of national security is debatable. The exceptions carved out under the WTO regime which allows violations of certain WTO obligations are to be administered only in exceptional cases and must be targeted, proportionate, transparent and temporary to ensure that they do not result in a disguised restriction on trade. This paper intends to

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analyze the effect of these export restrictions and its justifiability under the aforementioned exceptions.

Key Words: ETO,GATT, Trade, Export restrictions

INTRODUCTION

International trade includes the import and export of various goods. Based on skewed mercantilist logic, every country persistently tries to increase its exports as it leads to an inflow of steady income and boosts the exporting country's domestic industries. Imports on the other hand are constantly restricted and limited as it may lead to loss of foreign exchange and might negatively affect the country's domestic industry. In the light of this, the COVID 19 pandemic has completely changed the face of the basic tenets of international trade. In the current situation, since the beginning of 2020, multiple measures are undertaken by the WTO members, which intend to restrict the exports of certain goods and to reduce the restrictions on imports. The reason behind this is the intention of the panic-stricken countries to ensure that shortage of supply of essential commodities such as various medical supplies and foodstuffs does not occur during the course of the pandemic.

The velocity with which the COVID 19 virus has spread across various nations is truly worrisome as it has already infected around 11 million people around the world and caused the death of more than 5 lakh people. Most of the governments across the world declared lockdowns and curfews in order to restrict the movement and gathering of people to protect them from contracting thehighly contagious virus. The outbreak of the virus lead to a situation wherein the demand for many commodities especially the medical equipment such as PPE kits, face masks, hand sanitizers, etc. was at an all time high and the manufacture and supply of such commodities was taking a hit. The manufacturing and supply of commodities was majorly affected due to labour shortage as many of them were falling sick and the rest were having a tough time reporting to work as a result of the containment policies. Additionally, there were multiple instances of breakage of supply chains due to logistic difficulties within the countries as well as at the border level.

Under such circumstances, instead of increasing international cooperation to improve the manufacture and supply deficit, most of the countries resorted to protectionist policies. The ultimate result was multiple countries imposing export restrictions on various medical equipment and foodstuffs in order to ensure that the draining of these commodities in the global markets is restricted and these essential commodities are first made available to the nationals of the producing countries.[1]

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1 See, WTO Secretariat, Information Note, Export Prohibitions and Restrictions, 23 April 2020. Available at: https://www. wto.org/ english/tratop_ e/covid19_ e/export_ prohibitions_report_e.pdf

EXPORT RESTRICTIONS IMPOSED BY WTO MEMBERS

Most of the countries around the world are using export restriction to prevent the exports of medical equipment such as ventilators and medical supplies such as facemasks, face shields, personal protection equipment, etc. One of the major restrictions on exports is imposed by the European Union[2]. The imposition of restriction by the EU is appalling majorly due to the fact that the EU has always been a vehement supporter of trade liberalization and free trade.However, in March 2020, EU came up with a notification, which restricted the exports of certain commodities by subjecting it to export authorization by the member states.[3]

The imposition of restrictions by theEU was the major catalyst in the domino effect that ensued wherein many other WTO members also started imposing export restrictions on a variety of products usually falling under the category of essential commodities during the pandemic. For instance, Indonesia imposed a temporary ban on the export of facemasks, sanitizers and other medical equipment.[4]India imposed a restriction on personal protective equipment as well as on certain drugs such as the hydroxychloroquine.[5] The United States imposed rules, which subjected the export of medical supplies to the approval of the Federal Emergency Management Agency in order to ensure that the scarcity of these products is dealt with in such a manner that it is first made available to the domestic population.[6] In addition to these, as many as 80 countries have imposed restrictions either by imposition of an outright ban on exports or by subjecting it to the authorization of a certain authority in order to ensure that domestic availability of these resources is not hampered.[7]

In addition to the restrictions on export of medical supplies and equipment, multiple countries started undertaking export prohibitions on various foodstuffs as well. On 22nd March 2020, Kazakhstan, one of the major exporters of wheat, banned all its exports.[8] Vietnam declared an export ban on rice until the authorities gathered information regarding the country's

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2 Hereinafter referred to as 'the EU'

3 European Union, Press Release,Commission moves to ensure supply of personal protective equipment in the European Union, 15th March, 2020.Available at:https: //ec. europa. eu/ commission /presscorner / detail/en/ip_20_469

4 "Indonesia to Ban Face Mask Exports to Ensure Domestic Supply", Reuters, 13 March 2020 Available at: https: // www. reuters. com/article/us-health-coronavirus-indonesia-masks/indonesia-to-ban-face-mask-exports-to-ensure-domestic-supply-idUSKBN2100JB

5 WTO member's notification on COVID-19, WTO (July 2020) https://www.wto.org/english/tratop_e/covid19_e/trade_related_goods_measure_e.htm

6 Ibid.

7 Supra, note 1.

8 "Countries Starting to Hoard Food, Threatening Global Trade", Bloomberg, 25 March 2020. Available at: https: //www. bloomberg. com/news/articles/2020-03-24/countries-are-starting-to-hoard-food-threatening-global-trade

stock of rice.[9]This was followed by Cambodia imposing an export ban on all fragrant rice.[10] Kyrgyzstan implemented restrictions on export of wheat, wheat flour, cooking oil, rice, chicken eggs, iodized salt, sugar, etc. to achieve a similar objective of ensure availability of these commodities at the national level.[11] In addition to these countries, the Romanian government imposed an export ban on wheat, corn, rice, sunflower seeds, other grains, etc. and this was opposed by the EU as not being proportionate.[12]Russia has also imposed an export quota on the export of wheat.[13]

JUSTIFIABILITY OF THE EXPORT RESTRICTIONS

The export restrictions basically refer to a situation wherein the countries resort to quantitative regulation in order to restrict the export of certain commodities. These can be in the form of licensing requirements, export prohibition or ban, setting up of export quota, etc. These quantitative regulations, which intend to harm free international trade, are expressly prohibited under Article XI of the General Agreement on Tariffs and Trade, 1994 (Hereinafter referred to as 'GATT')

ELIMINATION OF QUANTITATIVE RESTRICTIONS

Article XI of the GATT generally provides for an elimination of quantitative restrictions imposed by the WTO members in order to ensure free trade. A measure imposed by a country can be challenged under Article XI if the existence of two components are proved: (i) if the measure falls within the scope of the phrase 'quotas, import or export licenses or any other measures, and, (ii) the measure constitutes a prohibition or restriction on the importation or on exportation of any product.[14]

In the current circumstances, the measures discussed above fulfill the first component wherein, the export bans, exports subject to authorization and export quotas will fall within the scope of quotas and other measures. The second component of the measure constituting a prohibition or restriction on exportation can also be fulfilled in the current set of export restrictions. To fulfill the second component, the measures must have a limiting effect on the

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9 Ibid.

10 "Rice-ing concern: COVID-19 creates supply and price volatility for Asia's most 'cost-sensitive' crop", Foodnavigator-asia.com, 22nd April 2020. Available at: https://www.foodnavigator-asia.com /Article/ 2020/04/22/Rice-ing-concern-COVID-19-creates-supply-and-price-volatility-for-Asia-s-most-cost-sensitive-crop#

11 Supra, note 5.

12 "EU Objects to Romania's Move to Ban Agriculture Exports", Bloomberg, 11 April 2020. Available at: https: // www. bloomberg. com/news/articles/2020-04-11/eu-objects-to-romania-s-move-to-ban-agriculture-exports

13 Supra, note 5.

14 Appellate Body Report, Argentina - Measures Affecting the Importation of Goods - Understanding between Argentina and the European Union regarding procedures under articles 21 and 22 of the DSU WT/DS438/24 adopted on 20 January 2016, paras. 5.216-5.218.

quantity or amount of exports. [15] Most of the export restrictions during the pandemic have been in the form of total export bans or restrictions subject to authorization. Both these restrictions are imposed in order to ensure that the domestic availability of such commodities by limiting the exports to other countries. Thus it can be concluded that the export restrictions imposed by the countries during the pandemic will violate Article XI:1 of the GATT.

The 'Carve Out' under Article XI:2(A)

Most of the countries will not argue against the fact that export restrictions imposed by them do not violate Article XI:1 of the GATT. This is evident from the fact that some of the countries who have notified the WTO regarding the export restriction have justified such restrictions as valid under Article XI:2(a) of the GATT. This provision limits the application of Article XI:1 and states that it shall not be applicable in a scenario wherein the export restriction is temporarily imposed in order to prevent or relieve critical shortage of foodstuffs and other products essential to the exporting country. In order to examine whether the current export restrictions fall under this justification, it has to be ensured that the current export restrictions are 'temporarily applied' and 'for the purpose of preventing or relieving critical shortage of foodstuffs and other essential products'.

The Appellate Body's report in China – Raw Materials case is the Holy Grail for interpreting the'carve out' provision under Article XI:2(a). In this case, the term essential product refers to foodstuffs or other products that are 'absolutely indispensable or necessary'.[16] The current restrictions are imposed on products ranging from medical equipment, medical supplies, certain pharmaceutical drugs and foodstuffs. All of these qualify as essential products in the current situation wherein the world is grappling with a global public health emergency.

The term temporarily applied is interpreted to mean a measure 'applied for a limited time, a measure taken to bridge a passing need'.[17] The current measures may fall under this category as most of the measures are imposed with an intention to apply it temporarily wherein the countries have also including a sunset clause in the notification of such measures. However, many countries have extended the application of these measures way beyond what was mentioned in the original notification by filing subsequent notifications. It must be noticed here that it has been more than 6 months that the COVID 19 virus has terrorized the world and until today, no vaccine or a cure has been found to tackle the same. Additionally, based on the

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15 Appellate Body Reports, China - Measures Related to the Exportation of Various Raw Materials - Understanding between China and the United States regarding procedures under articles 21 and 22 of the DSU WT/DS394/20 adopted on 23 January 2013, paras. 319-320

16 Supra, note 15. Para. 326

17 Ibid, para. 323.

implications of the restrictions, it does not seem like the situations with respect to production and supply of the medical commodities will increase in the near future. This raises questions as to whether the restrictions, are truly for a limited period of time and whether the effects of COVID 19 can be considered to be a situation of a passing need? This can be answered only when a dispute is brought before the WTO dispute settlement body.

Lastly, the question is whether the situation in the current scenario qualifies to be one where there is a critical shortage of the medical supplies and foodstuffs. The term "critical shortages" in Article XI refers to those deficiencies in quantity that are crucial, that amount to a situation of decisive importance, or that reach a vitally important or decisive stage, or a turning point.[18]Thus, it can be argued that to justify a measure under this carve out, the critical shortage must either be shown or a high likelihood of the critical shortage must be made out which demands the imposition of the export restrictions. However, many countries are imposing these restrictions as a knee-jerk reaction to the pandemic without even taking stock as to whether the commodities which are restricted are deficient. Romania was one of the countries which imposed a restriction on certain foodstuffs without having any evidence to show that there is a critical shortage or possibility of a critical shortage situation with regards to those foodstuffs.[19] Additionally, even Vietnam imposed ban on export of rice until further information is gathered regarding the stock of rice within the country.[20] Once again, a question that arises here is whether the countries can justify these restrictions under Article XI:2(a) without even looking into whether the commodities are actually in a position of critical shortage. This move on the part of most countries simply seems to be a tactic to engage in protectionist policies by resorting to hoarding.

Exception Under Article XX(b)

The next exception available for the countries to prove that the measures imposed by them which violate Article XI:1 are justified is under the general exception clause of the GATT. More particularly, Article XX(b) which allows the countries to derogate from their GATT obligations by adopting a measure necessary to protect human life or health is resorted to majorly by the EU to justify their export authorization measure.[21]

In order to bring a trade restrictive measure under the ambit of Article XX(b), the defending country will have to prove that the measure was 'necessary' to protect human health and life.

In order to prove that a measure is necessary under Article XX(b),

18 Ibid para. 324.
19 Supra, note 12.
20 Supra, note 8.
21 Supra, note 5.

weighing and balancing technique is undertaken with respect to: (i) importance of the health objective pursued, (ii) contribution made by the measure to the health objective, (iii) the measures trade restriveness. The first component which has to be checked is the importance of health objective pursued and it is considered to include those objectives that are both vital and important in the highest degree.[22] In the current situation, the purported health objective that the countries want to achieve is protection of public health by ensuring that all the medical supplies and equipment are available for domestic use. This seems to be vital and of highest importance.

The second component requires the analysis of the contribution made by the export restriction on the domestic availability of the commodities. This contribution can be gauged by a qualitative or quantitative analysis.[23] As already discussed earlier, the proof that the export restriction will increase domestic availability of the restricted commodity is not available. In fact, a more likely scenario of achieving increase in domestic availability of the commodities is by international cooperation. However, based on quantitative evidence it can be proved by the members that the imposition of restrictions did increase the domestic availability of those commodities.

The third component is testing the trade restrictiveness of the measure. A corollary of this component is the possible availability of reasonable alternative measures which are less trade restrictive.[24] If it can be shown that the measure undertaken was extremely restrictive and there was a possibility of imposing another reasonable measure which was less restrictive, then the more restrictive measure may fail to fall under the Article XX(b) exception. Once again, it can be argued here that the EU's approach of requiring export authorization, is a better measure than a complete export ban as it is less trade restrictive. Thus, an absolute export ban might not fulfil this component however, a parties restriction such as authorization requirement or an export quota (as imposed by Russia) might be justifiable. However, it has to be noted that fulfillment of all the abovestated components is not necessary for a measure to be necessary. The above components will essentially be weighed against each other to examine whether the measure is necessary or not. Thus, certain measures may be justifiable under this exception while the others might not, depending upon the circumstances surrounding the imposition of the restriction.

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22 Appellate Body Report, Brazil – Measures Affecting Imports of Retreaded Tyres, WT/DS332/AB/R, adopted 17 December 2007, para. 179.

23 Ibid, para. 146

24 Ibid, paras. 139-143.

ALTERNATIVE JUSTIFICATION FOR THE EXPORT RESTRICTIONS

The export restrictions imposed by the countries until now include justifications under Article XI:2(a) and Article XX(b) which has already been discussed. There are two more provisions that might be resorted to while justifying the export restrictions during COVID 19 pandemic. The first one is the exception under Article XX(j) which provides for derogation from WTO obligations in case of general or local short supply and the second one is the security exception provided for under Article XXI of the GATT which allows the members to derogate from the WTO obligations in case of emergencies of international nature.

Measures Essential To Address General Or Local Short Supply

Article XX(j) provides for a framework wherein the WTO obligations can be violated by the members by introducing measures for the purpose of acquisition or distribution of commodities affected by a general or local short supply. Under this provision, the measure has to fulfil the following components, namely, (i) the measures must be with regards to an essential commodity, (ii) the measure must be for the acquisition or distribution of this commodity which is in general or local short supply, (iii) the measure must be consistent with the WTO principle that all WTO members are entitled to an equitable share of international supply of the essential commodity and (iv) as soon as the short supply ends, the measure must be discontinued.

This exception is very similar to the Article XI:2(a) carve out provision, except that, under the carve out provision, critical shortage of essential commodities, mostly from a local perspective had to be proven whereas in case of Article XX(j), a simple general or local short supply is enough to justify the measure. This means that even if the essential commodity is not in local short supply, the country may impose a restriction by proving that there is an international short supply of the commodity.[25] This imposes a simpler burden on the member to justify their export restriction. In fact, Article XX(j) was retained in the GATT as well with the intention 'to meet emergency situations which may arise in the future' such as a natural catastrophe similar to the pandemic.[26]

In addition to the lower burden for proving the short supply of essential commodity, another advantage of Article XX(j) is that it does not require a critical shortage of essential commodities for the exception to apply. Thus, the shortage to be proven under Article XX(j) is more narrowly circumscribed than those under Article XI:2(a).[27]

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25 See GATT Analytical Index, Article XX, at p. 593, https:// www.wto.org/english/res_e/publications_e/ai17_e/gatt1994_e.htm.

26 Ibid.

27 Supra, Note 15, para. 325.

However, there are two downfalls to this exception. Firstly, Article XX(j) allows only for the imposition of a restriction in case of a current short supply and a preventive measure to dodge future short supply cannot be provided for by way of a measure.[28] This downfall may not be of a critical nature in case of the COVID 19 pandemic as it can almost be stated with certainty that there is a general short supply of medical equipment and supplies. The second downfall is of major significance as Article XX(j) requires the measure to comply with the WTO principle that all members are entitled for equitable share of international supply of the essential commodity. This condition may not be fulfilled if a major exporter of medical equipment or supplies imposes an export restriction as he will essentially divert the international supply to his domestic market thereby going against the condition under Article XX (j).[29] However, a small time exporter of these medical supplies and foodstuffs may be able to take the benefit of this exception to justify the export restrictions imposed by it.

National Security Exception

Article XXI of the GATT is another provision that may be resorted to by the members for justifying an export restriction. This provision allows the WTO member to take any action which it considers necessary for the protection of its essential security interest including action taken at the time of war or other emergency in international relations. A prima facie understanding of this provision will make it clear that a global pandemic is not a state of war nor any export restrictions undertaken in its pursuance can qualify to be for the protection of national security. However, Article XXI affords a major benefit to the WTO members by way of deference awarded to them for deciding which action may be considered as necessary for the protection of its national security interest. This means that the member itself gets to decide what according to them is the appropriate action to be taken in a given situation of security interest.

The two components which have to be gauged under this exception is firstly, whether the pandemic will qualify to be an emergency in international relations and secondly, whether the domestic availability of medical equipments and food stuffs can be considered as a matter of essential security interest for the state in accordance with the Chapeau of Article XXI.

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28 Panel Report, European Union and its Member States - Certain Measures Relating to the Energy Sector adopted on 10th August 2020, para. 7.1348

29 A 1950 GATT Working Party found that "if a [WTO Member] diverts an excessive share of its own supply [e.g. of face masks] to individual countries … this may well defeat the principle that all [WTO Members] are entitled to an equitable share of the international supply of such a product". See, The 1950 Report of the Working Party on The Use of Quantitative Restrictions for Protective and Other Commercial Purposes (GATT/CP.4/33, at p. 3)

In order to justify a measure under Article XXI (b) (iii), there should be an emergency in international relations. Generally, in the light of the heading of Article XXI 'Security Exceptions' it seems that the term emergency refers to a situation revolving around armed conflict.[30] However, considering the generality of the term emergency in international relations, it will not be completely erratic to include actorless risks such as a pandemic as a novel security threat.[31] In addition to this, the USA has included combatting pandemics in their national security strategy.[32] Russia has followed suit and mentioned pandemics amongst the threat to national security in the public health sphere.[33] Additionally, Ebola was declared as a threat to international peace and security by the United Nations Security Council.[34] Thus it will not be preposterous in the light of the above arguments to state that COVID 19 pandemic is an emergency having a bearing on international relations.

Whenever a security exception is invoked by a WTO member, two burdens must be fulfilled by the member. Firstly, the member must define essential security interest in good faith and secondly, adopt measures for protection of these security interest in good faith, that is, the measures must be plausible to meet the goal of ensuring security interests are protected. [35] The question here is, firstly, can domestic availability of medical equipment and foodstuffs be considered as essential security interest. It can be argued by the states that a situation of pandemic threatens the lives of the people within a country and in the absence of medical equipment, supplies and foodstuffs, the lives of the people are at stake to a great extent. In any welfare state, it becomes the imperative of the country to ensure that adequate health facilities are available for its people and feeding its population also becomes one of its functions. Under such circumstances, if these commodities are not made available for its nationals, they will lose their lives and in this situation, it becomes imperative upon the government to provide security to its people even if it requires imposition of strict export restrictions at the international level.

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30 Panel Report, Russia - Measures Concerning Traffic in Transit, adopted on 5th April, 2019, para.7.76

31 J. Bentonheath, The New National Security Challenge to the Economic Order, 129 YALE LAW JOURNAL 1020, 1034 (2020).

32 National Security Strategy of the United States of America, p. 9 (2017). Available at: https://www.whitehouse.gov/wp-content/uploads/ 2017/12/NSS-Final-12-18-2017-0905.pdf

33 Viktoriia Lapa, 'GATT Article XXI as a way to justify food trade restrictions adopted as a response to COVID-19?', Regulating for Globalization, 10/04/2020. Available at: http:// regulating forglobali zation.com/2020/04/10/gatt-article-xxi-as-a-way-to-justify-food-trade-restrictions-adopted-as-a-response-to-covid-19/

34 Resolution 2177 (2014) Adopted by the Security Council at Its 7268th Meeting, on 18 September 2014 (United Nations Security Council). Available at: http://unscr.com/en/resolutions/doc/2177

35 Supra, note 30.

IMPLICATIONS OF THE EXPORT RESTRICTIONS

It can be concluded from the above stated arguments that although, many hurdles exist in justifying the export restrictions under the WTO regime, it is not absolutely impossible to justify the measures. Under such circumstances, it becomes necessary to analyze the actual implications of these export restrictions if we accept that some of the restrictions might be justifiable.

The onset of the COVID 19 pandemic is a public health emergency and it has led to an organic increase in the demand for medical supplies and equipment. The countries have identified that the pandemic can hit them at any point of time and it is the intention of every country to ensure that when the virus is affecting the nationals the most, the huge demand for the essential medical equipment and supplies must be met.In order to achieve this, rather than increasing global cooperation, countries around the world have chosen export restrictions that are imposed in order to prevent the medical equipment and supplies from leaving the domestic market. This circumstance is similar to a situation of hoarding and such hoarding of essential medical equipment has multiple economic disadvantages.

It is undisputed that the export restrictions will lead to a situation wherein, due to the large scale availability of the commodities at the national level, the prices of these commodities will decrease, thereby helping the countries provide healthcare to a large number of people at an affordable price.[36] However, it will lead to a scarcity of these commodities in the countries where the availability of these commodities are dependent upon the imports from the exporting countries that have now restricted their exports. This is a huge possibility due to the fact that for the past 70 years continuous efforts have been undertaken to liberalize trade and in many aspects, global interdependence accepted in order to meet various countries' local demands for various products. The only option remaining with these countries is to bolster the domestic production of such commodities however, most of the dependent countries who are not in position to do the same. Thus, from a global justice point of view, these export restrictions fall short as the export restriction prevents the dependent country from accessing the global market for imports of medical supplies and equipment.

Production of medical commodities around the world requires various inputs in the form of raw materials. Due to lack of self-sufficiency, global supply chains are relied upon wherein the inputs required for the production are supplied by various countries. An excessive export restriction on the medical commodities may result in counter-restrictions on the inputs by the other countries forming a part of the supply chain. Under such circumstances, the country, which imposed the export restriction on the

36 Supra, note 1.

medical commodity, might be left to no scope to manufacture more of the commodities, as their supply chain will be cut off. This has happened in case of the Romanian restriction on export of inputs required to manufacture hospital ventilators.[37] Switzerland is one of the major manufacturers of hospital ventilators, which is an essential import for the EU to fight the COVID 19 virus. It is being complained that due to Romania's restriction on export of inputs required to manufacture ventilators, Switzerland's ventilator manufacturing has suffered a shock. In this circumstance, the EU's import of ventilators from Switzerland will be greatly affected due to lack of interdependence between the two countries.

The export restrictions will also end up discouraging the domestic producers from diversifying and producing more since their major source of income, the exports, will be cut out. The domestic producer of the medical commodity will also not be able to profit much out of the sale of the commodity at the domestic level because restricting exports will result in more quantity available for domestic sale, which will reduce the cost. Under such circumstance wherein the domestic prices are going down and the international prices are increasing due to shortage of supply, there might be instances where the medical commodities are smuggled out of the country and sold in the foreign market. The two circumstances mentioned above, that is, discouragement to produce and diversify more and smuggling of goods will ultimately again lead to lower availability of these medical commodities in the domestic market.

Furthermore, many countries have imposed the export restrictions by subjecting the exports for authorization by the national export authority.[38] These restrictions will result in wasteful expenses for filing of documents and employing agents to obtain the authorization.[39] Such wasteful expenses are particularly problematic in the current circumstances as ideally all the financial resources of these medical commodities manufacturers and suppliers must be concentrated in increasing the production of the essential medical commodities itself and to undertake research and development to produce better drugs and medical equipment.

The export restrictions imposed by various countries started off with restrictions on medical commodities and supplies. However, very recently, multiple countries such as Russia, Kyrgyzstan and Vietnam have decided to introduce restriction in the export of foodstuffs as well.[40] These restrictions

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37 Chad Bown, EU limits on medical gear exports put poor countries and Europeans at risk, PIETERSON INSTITUTE FOR INTERNATIONAL ECONOMICS, 19 March 2020. Available at: https:// www.piie. com/blogs/trade-and-investment-policy-watch/eu-limits-medical-gear-exports-put-poor-countries-and

38 Such type of export restrictions are imposed by Brazil, the EU and the USA.

39 Supra, note 37.

40 Supra, note 5.

prove to be a grave threat to the food security regime that is developed at the international level wherein most of the agriculturally backward countries are completely dependent upon import of foodstuffs for ensuring that their population has access to sufficient, safe and nutritious food.[41] In addition to this dependency, the world exports in agricultural products are highly concentrated.[42] Under such circumstances, the export restrictions imposed by these countries raise major concerns with respect to the global food security. This situation can be compared to the 2007-2008 food crisis during which there was a humongous upward trend in the prices of foodstuffs at the international level majorly due to the export restrictions imposed by various countries. The critical shortage of food during this period could have been stabilized by further liberalizing free trade in foodstuffs, however, the export restriction imposed during this time to insulate the domestic market from the increasing food prices led to the critical shortage being blown into a full fledged crisis.[43]

Lastly, one of the major implications of these export restrictions have been the fact that the countries do not strictly follow transparency regulations with regards to the restrictions. Ideally any export restrictions imposed by the WTO members needs to be notified as soon as possible to the WTO pursuant to the 2012 "Decision on Notification Procedures for Quantitative Restriction"[44]. The purpose of this transparency requirement is to afford the economic operators and members a certainty with respect to their international trade status.[45] However, only 13 countries had notified the WTO regarding the export restrictions undertaken as a result of the COVID 19 pandemic and only after being repeated urged by the WTO Director General, Robert Azavedo.[46] In the absence of these notifications, the countries will not even be aware of which exports are blocked and where provision should be made for adjustment of their purchases and supply decisions.

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41 Food security, WORLD TRADE ORGANIZATION. Available at: https: //www.wto.org/english/tratop_e/agric_e/food_security_e.htm

42 Russia and Kyrgyzstan are countries which two of the major exporters of wheat along with the EU, the USA, Canada and Ukraine. Vietnam is one of the major exporters of rice as it contributes to 16% of the total rice exports in the world.

43 Derek Headey And Shenggen Fan, REFLECTIONS ON THE GLOBAL FOOD CRISIS: HOW DID IT HAPPEN? HOW HAS IT HURT? AND HOW CAN WE PREVENT THE NEXT ONE? 96 (Intl Food Policy Res Inst, 2010)

44 Decision Adopted by the Council for Trade in Goods on 22 June 2012, official WTO document G/L/59/Rev.1 Available at: https: // www. wto.org/ english/tratope /markacc_e/qr_e.htm (Hereinafter referred to as the QR decision)

45 Supra, note 1.

46 Ibid.

CONCLUSION

"A crisis without borders cannot be resolved by putting barriers between us. And yet, this is exactly the first reflex that many European countries had. This simply makes no sense. Because there is not one single Member State that can meet its own needs when it comes to vital medical supplies and equipment. Not one." - President of the EU Commission Ursula von der Leyen

The abovestated words of the President of EU commission reverberate the importance of having a global response to the pandemic.However, as stated above, most of the countries have resorted to protectionist policies and closed their borders for exports. Due to the exceptional nature of the crisis, it is very likely that some countries may be able to successfully justify the restrictive measures under one of the above stated exceptions. An in depth analysis of the justification of these export restrictions imposed by the members highlights a gaping hole in the WTO regime which allows such restrictive measures to be undertaken in situations where utmost cooperation is needed.

One of the ways in which this problem can be cured is by introducing a provision which shall kick in during a global crisis such as the current one. This provision shall essentially exclude the possibility of the members bringing about trade restrictive measures in circumstances which clearly demand global cooperation.[47] This idea basically provides for an inverse to the GATT exceptions which are allowed for the purpose of maintaining a balance between free trade and protectionism. It is suggested that certain specific situations will be identified as global crisis, for instance, pandemics or climate change, and provisions should be adopted by the member countries to exercise utmost cooperation while tackling with these situations in order to ensure that protectionist attitude of some countries do not exacerbate the global crisis.

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47 Mona Pinchis-Paulsen, COVID-19 Symposium: Thinking Creatively and Learning from COVID-19 — How the WTO can Maintain Open Trade on Critical Supplies, Opinio Juris, April 2, 2020.

ENFORCEMENT MECHANISMS OF WHO REGULATIONS IN GLOBAL PANDEMIC: A LEGAL PERSPECTIVE

Ms. Jean Vinita Peter*

ABSTRACT

The International Health Regulations (IHR) was adopted more than half a century ago by the WHO in the back drop of an international concern in global health governance. The increase in international travel and trade and the emergence, re-emergence and spread of disease and other threats necessitated a substantial revision of International Health Regulations (IHR). Acknowledging the need to expand the scope to include new epidemics and to facilitate global coordination the Regulations were revised in 2005 which came into force in 2007. IHR remains the global legislation in helping countries for the global control of infectious disease epidemics. One of the major changes brought about by the 2005 Regulations was the mandate requiring State parties to notify the WHO of events that may constitute a Public Health Emergency of International Concern (PHEIC) and to respond to requests for verification of information about these events. The 2005 Regulations stipulates the member states to develop and strengthen certain core capacities. Hence, it is the need of the hour when the world is facing a global health crisis due to the outbreak of the novel coronavirus disease 2019 that we analyse to what extent the member countries have been able to achieve the Core Capacities and to examine the socio-economic, political and other legal hurdles which impede the implementation of the IHR and the short comings in the State's adherence to law. This paper seeks to examine whether the WHO is armed with appropriate enforcement mechanisms to ensure the implementation of its Core capacities and Principles coupled with an analysis of Human Rights dimensions of the Regulations.

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Key Words: WHO, IHR, Pandemic, Health

INTRODUCTION

The years 2019 and 2020 will go down in history as the world goes through one of the worst health crisis it has ever witnessed in about a century. The Novel Corona Virus or Covid-19 as it is termed by the World Health Organisation (WHO) has affected over 213 countries in the world taking the death toll to over 5 lakhs across the globe in a span of 4 months. In this period of a global health crisis, the world community focuses on WHO, the lead international institution which occupies a pivotal position in global health governance and the International Health Regulations (IHR) as a means of strengthening global security and cooperation. Thus, an attempt is made to analyse the efficacy of the WHO and IHR in fighting the global pandemic.

On March 11, 2020, the World Health Organization ("WHO") declared a global pandemic of COVID-19, a respiratory disease spread by airborne pathogens from the coronavirus family. Infecting nearly 1,500,000 individuals across 184 countries as of April 9, 2020, and killing over 90,000 worldwide, COVID-19 has tested the tools of global health governance that are designed to protect populations.[1]

Globalization facilitates the worldwide spread of diseases. Recently, Ebola throughout Western Africa, and Zika in Latin America and the Caribbean gave rise to fears in countries far removed from the affected region.[2] The international community relies on the World Health Organization (WHO) to combat diseases. The WHO is tasked to attain the highest possible level of health for all peoples (art. 1 WHO-Constitution).[3] The WHO has some legal means at hand to work in that direction. One unique feature of the WHO law is that it has the authority to issue legally binding regulations (art. 21 WHO-Constitution).[4] A Convention adopted under this provision comes into force after all members are given due notice of its adoption (art. 22 WHO-Constitution). The only way for a state to opt out of such a binding agreement is to notify the Director-General of WHO of the state's rejection or its reservation.[5]

HUMAN RIGHTS PERSPECTIVE ON HEALTH

International human rights law also plays an important role in international health law. Given that international health law is aimed at the

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1 Lauren Tonti, The International Health Regulations: The Past and the Present, But What Future? (July 03, 2020, 12.45 pm) https://harvardilj.org/2020/04/the-international-health-regulations-the-past-and-the-present-but-what-future/

2 Robert Frau, Creating Legal Effects for the WHO's International Health Regulations (2005), (July 03,2020, 11.15 am) https://voelkerrechtsblog.org/creating-legal-effects-for-the-whos-international-health-regulations-2005-which-way-forward/

3 Id.,

4 Id.,

5 Id.,

protection of health, the most important human rights norm is the 'right to the highest attainable standard of health', in short, the 'right to health'. The right to health features as a core standard in the field of international health law, as it places the emphasis on the protection of individual health worldwide, and because it emphasises the need to strive for equity in health.

The basic human right to health has been recognized as part of the right to an adequate standard of living conducive to living a life in dignity in the 1948 Universal Declaration of Human rights. The Specific rights that form the corpus of human rights law are found in the international human rights document. The Economic, Social and Cultural rights include among others, the rights to the highest attainable standards of health, to work, to social security, to adequate food, to clothing and housing, to education, and to enjoy the benefits of scientific progress and its applications.[6] The right to the highest attainable standard of health is implicit in these documents and nearly every article of every document have clear implications for health.[7]

The human right to health should be understood in the first instance with reference to the description of health set forth in the preamble of the WHO Constitution and repeated in many subsequent documents. [8] Health as defined in the Preamble of the WHO Constitution is a "state of complete physical, mental and social well-being and not merely the absence of disease or infirmity".[9] Rights relating to discrimination, autonomy, information, education and participation are an integral and indivisible part of the achievement of the highest attainable standard of health, just as the enjoyment of health is inseparable from that of other rights, whether categorized as civil, political, economic, social or cultural.[10] The WHO recognized that the enjoyment of the highest attainable standard of health was one of the fundamental rights of every human being and that governments have a responsibility for the health of their peoples, which can be fulfilled only through the provision of adequate health and social measures.[11]

In 1998, a World Health Assembly Resolution set out the need to " promote and support the rights and principles, actions and responsibilities enunciated in the through concerted action, full participation and partnership, calling on all peoples and institutions to share the vision of health for all in the twenty first century and to endeavour in common to realize it." Following this resolution, in the year 1999, the WHO initiated a rights based approach with the aim of defining the goals of human rights

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6 PUSHPALATA PATTNAIK, PUBLIC HEALTH, LAW, ETHICS AND HUMAN RIGHTS, 52 (2013, Black Prints India, 2013.
7 Id., At 53.
8 Id.,
9 Id.,
10 Id.,
11 Id., At 69.

mainstreaming for their national and international health work.[12]

In the strategic framework laid down by WHO in its 1999 corporate strategy, the issues relevant to health development lie along four converging axes: Reducing excess mortality, morbidity and disability, especially in poor and marginalized populations; Promoting healthy lifestyles and risk reducing factors to human health that arise from environmental, economic, social and behavioural causes; Developing health systems that equitably improve health outcomes, respond to people's legitimate demands and are financially fair; and Developing an enabling policy and institutional environment in the health sector and promoting an effective health dimension to social, economic, environmental and development policy.[13]

A human rights based approach would be the most comprehensive approach in the present day to fight against a global pandemic.

WHO: THE GUARDIAN OF GLOBAL PUBLIC HEALTH

Global governance on health took a concrete shape after World War II. Health was part of international law on communicable diseases, armed conflict, labor, trade, and the environment. New concepts and concerns appeared with the 1948 establishment of the World Health Organization (WHO) as the UN specialized agency for health. WHO defined health broadly and defended the highest attainable standard of health as a fundamental human right.[14] Moving away from a treaty-based approach, WHO operated as a scientifically grounded, technically focused institution guided by a humanitarian ethic that viewed health as central to human dignity. Instead of binding rules of international law, it mainly developed "soft law" norms.[15]

INTERNATIONAL HEALTH REGULATIONS (IHR): THE GLOBAL LEGISLATION ON PUBLIC HEALTH

The International Health Regulations (IHR) is a multinational agreement that binds 196 member states to monitor and report international health threats. The IHR 2005 is a legally binding instrument under Article 22 of the WHO's constitution. The IHR 2005 replaces the IHR 1969 and established a new set of rules that require member states to improve surveillance and reporting mechanisms for public health emergencies and regulate the implementation of health measures. The most important feature of the IHR 2005 is that it empowers the WHO's director-general to declare a 'public health emergency of international concern' (PHEIC) after consulting with the Emergency Committee and state parties in which the event is occurring.

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12 Id., At 68.
13 Id., At 76.
14 WHO. Const. Preamble.(July 07, 2020,6.30 pm) https:// www. who.int / governance /eb/who_constitution_en.pdf
15 David P.Fidler, The Challenges of Global Health Governance (July 03, 2020, 11.15am) http://www.jstor.com/stable/resrep24171

The 1892 International Sanitary Convention embodies some of the earliest concerted efforts of international powers to combat European cholera outbreaks under a unified framework.[16] Furthering these principles, the International Sanitary Regulations were adopted by Member States of the newly-founded WHO in 1951, later revised and renamed as the International Health Regulations in 1969.[17] The IHR of 1969 focused on six major diseases, including cholera, plague, yellow fever, smallpox, relapsing fever, and typhus. A series of illnesses across the globe prompted minor revisions to the IHR throughout the subsequent decades before the AIDS epidemic and the SARS outbreak necessitated major revisions to the IHR in 2005.[18]

The International Health Regulations were fundamentally revised in 2005 with the laudable object of ensuring global health security and cooperation and came into force in 2007. The main object of the revision is to "prevent, protect against, control and provide" a response to any "public health emergency of international concern" (art. 2 IHR, PHEIC).[19] The IHR seeks to coordinate a balanced public health response while minimizing disruption to international travel and trade and upholding human rights and mandates protocols to detect, assess and report outbreaks and require member states to implement core capacities designed to equip national disease outbreak responses.[20] Moreover, the IHR also gives the WHO's Director General the power to declare a Public Health Emergency of International Concern (PHEIC) which mobilizes co-ordinated international action. The member states assume major part of the responsibility to generate and report the public health metrics required to trigger any PHEIC notification.[21]

The scope of the International Health Regulations is "to prevent, protect against, control and provide a public health response to the international spread of disease" (article 2).[22] The scope includes an all-hazards strategy, covering health threats irrespective of their origin or source (article 1), which is distinct from the disease-specific model used in previous versions of the International Health Regulations. The intention was to incorporate biological, chemical, and radionuclear events.[23]

The 2005 revisions of the IHR broadened the IHR's scope beyond the six major diseases, aiming to encompass biological, chemical, and nuclear

16 Lauren Tonti, The International Health Regulations: The Past and the Present, But What Future? (July 03, 2020, 12.45pm)https://harvardilj.org/2020/04/the-international-health-regulations-the-past-and-the-present-but-what-future/.
17 Id.,
18 Id.,
19 Lawrence O Gostin, Mary C DeBartolo, Eric A Friedman, The International Health Regulations 10 years on: the governing framework for global health security (July 05, 2020,3 pm) https://scholarship.law.georgetown.edu/facpub/1532
20 Supra n.16
21 Supra n.16
22 Supra n.19
23 Supra n.19

incidents, as well as zoonotic diseases and food safety concerns.[24] The 2005 IHR revisions recommend best practices for international traffic at points of entry, reflecting modern globalized traffic and trade. The revisions increased the WHO's investigational capacities and encouraged the observance of human rights in protecting public health. However, the latest round of revisions, which came into effect in 2007, failed to increase the instrument's enforcement power.[25] Current enforcement mechanisms rely on public shaming techniques that highlight damaged international reputations, increased national mortality, economic disruptions, and public outrage.[26]

Furthermore, States Parties must promptly notify WHO of events that might constitute a public health emergency of international concern, with a continuing obligation to inform WHO of any updates. To guide notifications, annex 2 of the International Health Regulations contains a "decision instrument" to aid in assessing whether to notify WHO of a health event of potential international concern.[27]

The declaration of a public health emergency of international concern is the crucial governance activity of the International Health Regulations. The Director-General has sole power to declare and to terminate a public health emergency of international concern but must consider information provided by a State Party; the decision instrument; Emergency Committee advice; scientific principles and evidence; and a risk assessment of human health, international spread, and interference with international traffic.[28] If the Director-General declares a public health emergency of international concern, he must issue temporary, non-binding recommendations describing health measures that States Parties should take. [29]

Since 2007, the Director-General has declared three public health emergencies of international concern. During the 2009 H1N1 influenza pandemic, WHO declared the first ever public health emergency of international concern but was criticised for fuelling public fear and State Parties widely disregarded WHO's temporary recommendations.[30] However, in 2011, the Review Committee on International Health Regulations functioning during the H1N1 influence pandemic cautioned that the world was not prepared to respond to a severe influenza pandemic.[31]

Ebola in 2014 as well as Zika in 2016 were both regarded as Public Health Emergencies of International Concern constituting public health risk to other

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24 Supra n. 16
25 Supra n. 16
26 Supra n. 16
27 Supra n. 19
28 Supra n. 19
29 Supra n. 19
30 Supra n. 19
31 Supra n. 19

states through the international spread of disease and were declared to potentially require a coordinated international response. (art 1 IHR). During a PHEIC the WHO's Director-General may issue temporary recommendations. However, due to their character as "non-binding advice" (art. 1 IHR), states widely ignored those temporary recommendations issued during the Ebola-crisis, with devastating effects.[32]

In this context, it would be pertinent to note that the 2005 IHR though empowers the Director General of the WHO to issue temporary recommendations in the background of a public health Emergency of International Concern, the recommendations are non-binding which renders it weak rather futile. It may have the result of the state parties disregarding the recommendations or not recognizing their significance with the result that the Nations fail to take suitable health measures to prevent a catastrophe.

IHR CORE CAPACITIES

The International Health Regulations requires States Parties to develop core capacities for rapid detection and response, including for surveillance, laboratories, and risk communication—buttressed by legislation, financing, and national focal points.[33] Core capacities encompass a public health strategy of strengthening local infrastructure and systems to detect, prevent, and contain outbreaks at their source before spreading internationally. States Parties agreed to "collaborate with each other" to develop and maintain core capacities. [34]

Achievement of core capacities by all States Parties is an indisputable baseline for preparedness. The initial deadline to meet the International Health Regulations' core capacities was 2012. Even though it was extended to 2016 for 81 States Parties, only 64 States Parties reported compliance.[35] With a view to facilitating the achievement of the core capacities by the member States, in November 2014, the International Health Regulations Review Committee offered a sound roadmap in the lines of strengthen self-assessment; test capacities through simulations; promote regional and cross-regional learning; and measure performance through peer review and external assessments. Such capacity building need to go hand-in-hand with universal health coverage to achieve the Sustainable Development Goals.[36]

It is the need of the hour that the International Health Regulations should be translated into action. To achieve this, first and foremost, it is essential to establish, an "International Health Regulations Capacity Fund". The International Health Regulations (article 44) require State Parties to mobilize

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32 Supra n.19
33 Supra n.19 p.1
34 Id.,
35 Id.,At 2.
36 Id.,

financial resources to build, strengthen, and maintain core capacities. The World Health Assembly should create an "International Health Regulations Capacity Fund," refreshed every 2 years through increased assessed dues—a logical funding source in view of the fact that core capacities and international cooperation are legally binding requirements of the International Health Regulations and WHO oversees the International Health Regulations. To ensure States Parties live up to their responsibilities, the World Health Assembly could establish domestic co-financing expectations as a baseline for accessing Capacity Fund resources.[37] Alternative financing mechanisms could include the Global Health Security Agenda, the World Bank's proposed Pandemic Emergency Financing Facility, or a donors' conference. Irrespective of the funding mechanism, ensuring sustainable resources would strengthen security for all.[38]

Secondly, WHO should establish an independent peer-review core capacity evaluation system, with a feedback loop for continuous quality improvement. WHO allows States Parties to self-assess their capacities, however, most of the State parties fail to report the discharge of their obligation to develop core capacities.[39] External assessment do not meet with success due to sovereignty concerns. The way out would be for the Domestic and external experts to work constructively with governments to identify capacity gaps, develop a jointly funded roadmap, and identify measurable benchmarks for success. If evaluations consistently lead to technical and financial assistance, it is likely that the state parties' cooperation can be ensured.[40]

Third, civil society participation in reviewing core capacities should be enhanced. States Parties' reports and WHO evaluations should be open to public scrutiny to increase transparency. As with other spheres of international law, such as human rights and climate change, civil society could offer "shadow" reports to States Parties' reports and WHO evaluations and advocate for full funding of national capacities and fulfilling international obligations.[41]

IMPACT OF MEMBER STATES' LACK OF CORE CAPACITIES

Experience show that the Member States have failed to comply with IHR's core competencies. WHO's State Parties Self Assessment Annual Reporting Tool (SPAR) is criticized for lack of independent valuation.[42] Inconsistency with regard to the National evaluation of Compliance. Reasons like inadequate funding, resources or lack of will can be attributed to nations'

37 Id., At 3.
38 Id.,
39 Id.,
40 Id.,
41 Id.,
42 Supra n. 16

inhibited core capacities to effectively respond to global Covid 19.[43]

A public health emergency of international concern declaration is the public face of WHO's outbreak response. In view of the public symbolism of a public health emergency of international concern declaration, these emergency response frameworks must be integrated with International Health Regulations' processes.[44] A gradient system would not necessarily require amending the International Health Regulations. Rather, WHO could develop informal guidelines through article 11. Alternatively, the World Health Assembly could formulate a new annex in the International Health Regulations to illustrate the risk gradient. [45] Different grades must also trigger clear operational and financial responses. For example, an intermediate-level emergency could release resources from WHO's new emergency response contingency fund. A public health emergency of international concern declaration, however, would still be needed to raise the global alert, stiffen political resolve, and mobilise further resources.[46]

TRAVEL AND TRADE RESTRICTIONS: TEMPORARY RECOMMENDATIONS AND ADDITIONAL MEASURES

State and private industry disregard for WHO temporary recommendations—particularly travel and trade restrictions and injudicious quarantines—undermine the International Health Regulations. The Ebola-affected countries' health systems did not have the resources to implement WHO temporary recommendations; and States Parties, because of domestic political pressure, disregarded temporary recommendations and did not discourage private disruptions of travel and trade, such as airlines cancelling flights. Governments imposed additional measures, impeding deployment of health workers and medical supplies to the affected region.To enhance compliance, WHO should publicly request States Parties to justify additional measures and urge businesses to reconsider restrictions. WHO should publicly acknowledge States Parties and businesses that comply with temporary recommendations, while publicly naming those that impose unnecessary travel and trade restrictions.

BROADENING THE INTERNATIONAL HEALTH REGULATIONS

The International Health Regulations (article 14) requires WHO to cooperate and coordinate its activities with intergovernmental bodies, including entering into formal agreements. These agreements could focus on one-health strategies, approaches based in the connections between human, animal, and environmental health. Cooperative arrangements can help one-health strategies, such as reducing antibiotic use in animals and misuse in humans; monitoring and preventing zoological infections; ensuring secure

43 Id.,
44 Supra n.19. p4
45 Id.,
46 Id.,

handling of hazardous materials; and facilitating vaccine research. Furthermore, equitable sharing of the benefits and burdens of scientific technology is crucial. The World Health Assembly should expand the Pandemic Influenza Preparedness Framework during its upcoming review of the Framework and integrate it with the International Health Regulations.

CONCLUSIONS

After the outbreak of the Covid 19, the WHO has been subject to severe criticisms of being late in declaring a public health emergency of International concern, of failing to coordinate the procurement of personal protection equipment, diagnostic kits and other medical products, for being reluctant to recommend ban on international travel and trade and for its soft approach towards China, the country from where the Corona virus is said to have originated. However, even while blaming the WHO for its shortcomings, and the pitfalls in the IHR, it would be appropriate to note that member states of WHO take upon themselves the responsibility for diluting the purposes of IHR 2005 & thus weakening the WHO. The IHR in its present shape is the result of experiences of the past, formulated through deliberations, compromises and the felt need to expand its scope to meet graver public health emergencies to coordinate a balanced public health response with minimum disruption to international travel and trade and upholding human rights. The IHR still exists as the global health legislation for the international community to look upon in times of a catastrophe like the global pandemic of Covid 19. However, the future of the IHR remains blurred as it governs in a world where the efficacy of the WHO is questioned. Empowering WHO and realising the International Health Regulations' potential would shore up global health security—an important investment in human and animal health, while reducing the vast economic consequences of the next global health emergency.

SUGGESTIONS

The composition of the International Health Regulations Emergency Committee is a matter of concern for the member states as it is likely to be fraught with conflict of interest. Keeping in view this concern, the WHO has the obligation to disclose the names of the members of the IHR Emergency Committee as also to make transparent the transactions of the Emergency Committee.

The World Health Assembly could amend the decision instrument to reduce States Parties' reporting discretion, avoiding delayed notification or verification. Limiting States Parties' discretion could simplify decision making and reinforce the norm of early notification. Routine notifications, moreover, would reduce the risk of under-reporting.

WHO should publicly acknowledge information received from non-governmental sources, and help with unofficial reporting. Even if a State Party does not cooperate in providing information received from unofficial

sources, WHO should undertake its own analysis, sharing information transparently to the fullest extent possible in accordance with article 11 of the International Health Regulations.

States Parties should consider pursuing dispute mediation through the Director-General or compulsory arbitration (article 56 of the International Health Regulations). Successful cases by States Parties harmed by travel or trade restrictions or human rights violations would be a powerful precedent to enhance compliance.

Lastly, the World Health Assembly could amend the International Health Regulations to increase temporary recommendations to a binding status. Even if temporary recommendations remain non-binding, trade restrictions could be challenged through the World Trade Organization.

THE ROLE OF WHO IN DEALING WITH PANDEMICS.

R.V Vishnukumar*

ABSTRACT

A pandemic can be described as "an epidemic of vast proportions happening worldwide, engulfing large stretches of inhabitated area, being pan global and so to say virtually affecting the mankind". The classical definition does not include about population immunity, virology or disease severity, which acquires a critical dimension particularly in the outbreak of new coronavirus as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) initially as a 'local virus' in the of Wuhan, China converting itself into an epidemic and now apandemic. In the event of the present experience of the outbreak of new coronavirus, no country as advanced as America, China, Italy, UK Spain in terms of finance, science and technology, health infrastructure, and hygiene medical research can tackle the situation alone. It is in this eventuality that the role of health agencies like World Health Organisation (WHO) becomes the life saving line of the mankind irrespective of region or population.It is in this background an attempt has been made in this article to address the pros and cons of the role of the WHO with reference to the various aspects of an epidemic/pandemic particularly with reference to the outbreak of new novel coronavirus. It is also the endeavour of the author to examine the whole issue in its entirety and lay out a future roadmap so that in future such epidemics do not threaten the very existence of mankind. It would be also of interest to understand, where India stands in the whole scenario vis-a-vis the WHO and the Global community.

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Key Words:WHO, Pandemic,Right to Health

INTRODUCTION

A pandemic can be described as "an epidemic of vast proportions happening worldwide, engulfing large stretches of inhabitated area, being pan global and so to say virtually affecting the mankind". The classical definition does not include about population immunity, virology or disease severity, which acquires a critical dimension particularly in the outbreak of new coronavirus as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) initially as a 'local virus' in the city of Wuhan, China converting itself into an epidemic and now a pandemic.

In the event of the present experience of the outbreak of new coronavirus, no country as advanced as America, China, Italy, UK Spain in terms of finance, science and technology, health infrastructure, and hygiene medical research can tackle the situation alone.

It is in this eventuality that the role of health agencies like World Health Organisation (WHO) becomes the life saving line of the mankind irrespective of region or population.

It is in this background an attempt has been made in this article to address the pros and cons of the role of the WHO with reference to the various aspects of an epidemic/pandemic particularly with reference to the outbreak of new novel coronavirus.

It is also the endeavour of the author to examine the whole issue in its entirety and lay out a future roadmap so that in future such epidemics do not threaten the very existence of mankind. It would be also of interest to understand, where India stands in the whole scenario vis-a-vis the WHO and the Global community.

Health is not just a medical or science term. It encompasses much more significance at a macro-level. The essence of health is to do, not just with an individual but could be a social indicator of a country's progress vis-à-vis the care it offers to the society at large.

The very concept of right to health starts with birth of an individual. So the question to ask is, is right to health care provided in India. This assumes significance in the prevailing pandemic new novel coronavirus

DEFINITION OF HEALTH

According to World HEALTH organization, Health is a state of complete physical, mental and social wellbeing and not merely the absence of disease[1].From the definition itself, it is clearly indicated that condition of life

1 Preamble of the constitution of WHO, 1948 as adopted by the International Health Conference (Official Records of WHO, no 2, p. 100

of the individual should incorporate physical, mental & social well being & must be devoid of disease & infirmity. Thus, this pioneering institution (WHO) has to play the best supportive role in guiding health policy development and action at the global and national levels, with an overall objective of ensuring & attaining the highest standards of health care to all the people around the world. WHO has not only given a wider definition to HEALTH but also brought the vision of HEALTH CARE. But the moot point is in the present life threatening situation across the globe, has the WHO being able to pass the so to say litmus test by providing health care This precisely is the scope of this paper and an attempt has been made to throw light on the important topic which is all encompassing and pervasive, so to say from 'Cradle to Grave.'

THE ROLE OF WHO IN DEALING WITH PANDEMICS

The WHO, the global health organisation, was created on 7 April 1948 in the wake of the formation of the United Nations after the Second World War. Its initial priorities were to tackle communicable diseases such as tuberculosis and venereal disease. Over the years WHO has endeavoured to eradicate many diseases among human populations with significant success. The WHO continues in its quest to reduce the impact of acute health emergencies and in the eradication of high-impact communicable diseases. The WHO cascades information to the public health institutions in individual countries.

The role of WHO can be traced back when it first developed, in consultation with international public health experts, a global pandemic preparedness plan in 1999 and then revised this plan in 2005 and 2009. WHO provided support to countries' efforts to prepare for a pandemic. Most countries developed pandemic plans based on WHO guidance. So how is WHO dealing with the present pandemic crisis.

The WHO can play its role effectively in a two fold way:

(Health Sector)

To help individual countries take appropriate action in the event of a potential pandemic, the WHO has developed six specific pandemic phases that are designed to help countries prepare for and respond to pandemics. Phases 1–3 relate to preparation and phases 4–6 clearly signal the need for response and mitigation efforts to be activated.

- Phase 1: the lowest level of pandemic alert, phase 1 indicates that an influenza-type virus either newly emerged or previously existing, is circulating among animals but where the risk of transmission to humans is low
- Phase 2: isolated incidences of animal-to-human transmission of the virus are observed, indicating that the virus has pandemic potential
- Phase 3: characterised by small outbreaks of disease, generally resulting from multiple cases of animal-to-human transmission, though limited

capacity for human-to-human transmission may be present

- Phase 4: confirmed human-to-human viral transmission that causes sustained disease in human populations. At this stage, containment of the virus is deemed impossible but a pandemic is not necessarily inevitable. The implementation of control methods to prevent further viral spread is emphasised in affected parts of the worl
- Phase 5: marked by human-to-human disease transmission in two countries, indicating that a pandemic is imminent and that distribution of stockpiled medicines and execution of strategies to control the disease must be carried out with a sense of urgenc
- Phase 6: characterised by widespread and sustained disease transmission among humans.

When the WHO upgrades the level of a pandemic alert, such as from level 4 to level 5, it serves as a signal to countries worldwide to activate any appropriate predetermined disease-control strategies.[2]

The focus should be to strengthen the national and global capacities needed to detect, to be prepared, to prevent and to respond to health security risks, hazards and emergencies; strengthen national and global preparedness for health security emergencies; provide global leadership and guidance when major infectious disease outbreaks and other health security emergencies occur.

The WHO[3] can play an effective role at a global level in coordination with the member countries by:-

1) Helping countries to prepare and respond
2) Providing accurate information, busting dangerous myths
3) Ensuring vital supplies reach frontline health workers
4) Training and mobilizing health workers
5) Vaccine search & augmentation
6) Helping the poorest and most vulnerable

The WHO has put a Dashboard to monitor the present pandemic situation by the minute. Globally, as of 2:34pm CEST, 7 July 2020, there have been 11,500,302 confirmed cases of COVID-19, including 535,759 deaths, reported to WHO. It gives the details at a glance of the Global situation, confirmed cases, deaths, Situation by WHO Region, Situation by Country, Territory or Area. Thus it can be seen that the WHO is geared up to play its role effectively by giving inputs on a real time basis, which is the need

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2 Alan Glasper, Potential global pandemics: the role of the WHO and other public health bodies, Volume 29 No. 5 BRITISH JOURNAL OF NURSING, 1, 2020

3 UN News Global perspective Human stories news.un.org › story › 2020/04

of the hour in combating the pandemic effectively.

The WHO has further issued a - Pandemic Influenza Preparedness and Response: A WHO Guidance Document as a part of multi pronged strategy:[4]

In cooperation with other sectors and in support of national inter sectoral leadership, the health sector must provide leadership and guidance on the actions needed, in addition to raising awareness of the risk and potential health consequences of an influenza pandemic. To fulfil this role, the health sector should be ready to:

- provide reliable information on the risk, severity, and progression of a pandemic and the effectiveness of interventions used during a pandemic;
- prioritize and continue the provision of health-care during an influenza pandemic;
- enact steps to reduce the spread of influenza in the community and inhealth-care facilities; and
- Protect and support health-care workers during a pandemic.

Switching to Pandemic Vaccine Production

One of WHO's critical actions during an emerging pandemic will be selection of the pandemic vaccine strain and determining the time to begin production of a pandemic vaccine instead of a seasonal influenza vaccine. The WHO has already made efforts in this direction.

WHO issues bi-annual recommendations on the composition of seasonal influenza vaccines and, in addition, has been reviewing vaccine candidate viruses for A (H5N1) and other influenza subtypes with pandemic potential since 2004. This process is undertaken in consultation with WHO Collaborating Centres (CCs) for influenza, National Influenza Centres, WHO H5 Reference Laboratories, and key national regulatory reference laboratories based on surveillance conducted by the WHO Global Influenza Surveillance Network (GISN). The recommendations and availability of vaccine viruses are announced in a public meeting and simultaneously on the WHO website, and are also communicated to influenza vaccine manufacturers via the International Federation of Pharmaceutical Manufacturers and Associations and the Developing Country Vaccine Manufacturers Network.

As soon as there is credible evidence to suggest that an influenza virus with pandemic potential has acquired the ability to sustain human-to-human transmission, WHO has expedited the process of review, selection, development, and distribution of vaccine viruses for pandemic vaccine production, as well as vaccine potency testing reagents and preparations involving all stakeholders as necessary. The efficiency of this process depends

4 ibid

on the timely sharing of viruses/clinical specimens with WHO via GISN/WHO CCs.

If the situation involves parallel determination of a PHEIC by the Director-General, then the decision to recommend a vaccine switch in production will be taken with due consideration to applicable requirements under the IHR (2005), including potentially, advice from an IHR Emergency Committee as appropriate. WHO will then announce its recommendations on whether and when to switch production to pandemic vaccine and the virus strain that should be used in the pandemic vaccine.

Given the possible rapid spread of the pandemic virus and the potential consequences of a pandemic, as well as the time needed for vaccine production, the process to decide whether to switch to pandemic vaccine will be started independently from the formal declaration of a pandemic phase change.[5]

(Non - Health Sector)

In the absence of early and effective preparedness, societies may experience social and economic disruption, threats to the continuity of essential services, reduced production, distribution difficulties, and shortages of essential commodities. Disruption of organizations may also have an impact on other businesses and services. For example, if electrical or water services are disrupted or fail, the health sector will be unable to maintain normal care. The failure of businesses would add significantly to the eventual economic consequences of a pandemic. Some business sectors will be especially vulnerable and certain groups in society are likely to suffer more than others. Developing robust preparedness and business continuity plans may enable essential operations to continue during a pandemic and significantly mitigate economic and social impacts. In order to minimize the adverse effects of a pandemic, all sectors should:

- establish continuity policies to be implemented during a pandemic;
- plan for the likely impact on businesses, essential services, educational institutions, and other organizations;
- establish pandemic preparedness plans
- develop capacity and plan for pandemic response
- plan the allocation of resources to protect employees and customers;
- communicate with and educate employees on how to protect themselves and on measures that will be implemented; and
- contribute to cross-cutting planning and response efforts to support the continued functioning of the society.[6]

5 Pandemic Influenza Preparedness and Response A WHO Guidance Document Geneva: World Health Organization; 2009.

6 National Health Policy, 2017

INDIAN PERSPECTIVE VIS-A-VIS THE WHO AND THE GLOBAL COMMUNITY

A look at the Legal Framework for Health Care and Health Pathway envisaged by NATIONAL HEALTH POLICY, 2017 would provide an insight of India's attempt to tackle the coronavirus syndrome.

One of the fundamental policy questions being raised in recent years is whether to pass a health rights bill making health a fundamental right- in the way that was done for education. The policy question is whether we have reached the level of economic and health systems development so as to make this a justiciable right- implying that its denial is an offense.

Right to healthcare covers a wide canvas, encompassing issues of preventive, curative, rehabilitative and palliative healthcare across rural and urban areas, infrastructure availability, health human resource availability, as also issues extending beyond health sector into the domain of poverty, equity, literacy, sanitation, nutrition, drinking water availability, etc. Excellent health care system needs to be in place to ensure effective implementation of the health rights at the grassroots level. Right to health cannot be perceived unless the basic health infrastructure like doctor-patient ratio, patient-bed ratio, nurses-patient ratio, etc are near or above threshold levels and uniformly spread-out across the geographical frontiers of the country. Further, the procedural guidelines, common regulatory platform for public and private sector, standard treatment protocols, etc need to be put in place. Accordingly, the management, administrative and overall governance structure in the health system needs to be overhauled. Additionally, the responsibilities and liabilities of the providers, insurers, clients, regulators and Government in administering the right to health need to be clearly spelt out. This is what the National Health Policy, 2017 envisages and is critical to the curbing of present pandemic.

IMPLEMENTATION FRAMEWORK AND FUTURE ROADMAP IN INDIA

The National Health Policy, 2017 as detailed above, while supporting the need for moving in the direction of a rights based approach to healthcare is conscious of the fact that threshold levels of finances and infrastructure is a precondition for an enabling environment, to ensure that the poorest of the poor stand to gain the maximum and are not embroiled in legalities. The policy therefore advocates a progressively incremental assurance based approach, with assured funding to create an enabling environment for realizing health care as a right in the future. Ayushman Bharat is part of this initiative

Questions that need to be addressed are manifold, namely, (a) whether when health care is a State subject, is it desirable or useful to make a Central law, (b) whether such a law should mainly focus on the enforcement of public health standards on water, sanitation, food safety, air pollution etc, or

whether it should focus on health rights- access to health care and quality of health care – i.e whether focus should be on what the State enforces on citizens or on what the citizen demands of the State? The answers to these questions would help lay down a roadmap in near future to effectively deal at a domestic level with the global pandemic at hand so that in future such epidemics do not threaten the very existence of mankind.

CONCLUSION

A policy is only as good as its implementation. The National Health Policy envisages that an implementation framework be put in place to deliver on these policy commitments. Such an implementation framework would provide a roadmap with clear deliverables and milestones to achieve the goals of the policy[7] which would a long way in dealing with the issue at hand. As a consensus we can nevertheless say that the National Health Policy, 2017 it is a step in right direction. However, much more needs to be done if we are to overcome the crisis of the century.

International Dispute Settlement

DEALING WITH LAND BORDER DISPUTES

Mahantesh B Madiwalar[*] &
Prof Dr. B S Reddy[**]

ABSTRACT

Ownership of territory is significant because sovereignty over land defines what constitutes a state. i.e. state can exercise political control. Territorial acquisition is one of the goals of most states. Boundaries' of state will be claim by the following categories, treaties, geography, economy, culture, effective control, history, utipossidetis, elitism, and ideology, states have relied on all nine categories to justify legal claims to territory before the International court of Justice. In recent years international adjudicators have been increasingly inclined to deviate from historical boundaries in order t promote human oriented goals such as the protection of borderland population or the bolstering of peace efforts.

Land and boundary disputes have occupied a central place in international adjudication for more than a century now. During most of this time, the resolution of such disputes was governed exclusively by the principle of the stability and continuity of boundaries. This principle entailed that, once a boundary had been determined, whether by existing states or their predecessors, it was almost impossible to challenge or revise without the consent of all the bordering states. In the recent years the principles of stability and continuity of boundaries has suffered some erosion. Rather than simply sanctify historical lines.When deciding the boundary disputes the international adjudicators should take into several types of human oriented

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considerations and balance them with the principles of stability of boundaries. [1]

Key words: International Law, Indian Constitution

INTRODUCTION

International law has significant relation with territorial disputes because territorial disputes traces the basis of international law, the state territory therefore the breach of a country's borders or territorial disputes pose a threat to a states very sovereignty and the right as a person of international law. Disputes involving property and land can often cause distress and frustration. Property and land disputes can include damage to your land, boundary disputes, trespassing, ownership issues, rights of way and access to land.

Indian approach towards settlement of disputes in four distinct stages. The first stage has its genesis with British India becoming part of the League system. The 1929 to 1940 reservations to the Article 36 of the PCIJ by the United Kingdom are extended to India as well which remains unchanged after its independence. The shaping of Indian Constitutional seeking to resolve all its international disputes by taking recourse to arbitration essentially reflects the complex situation that emerged after the partitions of the Indian sub continent. The second stage begins with Portugal filing a case in 1956 against India. It shakes up India's approach resulting in the immediate replacement of its colonial 1940 reservation to the ICJ. The third stage of this evolutionary trajectory is traced to the aftermath of the 1971 conflict with its neighbors resulting in India taking a relook at its 1956 reservations. The last one decade has seen the emergence of the fourth stage wherein India in a major policy shift consents to settle couple of disputes pursuant to its obligations under Indus water Treaty, continuing with this and pursuant to its obligations under the UNCLOS, India consents to the Bay of Bengal Maritime Boundary Arbitration and also the enrica Lexie case. All these cases, including several cases within the framework of the WTO in recent times shape and reshape the Indian portion on international settlement of the disputes[2]

List of disputed territories of India: there are several disputes territories of India. A territorial dispute is a disagreement over the possession or control of land between two or more states or over the possession or control of land by a new state and occupying power after it has conquered the land from a

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1 Michal Saliternik, 'Expanding the boundaries of Boundary Dispute Settlement International Law and Critical geography at the cross roads' file:///C:/ Users/ sri/ Downloads/SSRN-id2752675.pdf site visited on 20-6-2020.

2 Venkatachalan G. Hegade, "India and international settlement of disputes", Indian Journal of International Law 56, Published: 21st October 2016. https://link.springer.com/article/10.1007/s40901-016-0037-0 visited on 25-6-2020.

former state no longer currently recognized by the new state.

India faces territorial issues with some of it s neighbors- China, Pakistan and Nepal. It also has border dispute with Taiwan. India has resolved it un-demarcated border with Bhutan, which included multiple irregularities. India also resolved its border disputes with Bangladesh and Sri Lank.

Boundaries: the boundaries demarcate the territory of one state from that of another and constitute part of a State's title to territory. The boundaries may be natural or artificial. The natural boundaries are consists of rivers, mountains, deserts, forests, the artificial boundaries are the imaginary boundary lines constructed for the purpose of dividing territories. They may consists of walls, pullers, poles, etc. about half of the boundary line between the U S A and Canada is an artificial line running the 19th parallel. The boundary line dividing north Korea from South Korea runs along the 38th parallel.[3]

WHY BOUNDARY/ TERRITORIAL DISPUTES?

Every state have its boundary, the border is the outer limit of the area where the state has its territorial sovereignty. These borders often happen to be areas where states territory meets with that of another state.

The boundaries demarcate the territory of one State to another and constitute part of the state title to territory. The boundary may be natural or artificial . the natural boundaries consist of rivers, mountains, deserts, forests and the lake. The artificial boundaries are the imaginary boundary lines constructed for the purpose of dividing territories, they may be consists of walls, pillars, poles.[4]

The sea situation is totally different and complicated. Outside the territory of a state, Art 3 of the UN Convention of the law of the sea, 'every state has the right to establish the breadth of its territorial sea up to a limit not exceeding 12 nautical mile, measured from baselines determined in accordance with this comes with certain restrictions. Ex. Foreign ships are entitled to the right of innocent passage: meaning that a costal state shall not prevent the passage of foreign vessels within its territorial sea, provided that they do not give prejudice to the states peace good order or security.

According to Article 57 of the UN Convention of the Law of the Sea, the exclusive economic zone shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured, and the costal state has sovereign rights for the purpose of exploring the continental shelf and exploiting its natural resources in the Exclusive Economic Zone.

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3 M P TANDAON, "PUBLIC INTERNATIONAL LAW", Allahabad Publication,2014, PP.121.

4 Dr. Ramesh kumar Singh Bhanu Pratap, "textbook on Public International Law", Universal Law Publishing, pp99.

If two states claim their territorial sovereignties over the same area on land, a question of territorial delimitation arises. the following factual elements in territorial issues.

1. The change of occupying forces over the territory in question. Ex. An area used to be occupied by state A, but state B then came to occupy it.
2. The occupying state (State B) incorporate the area into its own territory.
3. State A continues to claims its territorial sovereignty over the area in question by denying the legality of State B's claim
4. Territorial issues typically arise when

   a) In an armed conflict, state B occupies an area and will not leave

   b) An area had been transferred from state A to state B by a treaty, but state A has come to doubt the validity of the treaty

   c) A treaty stipulates the transfer of an area from State A to State B, but state A claims that the territory in question is not part of the area that should be transferred.[5]

Boundary disputes in India:

India and china share their borders in these states viz., Himachal Pradesh, Uttarkhand, Sikkim and Arunachal Pradesh and a Union Territories of Ladakh. Sino Indian border is generally divided into three sectors namely western sector, Middle sector, and Eastern sector. In western sector, India shares about 2152 km long border with China. It is between Union Territory of Ladakh and Xingjiang Proviance of China. In this sector, there is a territorial Dispute over Akasai Chin. India claims it as part of erstwhile Kashmir, while china claims it is part of Xinjiang. The dispute over Akasai

5 Masataka Okano, 'How to Deal with Border Issue; A diplomat Practioners Perspective', http://src-h.slav.hokudai.ac.jp/publictn/eurasia_border_review/no1/04_Okano.pdf site visited on 27-6-2020.

Chin can be traced back to the failure of the British Empire to clearly demarcate a legal border between China and its Indian Colony.during the time of British rule in India, two borders between India and China were proposed Johson's Line and McDonald Line. The Johson's line proposed in 1865 shows Aksai Chin in earstwhile Jammu and ksahmir (now Ladaka) i.e. under Indias control whereas McDonald Line (proposed in 1893) places it under Chinas control.

India considers Johnson line as a correct, rightful national border with China, while on the other hand, china donsiders the Mc Donald Line as the correct border with India. At present Line of Actual Control (LAC) is the line separating Indian areas of Ladakh from Akasai Chin. It is concurrent with the Chinese Akasai Chin claim line.

McDonald line of 1899 which pleaded and on which basis it settled line with Pakistan in Aksai Chin Area, considers Galwan valley as part of India because, it's a part of Indus valley undoubtedly. Therefore, even on its own showing, China has no claim over the entitle Galwan Valley above 6 km from its confluence with Shyok river.

The intrusion of Chinese Army into Ladakh in India in the first week of May has made many turn to the pages of history to appreciate the scope and merits of India-China (Sino-Indian) border dispute over Akasai Chin area. Border disputes, undoubtedly, are complex and so is this dispute with regard to Aksai Chin. It involves appreciation of factual aspects of several demarcation lines drawn by the experts in the last one and half century based on evidence of historic sovereign control, interpretation of the treaties and application of International law on State Succession.

The eastern boundary of Kashmir is a long boundary running into about 2150 km. Its also called Western Sector of Sino Indian border dispute. The other two sectors of Sino-Indian border disputes are Central Sector and Eastern Sector. The Latter have serious disputes on demarcation boundary lines.

The present border dispute cannot hang on endlessly. If 174 years have passed after the Amritsar Treaty in 1846. Needless to say that, India and China are expected in international law to cooperate and resolve the pestering differences in the interest of peace and their mutual economic interests.

On the face of it, there is no title dispute on the territorial ownership between Indian and China. China does not dispute the annexation of Kashmir by British. The succession of Kashmir, and Ladakh by virtue of accession. Is not questioned by China. The present dispute between India and China is identity of territory.

On 6th June 2015, the 1974 India and Bangaladesh Land Boundary Agreement entered into force, following the exchange of instruments of

ratification by Prime Ministe Narendra Modi of India and Prime Minister of Sheikn Hasina of Bangaladesh, during a State visit to Bangladesh by Prime Minister Modi. The agreement provides for the exchange of pockets of Indian and Bangladesh territory and the clarification of the India Bangladesh border, which remained unresolved following partition in 1947.

Boundary disputes between neighbouring territories can cause significant risk and difficulties for companies looking to operate or invest in the disputed area.

One hundredth Amendment to the Constitution, passed by the Rajya Sabha on May 6 and the Lok Sabha on May 7, is not merely a stastical milestone, but an even of immense political and diplomatic significance. The Constitution (100th Amendment) Act, 2015 may well bring to an end one of India's longest running boundary dispute that has spanned seven decades and two countries

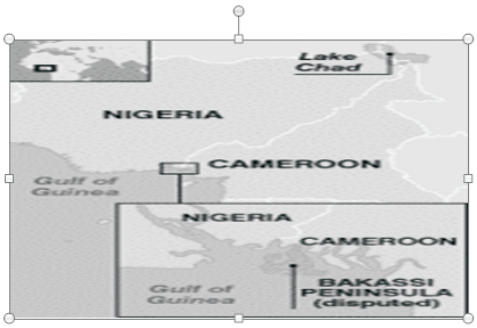
The Act makes changes to the significant, but rarely discussed, opening provisions of the Constitution: Part I and the First Schedule, which deal with the Union and its territory. A brief overview of these provisions will be in order before devolving into the story behind the Act. Article 1 declares India to be a union of states, and defines its territories as may be acquired. Article 2 empowers Parliament to admit into the Union, or establish, by law, any new States on such a terms and conditions as it thinks fit. Article 3 gives Parliament legislative power to create new States and Union territories, or alter the boundaries of existing ones. Article 4 provides that no law made under Articles 2 and 3 shall be deemed to be a constitutional Amendment, thereby simplifying the procedure for the Union Government to carry out this process.[6]

Boundary agreements in the international court of justices :

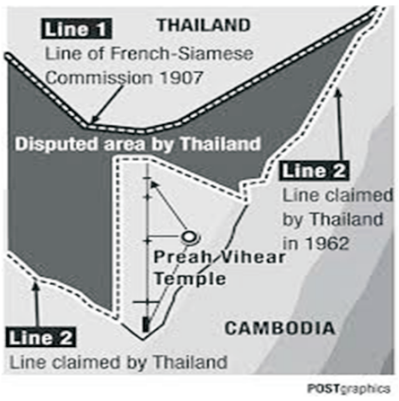
6 http://indconlawphil.wordpress.com/2015/5/15/land-boundary-agreements-and-the-bangaladesh-land-swap site visisted on 25/6/2020.

In march 1994, Cameroon filed a case before the International Court of justice concerning a dispute relating essentially to the question of sovereignty over the Bakassi Peninsula, in 1994, Cameroon extended the subject of the dispute to include the question of sovereignty over Cameroonian territory in the area of Lake Chad and the Fortier between Cameroon and Nigeria from Lake Chad to the sea. In 1999, the court authorised an intervention by Guines, which sought to protect its legal right in the light of pending maritime boundary claims between Cameroon and Nigeria.

The ICJ delivered its judgment in the case on 10 October 2002.the court decided that sovereignty over Bakassi Peninsula lies with Cameroon and that the boundary is delimited by the Anglo-German agreement of 11 March 1913. The court noted that the land boundary dispute falls within an[7] historical framework including partition by European powers in the 19th and early 20th centuries, League of Nations mandates, UN Trusteeships and the independence of the two states.



The Court also ruled on the 1690 km border between Lake Chad and the sea, the court requested that both Nigeria and Cameroon withdraw their administration and their military and police forces from certain areas according to the judgement Nigeria agreed to withdraw its trrops from the Bakassia region in accordance with 2002 judgement under a deal brokered by the United Nations.



7 http://www.haguejusticeportal.net/index.php?id=6220 site visited on 5/7/2020.

The 1962 judgment of the ICJ in Temple of Preah Vihear which concerned a dispute between Cambodia and Thiland over the location of their common border in the area of the Preah Vihear Temple was discussed earlier as an example of the conservative approach of the ICJ to boundary questions. The court in this case was determined to confirm the finality of a boundary delimitation map created by the parties' predecessors in 1904, and dismissed any challenges to its validity. It also refused to consider arguments of a historical or religious character that were made by the parties. In the operative part of the judgement, the court stated that the temple was located on the Cambodian side of the border and that Thiland was under an obligation to withdraw any military or police forces, or other guards or keepers, stationed by her at the temple, or in its vicinity on Cambodian territory.

It soon turned out, however, that the parties held different views as to the meaning of this operative part, in particular with respect to the extent of the area that was indluced in the vicinity of the temple. This controversy intensified in 2008, following the naming of the Preah Vihear Temple on the UNESCO world heritage List. In 2011, Cambodia submitted to the court a request for interpretation of its 1962 judgment. The court delivered its judgment in 2013. Steering that this term referred to the entire promontory on which the temple was standing as well as to an adjacent valley, but no to the hill beyond it.

The court added that the parties were under an obligation to implement its judgment in good faith and to settle any further dispute by peaceful means. It then noted that this obligation was of particular importance in view of the temples religious and cultural significance for the peoples of the region and its unique status as a world Heritage Site. The court emphasized the parties duties under the World Heritage Site. The court emphasized the parties duties under the World heritage Convention to cooperate between themselves and with international community in the protection of the site as a world heritage. [8]

CONCLUSION

The International Tribunal have made an important step in this direction in some recent decisions and suggests ways to further develop international boundary adjudication along this path. These above cases contribute to promoting justice in the field of boundary dispute settlement and to increase its relevance to contemporary international law and politics. At the same time, the the international law analysis with critical geography literature, which has, so far, mostly been overlooked by lawyers and geography

8 Michal Saliternik,"Expanding the Boundaries of Boundary Dispute Settlement: International Law and Critical Geography at the Crossroads" pp.128-129. Also available on file:///C:/Users/sri/Downloads/SSRN-id2752675%20(2).pdf site visited on 5/7/2020.

literature has, so far, mostly been overlooked by lawyers and geographers alike.

One of the cornerstones of boundaries is consent, as the International Court of Justice made clear in its judgment in Libyan Arab Jamahiriya/Chad, in which it said that fixing of a frontier depends on the will of the sovereign States directly concerned. One should then expect from states that they be extremely careful when conducting negotiations and concluding agreement in such a critical realm.

THE TRENDS OF BIOWAR- A CRITICAL ANALYSIS

Ashraya. S. Chakrabarty*
& Prof. Ramesh**

ABSTRACT

Only a few years ago bioterrorism was considered a remote concern but few today are complacent about the possibility of biological agents being intentionally used to cause widespread panic, disruption, disease and death. By its very nature, the biological weapons threat – with its close links to naturally occurring infectious agents and disease – requires a different paradigm than that for conventional terrorism, military strikes or attacks caused by other weapons of mass destruction. This evolving threat presents the medical, public health and scientific communities (importantly including biotechnology) with a set of difficult and pressing challenges. This article provides a brief overview of the threat from biological weapons, the nature of a bioterrorist attack and some of the issues that need to be addressed if we are to make meaningful progress to prevent or contain this disturbing and potentially catastrophic danger.This paper discusses about the recent trends in bio warfare and the related aspects which can hugely impact on the humans and as well as on the environment. The same is based on doctrinal work and the data are collected from books, journals and articles. This paper provides a strong platform to discuss the concept of the bio war.

Keywords: Bioterrorism, Bio threat, Biological Warfare, Infections,Biological and Toxin Weapons.

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INTRODUCTION

Terrorism is the intentional use of undiscriminating violence to create fear and terror as a means to attainasociopolitical, financial, religious aim. It is often used in contradiction of non-combatant targets.[1] Terror policies may include biologic, chemical, nuclear, or explosive events.Bioterrorism is the deliberate release of biological agents to cause illness or death in the living creatures including plants. This includes or may include bacteria, fungi, toxins, or viruses. They may be as one would expect occurring naturally or human-modified.

The agents are characteristically found in nature, but they may be improved in a laboratory to increase their confrontation to antibiotics, and ability to spread in the environment. Biological and chemical agents may spread through the air, food, or water. Terrorists use biological agents because they are oftenhard to detect and illness and beginningof the destruction may be delayed for hours to days increasing dispersal.

Bioterrorism are a common choice for terrorists because they easy and inexpensive to produce, easy to disseminate, and can cause widespread effects. The challenge with bioweapons is that they may affect both enemy and friendly forces. Terrorists use biologic weapons as a method of creating mass panic.In the history of humanity, the intentional infliction of casualties on civilians was considered inappropriate. Civilians are usually not attacked for their own sake unless they happen to be living or working in an area that has tactical or strategic value. Unfortunately, bioterrorism agents are difficult to control and affect military personnel as well as civilian men, woman, and children. In the last 100 years, the Global Community hascome acrossmany acts of terrorism and bioterrorism which have targeted civilians.

TERRORISM DEFINITIONS

What is terrorism? What is a mass casualty incident?

The United Nations definition of terrorism describes it as "an anxiety-inspiring method of repeated violent action, employed by (semi-) clandestine individual, group, or state actors, for idiosyncratic, criminal, or political reasons, whereby—in contrast to assassination—the direct targets of violence are not the main targets."[2]

The Department of Defense[3] defines terrorism as "the unlawful use of

1 Byers M, Greaves I. Respiratory protection for Health Care Workers. J R Army Med Corps. 2006 Dec;152(4):225-30. [PubMed]

2 LEONARD WEINBERG , AMI PEDAHZUR & SIVAN HIRSCH-HOEFLER(2004) The Challenges of Conceptualizing Terrorism, Terrorism and Political Violence, 16:4,777-794, DOI: 10.1080/095465590899768

3 The Department of Defence is mandated with Defence of India and every part thereof including defence policy. It deals with Inter-Services Organizations, Defence Accounts Department,Canteen Stores Department (CSD), Coast Guard, National Cadet Corps, Border Roads Organisation, Institute for Defence Studies and Analysis, National Defence College etc.

violence or threat of violence, often motivated by religious, political, or other ideological beliefs, to instill fear and coerce governments or societies in pursuit of goals that are usually political."

The Federal Emergency Management Agency[4] defines terrorism as "the use of force or violence against persons or property in violation of the criminal laws of the United States for purposes of intimidation, coercion, or ransom. Terrorists often use threats to create fear among the public, to try to convince citizens that their government is powerless to prevent terrorism, and to get immediate publicity for their cause".

The US Code of Federal Regulations[5] defines terrorism as "the unlawful use of force and violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.

Terrorism is generally considered to be the use of force or violence outside the law to create fear among citizens with the intent to coerce some sort of action. Health professionals should be aware bioterrorism is a perfect vehicle for terrorists to strike fear into the hearts and minds of citizens in the hopes they will bend the will of the people to support their agendas. All health professionals need to be prepared for this potentially catastrophic event.[6]

"According to WHO Biological weapons are microorganisms like virus, bacteria, fungi, or other toxins that are produced and released deliberately to cause disease and death in humans, animals or plants. Biological agents, like anthrax, botulinum toxin and plague can pose a difficult public health challenge causing large numbers of deaths in a short amount of time while being difficult to contain. Bioterrorism attacks could also result in an epidemic, for example if Ebola or Lassa viruses were used as the biological agents. A biological weapon is a subset of a larger class of weapons referred to as weapons of mass destruction, which also includes chemical, nuclear and radiological weapons. The use of biological agents is a serious problem, and the risk of using these agents in a bioterrorist attack is increasing."

HISTORY OF BIO-WARS

Pre-20th-century use of biological weapons:

One of the first recorded uses of biological warfare occurred in 1347, when Mongol forces are reported to have catapulted plague-infested bodies

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4 The Federal Emergency Management Agency coordinates the federal government's role in preparing for, preventing, mitigating the effects of, responding to, and recovering from all domestic disasters, whether natural or man-made, including acts of terror.

5 US Code of Federal Regulations is a service of the United States Government Publishing Office (GPO), which is a Federal agency in the legislative branch. US Code of Federal Regulations provides free public access to official publications from all three branches of the Federal Government.

6 Aven T, Guikema S. On the Concept and Definition of Terrorism Risk. Risk Anal. 2015 Dec;35(12):2162-71. [PubMed]

over the walls into the Black Sea port of Caffa (now Feodosiya, Ukraine), at that time a Genoese trade centre in the Crimean Peninsula. Some historians believe that ships from the besieged city returned to Italy with the plague, starting the Black Death pandemic that swept through Europe over the next four years and killed some 25 million people (about one-third of the population).

In 1710 a Russian army fighting Swedish forces barricaded in Reval (now Tallinn, Estonia) also hurled plague-infested corpses over the city's walls. In 1763 British troops besieged at Fort Pitt (now Pittsburgh) during Pontiac's Rebellion passed blankets infected with smallpox virus to the Indians, causing a devastating epidemic among their ranks.

Biological weapons in the World Wars:

During World War I[7] (1914–18) Germany initiated a clandestine program to infect horses and cattle owned by Allied armies on both the Western and Eastern fronts. The infectious agent for glanders[8] Glanders : A highly contagious and life-threatening disease of horses and other equines (such as donkeys and mules) or sometimes other anima ls (such as dogs, cats, or goats) that is caused by a bacterium (Burkholderia mallei synonym Pseudomonas mallaei), is characterized especially by fever, cough, nodular lesions that tend to rupture and ulcerate, enlarged lymph nodes, and nasal discharge, and may be transmitted from infected animals to people. Glanders may occur as an infection of the skin, lungs, upper respiratory tract, or bloodstream. Chronic glanders progresses slowly over a period of years before death while acute glanders typically leads to death within a week or two following the onset of symptoms. was reported to have been used. For example, German agents infiltrated the United States and surreptitiously infected animals prior to their shipment across the Atlantic in support of Allied forces. In addition, there reportedly was a German attempt in 1915 to spread plague in St. Petersburg in order to weaken Russian resistance.

The horrors of World War I caused most countries to sign the 1925 Geneva Protocol banning the use of biological and chemical weapons in war. Nevertheless, Japan, one of the signatory parties to the protocol, engaged in

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7 World War-I pitted Germany, Austria-Hungary and the Ottoman Empire against Great Britain, the United States, France, Russia, Italy and Japan. New military technology resulted in unprecedented carnage. By the time the war was over and the Allied Powers claimed victory, more than 16 million people, soldiers and civilians alike were dead.

8 Glanders : A highly contagious and life-threatening disease of horses and other equines (such as donkeys and mules) or sometimes other animals (such as dogs, cats, or goats) that is caused by a bacterium (Burkholderia mallei synonym Pseudomonas mallaei), is characterized especially by fever, cough, nodular lesions that tend to rupture and ulcerate, enlarged lymph nodes, and nasal discharge, and may be transmitted from infected animals to people. Glanders may occur as an infection of the skin, lungs, upper respiratory tract, or bloodstream. Chronic glanders progresses slowly over a period of years before death while acute glanders typically leads to death within a week or two following the onset of symptoms.

a massive and clandestine research, development, production, and testing program in biological warfare, and it violated the treaty's ban when it used biological weapons against Allied forces in China between 1937 and 1945. The Japanese not only used biological weapons in China, but they also experimented on and killed more than 3,000 human subjects (including Allied prisoners of war) in tests of biological warfare agents and various biological weapons delivery mechanisms. The Japanese experimented with the infectious agents for bubonic plague, anthrax, typhus, smallpox, yellow fever, tularemia, hepatitis, cholera, gas gangrene, and glanders, among others.[9]

Although there is no documented evidence of any other use of biological weapons in World War II, both sides had active research and development (R&D) programs. The Japanese use of biological warfare agents against the Chinese led to an American decision to undertake biological warfare research in order to understand better how to defend against the threat and provide, if necessary, a retaliatory capability. The United Kingdom, Germany, and the Soviet Union had similar R&D programs during World War II, but only Japan has been proved to have used such weapons in the war.

Biological weapons in the Cold War:

In the Cold War era, which followed World War II, the Soviet Union and the United States, as well as their respective allies, embarked on large-scale biological warfare R&D and weapons production programs. Those programs were required by law to be halted and dismantled upon the signing of the Biological Weapons Convention (BWC) in 1972[10]. In the case of the United States and its allies, compliance with the terms of the treaty appears to have been complete. Such was not the case with the Soviet Union, which conducted an aggressive clandestine biological warfare program even though it had signed and ratified the treaty. The lack of a verification regime to check members' compliance with the BWC made it easier for the Soviets to flout the treaty without being detected.

After the demise of the Soviet Union in 1991 and its subsequent division into 15 independent states, Russian Pres. Boris Yeltsin confirmed that the Soviet Union had violated the BWC, and he pledged to terminate what remained of the old Soviet biological weapons program. (See also yellow rain.) However, another problem remained—that of the potential transfer of information, technical assistance, production equipment, materials, and even finished biological weapons to states and groups outside the borders of the former Soviet Union. The United States and the former Soviet republics

9 https://www.britannica.com/technology/biological-weapon/Biological-terrorism accessed on 14.06.2020

10 The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction, commonly known as the Biological Weapons Convention (BWC) or Biological and Toxin Weapons Convention (BTWC), opened for signature in 1972 and entered into force in 1975.

pledged to work together to contain the spread of biological warfare capabilities. With financing from the U.S. Cooperative Threat Reduction Program and other sources, help in obtaining civilian jobs in other fields was also made available for some of the estimated 60,000 scientists and technicians who had worked in the Soviet biological warfare programs.

BIOLOGICAL WEAPONS PROLIFERATION

Of the more than 190 members of the United Nations, only a dozen or so are strongly suspected of having ongoing biological weapons programs. However, such programs can be easily hidden and disguised as vaccine plants and benign pharmaceutical-production centres. Biological weapons are not as expensive to manufacture as nuclear weapons, yet a lethal biological weapon might nonetheless be the strategic weapon that would win a war. This prospect of military advantage might tempt some regimes to acquire the weapons, though perhaps stealthily.

BIOLOGICAL TERRORISM

In the period from April 1990 to July 1995, the AUM Shinrikyo[11] AumShinrikyo is designated as a terrorist organisation in the US and many other countries, but Aleph and Hikari no Wa are both legal in Japan, albeit designated as "dangerous religions" subject to heightened surveillance. sect used both biological and chemical weapons on targets in Japan. The members' biological attacks were largely unsuccessful because they never mastered the science and technology of biological warfare. Nevertheless, they attempted four attacks using anthrax[12] and six using botulinum toxin[13] on various targets, including a U.S. naval base at Yokosuka.

Al-Qaeda[14] operatives have shown an interest in developing and using biological weapons, and they operated an anthrax laboratory in Afghanistan prior to its being overrun by U.S. and Afghan Northern Alliance forces in 2001–02. In 2001 anthrax-laden letters were sent to many politicians and other prominent individuals in the United States. The letters killed 5 people and sent 22 to the hospital while forcing the evacuation of congressional office buildings, the offices of the governor of New York, several television network headquarters, and a tabloid newspaper office. This event caused

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11 AumShinrikyo is designated as a terrorist organisation in the US and many other countries, but Aleph and Hikari no Wa are both legal in Japan, albeit designated as "dangerous religions" subject to heightened surveillance.

12 Anthrax is a serious infectious disease caused by gram-positive, rod-shaped bacteria known as Bacillus anthracis. Although it is rare, people can get sick with anthrax if they come in contact with infected animals or contaminated animal products.

13 Botulinum toxin, also called "miracle poison," is one of the most poisonous biological substances known. It is a neurotoxin produced by the bacterium Clostridium botulinum, an anaerobic, gram-positive, spore-forming rod commonly found on plants, in soil, water and the intestinal tracts of animals.

14 Al-Qaeda, Arabic al-Qæidah ("the Base"), broad-based militant Islamist organization founded by Osama bin Laden in the late 1980s.

many billions of dollars in cleanup, decontamination, and investigation costs. In early 2010, more than eight years after the mailings, the Federal Bureau of Investigation finally closed its investigation, having concluded that the letters were mailed by a microbiologist who had worked in the U.S. Army's biological defense effort for years and who committed suicide in 2008 after being named a suspect in the investigation.

Information on the manufacture of biological and chemical weapons has been disseminated widely on the Internet, and basic scientific information is also within the reach of many researchers at biological laboratories around the world. Unfortunately, it thus seems likely that poisons and disease agents will be used as terrorist weapons in the future.

A new human respiration infecting virus called the 2019 Novel Coronavirus, or COVID-19 is making headlines for causing an outbreak of respiratory illness throughout the world. The outbreak began in Wuhan, Hubei Province, China and quickly spread internationally. Thousands of people have become sick and public health.

List of observations at the Contemporary pandemic(COVID-19):

COVID- 19, a Bio weapon.

1. The way things are panning out is indicative that COVID is a bio weapon.
2. Initial info kept under wrap by China.
3. Then media release that it was caused by eating bats.
4. Release in Wuhan where they have a bio weapon facility.
5. Multiple 1000 bed prefab hospitals set up in a very short time. Thousands of medical personnel mobilized.
6. Intense measures used to control population.
7. By 20 March COVID Controlled in China.
8. Obviously there was a battle plan in place and that was activated. On the other hand rest of the world has been handed a sucker punch in the stomach.
9. Major economic setback has been inflicted all economic activity has been crushed, as world nations struggle to cope.
10. The nation where COVID-19 originated, aims to become a major economic power. At low cost it has inflicted a major blow and is many steps closer to world dominance, which is its aim. A country which could kill over 5 million of its own people in its cultural revolution, it not going to bat an eyelid
11. In the army it is taught to lookout for 'battle indicators'. They are a pointer to the adversary's intentions and plans. An examination of battle indicators helps identifying enemy's future steps and in

formulating our own counter plan

Battle Indicators:

1. Unusual suppression of information and execution of a deception plan. All measures were taken by China to suppress info leak on COVID19 to include expulsion of western journalists.A deception plan was activated, that it was a bat eating related issue emanating from local meat market. China failed to share info with world till it was too late to prevent spread.
2. China leaned heavily on World Health Organization to prevent it being declared a pandemic.Lacks of restrictions thereby lead to spread across the world. Delayed declaration is akin to shutting the stable door once the horse has bolted.
3. Deployment of multiple 1000 bed hospitals. While it is a commendable feat, it is not possible without deep preparation.
4. No country has such prefab hospitals lying stored around to be deply in ten days flat. We are struggling to create isolation wards out of soldiers barrack Accomodation. The Chinese response was too pat and army based.
5. Special equipment and clothing. No country or army has hazmat suits and other spleqpt, robots etc., readily available in the numbers observed on media in China. Even their defogging personnel were in hazmat suits. Compare with rest of the world.
6. Population control measures. Very strict measures were implemented. It was a planned deployment of resources based on police and army. Force was used ruthlessly as what was apparent in media. This is not a panic resultant administrative response. There was a plan in place.

1972 CONVENTION ON THE PROHIBITION OF BIOLOGICAL WEAPONS:

The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction[15] is one of the instruments of International Law aimed at reducing the suffering caused by war. The use of chemical and bacteriological

15 The Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on their Destruction (usually referred to as the Biological Weapons Convention, abbreviation: BWC, or Biological and Toxin Weapons Convention, abbreviation: BTWC) was the first multilateral disarmament treaty banning the production of an entire category of weapons. The Convention was the result of prolonged efforts by the international community to establish a new instrument that would supplement the 1925 Geneva Protocol. The Geneva Protocol prohibits use but not possession or development of chemical and biological weapons.

weapons in war had been widely condemned since the end of the First World War, and was prohibited by the 1925 Geneva Protocol,[16] the forerunner to the Convention. The Regulations annexed to Hague Convention IV of 1907[17] already banned the use of poison or poisoned weapons as a means of conducting warfare.

Prohibitions:

1. Microbial or other biological agents, or toxins, whatever their origin or method of production, of types and in quantities that have no justification for prophylactic, protective or other peaceful purposes
2. Weapons, equipment or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict.

Security Council Enforcement:

None of the treaties on chemical and biological weapons provide for the imposition of mandatory sanctions against violators. The parties to these treaties can individually or collectively impose sanctions, but embargoes are ineffective unless they are universally enforced. Thus, the U.N. Security Council[18] may increasingly be called upon to respond to violations of the chemical and biological weapons conventions. The United Nations Charter[19] charges the Security Council with the responsibility for determining the

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16 The Protocol for the Prohibition of the Use in War of Asphyxiating, Poisonous or other Gases, and of Bacteriological Methods of Warfare, usually called the Geneva Protocol, is a treaty prohibiting the use of chemical and biological weapons in international armed conflicts.

17 The Hague Conventions of 1899 and 1907 are a series of international treaties and declarations negotiated at two international peace conferences at The Hague in the Netherlands. Along with the Geneva Conventions, the Hague Conventions were among the first formal statements of the laws of war and war crimes in the body of secular international law. A third conference was planned for 1914 and later rescheduled for 1915, but it did not take place due to the start of World War I.

18 The Security Council has primary responsibility for the maintenance of international peace and security. It has 15 Members, and each Member has one vote. Under the Charter of the United Nations, all Member States are obligated to comply with Council decisions. The Security Council takes the lead in determining the existence of a threat to the peace or act of aggression. It calls upon the parties to a dispute to settle it by peaceful means and recommends methods of adjustment or terms of settlement. In some cases, the Security Council can resort to imposing sanctions or even authorize the use of force to maintain or restore international peace and security.

19 The Charter of the United Nations was signed on 26 June 1945, in San Francisco, at the conclusion of the United Nations Conference on International Organization, and came into force on 24 October 1945. The Statute of the International Court of Justice is an integral part of the Charter.

existence of any threat to, or breach of, the peace. Articles 41 and 42[20] of the Charter authorize the Security Council to restore international peace and security, by force if necessary. The Security Council may call upon U.N. members to impose sanctions and to use force to ensure compliance, e.g., to interdict vessels violating an embargo. The Security Council can also freeze the assets of responsible leaders and ban their travel."

Criminalization:

The prohibitions embodied in the 1908 Hague Convention,[21] the 1925 Geneva Protocol,[22] the Biological Weapons Convention, and the Chemical Weapons Convention is directed to the actions of states, not individuals.

1. Prosecution before International Criminal Tribunals On May 25, 1993, the U.N. Security Council, acting under Chapter VII of the United Nations Charter, established the International Criminal Tribunal for the Former Yugoslavia (the Tribunal) to prosecute persons responsible for war crimes, genocide, and crimes against humanity during the Balkan conflict.[23] The expenses of the Yugoslavia Tribunal ($60 million in 1998) are covered by a combination of the assessed contributions of the Member States of the United Nations and the voluntary contributions of States, international organizations, and private entities.
2. A year after the Security Council decided to establish an ad hoc tribunal for the former Yugoslavia;it createda second ad hoc tribunal to prosecute those responsible for the genocidal murder of 800,000

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20 Article 41: The Security Council may decide what measures not involving the use of armed force are to be employed to give effect to its decisions, and it may call upon the Members of the United Nations to apply such measures. These may include complete or partial interruption of economic relations and of rail, sea, air, postal, telegraphic, radio, and other means of communication, and the severance of diplomatic relations.
Article 42: Should the Security Council consider that measures provided for in Article 41 would be inadequate or have proved to be inadequate, it may take such action by air, sea, or land forces as may be necessary to maintain or restore international peace and security. Such action may include demonstrations, blockade, and other operations by air, sea, or land forces of Members of the United Nations.

21 The Hague Conventions of 1899 and 1907 were the first multilateral treaties that addressed the conduct of warfare and were largely based on the Lieber Code, which was signed and issued by US President Abraham Lincoln to the Union Forces of the United States on 24 April 1863, during the American Civil War.

22 The 1925 Geneva Protocol prohibits the use of chemical and biological weapons in war. The Protocol was drawn up and signed at a conference which was held in Geneva under the auspices of the League of Nations from 4 May to 17 June 1925, and it entered into force on 8 February 1928.

23 The Balkan Wars were two sharp conflicts that heralded the onset of World War I. In the First Balkan War a loose alliance of Balkan States eliminated the Ottoman Empire from most of Europe. In the Second Balkan War, the erstwhile allies fought among themselves for the Ottoman spoils.

members of the Tutsi Tribe[24] in the small central African country of Rwanda. The creation of the Rwanda Tribunal demonstrated that the international judicial machinery designed for the Yugoslavia Tribunal could be employed for other specific circumstances and offenses, thereby avoiding the need to reinvent the wheel in response to each humanitarian crisis of similar magnitude. The two ad hoc Tribunals have jurisdiction over inter alia violations of the 1908 Hague Convention, which as stated above, prohibits the use of poisonous weapons, as well as the deployment of weapons "calculated to cause unnecessary suffering."

3. In addition to the use of biological and chemical weapons, the Tribunals' jurisdiction also covers planning and preparation which includes production and stockpiling. The Security Council could go even further and expressly endow a new ad hoc tribunal with subject matter jurisdiction over breaches of the Biological Weapons Convention and the Chemical Weapons Convention, in addition to the 1908 Hague Convention. The procedures for indictment and the issuance of arrest warrants set forth in the Statute and Rules of the ad hoc International Criminal Tribunals may be used to stigmatize and constrain accused persons, even if the accused cannot be tried immediately. Moreover, the tribunal's process for confirmation of indictments, which has been described as akin to a "televised grand jury proceeding," would go a long way in documenting the international violations. Yet, the other members of the Security Council have resisted U.S. proposals for the establishment of additional hoc tribunals.

CONCLUSION

The traditional means of enforcement relies on the United Nations Security Council, which may impose a range of sanctions, including the use of force, to enforce the international prohibition on chemical and biological weapons. However, the Security Council's strong response to Iraq's possession of biological and chemical weapons in the aftermath of its invasion of Kuwait has been the exception. More often, the Security Council has been paralyzed by the threat or use of the veto by the permanent members, and has taken no action in response to repeated violations of the chemical and biological weapons conventions.The international criminalization of chemical and biological weapons violations through the establishment of ad hoc international tribunals and/or a regime of universal

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24 Tutsi, also called Batusi, Tussi, Watusi, or Watutsi, ethnic group of probable Nilotic origin, whose members live within Rwanda and Burundi. The Tutsi formed the traditional aristocratic minority in both countries, constituting about 9 percent and 14 percent of the population, respectively.

jurisdiction, using the Harvard Draft Convention[25] as a model, would have many benefits. A criminal indictment can also serve to isolate offending leaders diplomatically and strengthen the hand of domestic political rivals. Just imagine if every time Saddam Hussein's name appeared in the international press, it was followed by the moniker "indicted inter-national criminal." Ultimately, the success of the anti-chemical and biological weapons regimes requires the re-establishment of the "chemical and biological weapons taboo." The addition of criminalization to the existing means of enforcement will go a long way toward that end.

25 Harvard Draft Convention on the Responsibility of States for Damage Done in Their Territory to the Person or Property of Foreigner

CONTEMPORARY CHALLENGES OF LAW OF ARMED CONFLICTS

Dr.Ch.Lakshmi*

ABSTRACT

War is nothing but exhibition of uncontrolled emotions of States or Non State actors. Since the end of the Cold War, though the tendency in armed conflict has been generally downhill, but in recent years, both the number of conflicts and the severity of war, the number of conflicts and casualties seems again up surged. This upward trend is due to Nationalism, Democratic Recession, and Religious Extremism. From the beginning, the Law of War has sought to limit the suffering due to armed conflicts, by protecting and assisting victims of such conflicts in so far as possible. That aim has not changed. It seems this branch of International law does not prohibits the war but seeks to limit the effects of armed conflict by protecting persons who do not or no longer time take an active part in hostilities, by way of restricting and regulating the means and methods of warfare available to combatants. This paper aims to understand some of the major challenges posed by contemporary armed conflicts for IHL and accentuate States' obligation in implementation of Law of Warfare to achieve the objectives of the world community.

Key Words : War, Armed conflict, Nationalism, International Law

INTRODUCTION

International Humanitarian Law is a branch of Public International Law was abundantly promoted with the consensus of world community in the year 1949[1] with the effect of horrific acts of States in the Second World War

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1 Finally, with the utmost efforts of the world community, the principles of International Humanitarian Law was adopted in the year 1949, by reaffirming, expanding and updating the earlier Geneva and Hague Conventions.

.During the World War II, the world is the evident of massive destruction which could not have been possible to reconstruct as it had been before the World War. After the espousal of Geneva Conventions, 1949 [22] Geneva Convention (hereafterGC) I - Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field. GC II-Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea.and its Additional Protocols, 1977[3] the world has ever been witnessed of Third World War. It seems to some extent International Community has implemented its ideology to save the future generations from the blight of conflicts. Nonetheless, these Conventions further developed and supplemented by some other Conventions to strengthen the norms of IHL i.e, to mitigate the effects of warfare.[4]Further, the establishment of International Criminal Court is a milestone at International Criminal Juatice Administration System in acknowledging the non compliance of IHL amounts to War crimes.

It is an undisputable fact, since the early days of 21st century, the shape of armed conflicts has been changed and so the belligerents States find difficulty to abide by the norms of International Humanitarian Law. The changing nature of warfare poses a multitude of challenges to the perceived applicability of International Humanitarian Law for both State and non-State actors in contemporary conflicts. Despite these significant achievements in the globalized world, noncompliance with IHL remains an intractable problem. Each transgression has grave consequences for those affected, and when disregard for the rules becomes endemic in a conflict, it is devastating not only to the lives of individuals and families, but also communities, cities and, increasingly, entire regions. As much as IHL has come to be valued in international forums and in military doctrine, parties to some conflicts continue to flout its rules on a scale that is cause for serious global concern.

Since the establishment of United Nations (UN), though it recognised the principle of the sovereign equality of all its members, [5] conversely it states

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2 Geneva Convention (hereafterGC) I - Geneva Convention for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field.
GC II-Geneva Convention for the Amelioration of the Condition of Wounded, Sick and Shipwrecked Members of Armed Forces at Sea.
GC III-Geneva Convention relative to the Treatment of Prisoners of War.
GC IV-Geneva Convention relative to the Protection of Civilian Persons in Time of War.

3 Additional Protocol (hereafter AP)I - protocol additional to the GC of 12th August,1949 relating to the protection of victims of Internatioan Armed Conflict (hereafter IAC).; AP II—protocol additional to the GC of 12th August, 1949 relating to the protection of victims of Non International Armed Conflic (hereafter NIAC).

4 Such as— Geneva Protocol on Gas Warfare,1925, 1954 Convention for the Protection of Cultural Property in the Event of Armed Conflict 1954, and its two protocols, Biological Weapons Convention, 1972, Convnention on the use of conventional weapons,1980; Convention on chemical weapons,1993, Convention on anti personnel mines (Ottawa Treaty), 1997, Convention on cluster munitions ,2008 etc,.

5 Art.2(1) of UN Charter

that all members shall refrain in their international relations from the threat or use of force against the territorial integrity or political independence of any state, or in any other manner inconsistent with the Purposes of the UN. [6]Through these words, we can understand State or States' obligation in protection of peace and security in the world at large. But, it does not mean that the UN Charter , impair the right of a State to resort to force in the exercise of its right to self-defence.[7] at the same time, in case of any violation of UN principles relating to use of force, UN Security Council is authorized to impose necessary sanctions.[8] Accordingly, International Law permits to use force with the exception of States sovereignty i.e, Every State to defend itself against any attack. Thus, Jus in bello plays a vital role in IHL to achieve its objectives.

PRINCIPLES OF JUS IN BELLO

- Weapons prohibited by international law must not be used;
- There is a distinction between combatants and non-combatants;
- Armed forces must use proportional force;
- Prisoners of war must be treated humanely;
- Armed forces are not justified in breaking these rules in response to the enemy breaking these rules.

Hence, the IHL do not totally prohibits hostilities but to some extent it restricts the use of force by the belligerent States. "War is no way a relationship of man with man but a relationship between States, in which individuals are only enemies by accident, not as men, but as soldiers. Further he continues logically, that soldiers may only be fought as long as they themselves are fighting. Once they lay down their weapons they again become mere men. Their lives must be spared"[9]. Thus, Rousseaus's ideology laid down in the fundamental principles of IHL through the exertions of Henry Dunant and Francis Lieber. Due to the various changes in the modern scenario, often these principles are undermined by the civilized States which results the shackle world. The current conflicts are asymmetric in nature which cannot be identified the activities of the belligerent States. Due to the involvement of non State actors, enormous technology and military superiority belligerent Sates are often using guerrilla warfare to evade their identification. With that result instead of conducting the activities in open area, modern warfare takes place in open areas which are prohibited by the rule of warfare.

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6 Art2(4) of UN Charter
7 Article 51 of UN Charter.
8 Article 41 and 42 of UN Charter
9 JEAN-JACQUE ROUSSEAU, A TREATISE ON THE SOCIAL CONTRACT(Book I, Chap IV).

CONTEMPORARY CHALLENGES:

In the context of modern warfare of the 21st century, the practice of engaging non State actors to ensure more comprehensive compliance with International Humanitarian Law is often thwarted by the distorted perception that IHL cannot, or should not be applied in all situations of armed combat. But what is the rationale for this trend, and how can it be put an end to? What are the current challenges to acquiescence with IHL in combat, and how can they be overcome? To answer all these questions, first we must look at the current challenges to the armed conflicts such as—

(a) *New Technologies Of Warfare:* Lethal Autonomous Weapons; Artificial intelligence and robotics are the new challenges to the Armed Conflicts. In any case of these, All new weapons, means and methods of warfare, both anti-personnel and anti-material, being studies, developed , adopted or acquired must be assessed for proper implementation of IHL otherwise it would be severely effect on civilian society. Furthermore, the current system of technology paves a new platform to a modern warfare through sophisticated equipment which is available to every human being. Now, not only conventional military weapons such as tracked and directed by computer, computer itself is a weapon to target the military and entire system of the enemy State. An attack could eventually make the entire technology with deadly equipment against its controllers. An attack launched across the globe could massive damage. Globalization makes everything be globalized including the safe guards and security aspects of the nations too. Cyber crimes, Cyber attacks and cyber warfare have been rapidly increasing in the recent years with the advent of technology. At the outset, these attacks similar to be armed attack which is the subject matter of the law of warfare. Cyber warfare refers "to an unauthorized intrusion into a computer or a network, in order to commit crimes like hackers". It is organized by governments, and is incredibly sophisticated. The internet touches almost every part of our modern infrastructure from the power grid to the machines that produce our goods even our internet itself can be taken down. Cyber war isn't just an attack on a government, it can stop the entire nation dead for instance – Banking, communication Systems and further it has a severe impact on Health Sector also. Whenever it attacks on internet services it automatically prevents to provide all forms of health services to the people in where the maximum health services or depend on the internet facility. An attack could prevent missiles from finding targets or launching communications could be disrupted or cut off completely. After the first 'Stuxnet attack' on Iran in 2010, many international legal experts who helped to draw up a Non Atlantic Treaty Organizations (NATO), commented that 'the Stuxnet 10 attack against Iran was an illegal act of force' and it might have been 'Armed Attack' or 'Cyber War''. The

threat of cyber attack as a means for warfare—has proven to be an imminent threat and will undoubtedly have major implications for the future of applicable humanitarian laws. Despite the fact, that Geneva Conventions and Additional Protocols have had a great impact on States to its foster respect and enhancement of International Humanitarian Law, conversely it does not encompass any specific rules for prohibition of threat to use of force by using technology.

(b) *Urbanization of Warfare:* Contemporary warfare has a great impact of civilian population and their objectives which shall be protected by IHL during the conflicts situations. Presently, war is said to be urbanized. Hence, Urbanization of warfare is the contemporary issue faced by one of the biggest challenge to armed groups. Increasingly, fighting takes place in urban areas, and civilians bear the brunt of it. Unless circumstances do not permit, effective advance warning must be given of attacks that may affect the civilian population. The principles of distinction, proportionality and precautions are complementary, and all three must be respected for an attack to be lawful. Nonetheless, parties to conflict must take constant care to spare the civilian population in all military operations. These include troop movements and manoeuvres preparatory to combat, such as during ground operations in urban areas. The specific protection afforded to particular objects may also go beyond attacks. For instance, objects indispensable to the survival of the civilian population must neither be attacked nor otherwise destroyed, removed or rendered useless. This includes a city's drinking-water supply network and installation. Services essential to the civilian population in urban areas rely on a complex web of interconnected infra structure systems.6 The most critical infrastructure nodes within a system enable the provision of services to a large part of the population and damage to them would be most concerning when it causes the whole system to fail. Such nodes are also described as a "single point of failure". Services depend on the operation of people, hardware and consumables, each of which can be disrupted directly or indirectly. For instance, a damaged electrical transformer can immediately shut down the supply of water to an entire neighbourhood or hospital, drastically increasing the risks posed to public health and well-being.

(c) *Involving Multiple Non-State Armed Groups:* The principles of IHL applies both International as well as Non-International Armed conflicts. compared to International armed conflicts, the involvement of Non –State Armed Conflicts are more in case of Non-International Armed Conflcits.[10]To classify a situation of violence as a non-

10 Kelley, Morgan, "Challenges to Compliance with International Humanitarian Law in the Context of Contemporary Warfare" (2013). Independent Study Project (ISP) Collection. 1618. https://digitalcollections.sit.edu/isp_collection

international armed conflict, two criteria are widely acknowledged to be the most relevant: confrontations must take place between at least two organized parties and the level of violence must have reached a certain level of intensity. When many different armed groups are involved in violence, evaluating these criteria becomes increasingly complex. One particular scenario is that of "alliances" or "coalitions" of distinct non-State armed groups that appear to be fighting together against a State or a non-State actor. In such cases, if the level of intensity is determined by looking at each of the organized armed groups in their separate belligerent relationship with a State or another non-State armed group, the conclusion might be that the threshold of intensity required for non-international armed conflict is not reached in each and every relationship. The consequence would be that IHL does not apply to that relationship, and that the State would need to use law enforcement means (regulated by human rights law) to respond to the threat posed by that group. Yet, the reality of the situation is that it would be unrealistic to expect States to operate under different paradigms either the law-enforcement or the conduct of hostilities paradigm to respond to the different groups that operate together. In fact, these groups pool and marshal their military means in order to defeat the State. such cases of low-intensity conflict in which a weakened state has "left room for local militias and armed groups to operate, leading to environments where looting and trafficking, extortion and kidnapping have become profitable economic strategies sustained by violence and national, regional and international interests." These are all often flouted the aim of IHL.

In addition, the characteristics of violent non-State groups are wide-ranging, their members may include men, women and children who are recruited either forcefully or voluntarily, they may or may not effectively exert control over a physical territory, operate internationally or nationally, have ranging degrees of political motivation, use varying tactics such as guerrilla warfare in rural areas or urban violence against civilian populations, and rely on varying levels of resources. In spite of their diversity, violent non-State actors generally operate in the "illegitimate" sphere for purposes of domestic law, and are largely considered illegal and clandestine. Regardless of their characteristics, they are capable of endangering the lives of communities by "hindering humanitarian aid, planting landmines, recruiting and using child soldiers, and by trafficking and misusing small arms and light weapons". Additionally, their existence and contribution to non-international armed conflict often goes unacknowledged by the States under whose territory they operate.

(d) *Privitisation of Warfare:* The re-emergence of private enterprise in warfare is an uncontested reality. States are increasingly hiring private

military companies to take action in areas where armed conflicts are happening. The norm of privatization would cross into the realm of military services is not surprising. The current revival in private military security is broadly consistent with the prevailing orthodoxy of economic rationalism, with its emphasis on downsizing government and large-scale privatization.[11] The prevailing sense in the global community is that it would be better to use such companies. Ever since the 2003 incursion and occupation of Iraq, with Coalition forces helped by the presence of more than 20,000 individuals engaged by private military companies (PMCs), the role, status, responsibility and guideline of those companies has been hotly debated. Military operations in both Iraq and Afghanistan have brought to light the strengths and weaknesses of the United States Armed Forces. Although the current military organization has advanced capabilities for carrying out armed combat, the organization is not large enough to support all of its ancillary needs.

Private military companies (PMC) are businesses that provide specific services related to war, together with battle operations, strategic plan, intelligence compilation, operational and logistical support, training, acquiring military equipment and maintenance. Private Military Companies are not new phenomena. They have had existed as long as war itself. But their effects were often in doubt and controversial which gave them a rather wrong reputation. In current times, PMCs have been well-known in the media, creating the dispute on both their legality and practicality. Many of these firms operate in a gray zone, without parliamentary oversight and official military codes of conduct. These firms are in many aspects outside the regulatory systems of the home country and of the international community, often operating in weak states (e.g. Congo, Sierra Leone, Angola, and Columbia) where the accountability before the law is in some cases less than none. In Amnesty's International 2006 Annual Report it is stated that "US policies pursued in the name of security undermined human rights both within the USA and in many countries around the world. Hypocrisy and a disregard for basic human rights and international legal obligations continued to mark many privatized military operations, including the USA's 'War on Terror'". The same report states that U.S. and other military forces have used excessive coercion, resulting in the death of innocent civilians, with impunity. According to Amnesty International, the so-called 'War on Terror' is in fact of major concern in relation to human rights violations globally.

11 Sinclair Dinnen, Trading in Security: Private Security Contractors in Papua New Guinea, in Dinnen, Ron May, and Anthony J. Regan, eds., Challenging the State: The Sandline Affair in Papua New Guinea (Canberra: National Centre for Development Studies, 1997), p. 11.

(e) *Terrorism:* The increase in the attention being paid to humanitarian law in recent times is the result mainly of the struggle against terrorism. The horrifying attacks of Terrorists in all over the world have raised questions about the efficacy of international humanitarian law in dealing with contemporary forms of violence, and in particular terrorism. It has been asked whether humanitarian law was actually capable of addressing "terrorism." Though, Terrorism directly do not come within the ambit of the Geneva Conventions and its Additional Protocols, but It is a basic principle of international humanitarian law that persons engaged in armed conflict must at all times distinguish between civilians and combatants and between civilian objects and military objectives. International humanitarian law also includes specific rules such as the prohibition against deliberate or direct attacks against civilians and civilian objects, against indiscriminate attacks and the use of "human shields". The taking of hostages is also prohibited. Furthermore, that international humanitarian law specifically prohibits "measures of terrorism" and "acts of terrorism" against persons in the power of a party to the conflict.

(f) *Lack of Political Will:* The most important current challenge is the lack of political will of belligerent parties with to respect IHL.

In the today's scenario, compliance of IHL fundamental principles are challenged. The last years have seen several regionalized conflicts continue their downward spiral of violence, often fuelled by serious IHL violations. Yemen, which has become the world's largest humanitarian crisis, is facing epidemics, drug shortages, starvation and a demolished infrastructure. The pain of the conflicts in Syria continues to be felt, as displaced survivors of harrowing violence suffer appalling living conditions, separation from their families, and uncertainty about their future. Across the Sahel and Lake Chad regions, armed conflicts have continued to both spur and feed off inter communal tensions[12]. Violence during the 2018–2019 Gaza border protests had resulted in the deadliest days of the Israeli-Palestinian conflict since the 2014 Gaza War. The predominant nature of contemporary conflicts often flouted the norms of IHL.. These conflicts effects on health, education, infrastructure, the economy and society – accumulate with the passage of time and the absence of space to mend. Many of these contexts have been "forgotten": they are underreported in the media and neglected by decision-makers, leaving millions to suffer without hope. In many instances, the fighting has caused massive displacement, leaving family members with no knowledge of one another's whereabouts or well-being. Many of those who have been displaced are undergoing a seemingly perpetual distress.

12 This is 2019(fifth) ICRC report on international humanitarian law (IHL) and the challenges of contemporary armed conflicts .

To encounter all these issues, there is a need for re-evaluate of IHL and its repercussion by the State parties. The Role of Non-Government Organisations such as International Committee of the Red Cross, Human Rights Watch, and Amnesty International is crucial further enhancement of IHL. The Activities of each should be regarded as indispensible toward furthering compliance with IHL. First, it must be acknowledged that the very task of disseminating the rules of IHL to armed non-State actors is a challenging prerequisite for its understanding and ultimate application. Indeed, "an important step in enhancing compliance with international norms is to ensure that the relevant Armed Non-State Actors (ANSA) is aware of its obligations under international law. There is now, an overtly apparent and inherent necessity for IHL to become more flexible in the context of contemporary conflicts.

STABILIZATION CLAUSES IN INTERNATIONAL INVESTMENT LAW: BEYOND FAIR AND EQUITABLE TREATMENT

Priyanka Parag Taktawala*

ABSTRACT

Stabilization clauses are those provisions in the contracts that are used to accommodate the risk of changes in regulatory framework for investors. Because of their nature of safeguarding interests of investors, these stabilization clauses causes tension which interfere with the state's regulations of public interests which include human rights or sustainable development. The stabilization clause debate relates to general coherence between the rights of investors and legitimate public interest under the international investment law. The public criticism regarding the one-sidedness of investment law and protection of rights of investors without protecting the human rights and sustainable development is increasing. Some scholars are questioning the contribution of investment law and its relation to sustainable development and its effect on rule of law. The whole purpose of investment law is the protection of economic and human rights like freedom to trade or carry on business, property rights which are related to these business activities and non-discrimination. Other issues relating to human rights which touch upon environmental and social issues, which are highly relevant for development and sustainable economy, they are not subject to investment law in the first place because they belong to other domains of law like environmental law. Such delimitation is artificial because these domains overlap with the investment protection standards and therefore influence the investment and trade. Most of the parties to these international investment agreement or WTO are signatories to one of the core human rights treaties and therefore they are bound to the investment

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and also the human rights regimes. Therefore, "hard cases" can occur, when legal principles of different countries collide with each other and there are no rules which determine the case. In such cases, resolution of the case depends on the "pre-analytic vision of law". Investment protection standards are broad and will leave a scope of interpretation which allow reconciling state obligations of states in environmental, social and investment fields. This tension of investment protection in the fields of human rights and environmental laws seems to arise from the legal interpretation.

This will change when the stabilization clause comes into the picture. It creates a tight legal regime for the host state and demands certain legal answers when it balances these overlapping fields of investment law and public interest regulations. This paper will give an insight to debate the stabilization clauses and explores possible leeways to reconcile conflicts which are related to public interest of the host state and to conclude with the stabilization clauses and providing for compensatory or freezing of laws if. Failure to fulfil the purpose of investment protection which they can provoke instead of other legal remedies. Strict application of this stabilization clause can damage the business rather than protect the interest of the business. Arbitrators should be aware of such effects while dealing with stabilization clauses in investment law and states should use general stabilization clauses with caution. Provisions should be carefully tailored so that it responds to actual interests in incentives and security might suit the over all interest of all concerned parties.

Key Woirds: Stabilization Clause, Investors, regulatory framework

STABILIZATION CLAUSE: BACKGROUND AND DEBATE

Current features of stabilization clause:

Information regarding stabilization clause in contractual practice is quite difficult to find because investor-state agreements are not accessible. Special Representative of the Secretary- General for business and human rights (SRSG) and International Finance Corporation (IFC) have studied the role of stabilization clauses in contracts and in particular, their negative influence on host state and human rights compliance[1] . definition of stabilization clause is " contractual clauses in private contracts between investors and host state that addresses the issue of changes in law in the host state during the life of the project"[2]. It identifies major type of modern stabilization practices. (1) "freezing clause" which exempt any investment from new laws' application, it "freezes" the law of the host state either entirely or limited to a few fields (Fiscal issues); (2) "equilibrium clauses" which cover the financial losses

1 Tobacco Plain Packaging Bill 2011 (Cth) (Austl.), available at http:// www. comlaw .gov.au/Details/C2011B00128.

2 Alison Rourke, Australia Passes Plain packaging Cigarette Law, THE GUARDIAN, Nov.10, 2011, http://www.guardian.co.uk/world/2011/nov/10/australia-plain packaging-cigarettelaw.

related to changes in laws and (3) "hybrid clauses" which are a combination of economic equilibrium and freezing clauses which complement each other and provide an additional layer of protection of stabilizing the contract[3]. Hybrid clauses have left it on the discretion of the parties whether economic equilibrium is achieved through regulatory change exemption or other alleviation of impacts which are unfavorable[4] like adaptation of contracts or compensation. This classification which has been proposed is a rough description of the characteristics of this stabilization clause; it is not necessary to be in link with the terminology in practice[5].

Freezing clauses are the "classic approach" to stabilize the contract for investors. This clause freezes the law as in force of date of conclusion of contract[6] or to determine that the laws which might impose a higher rate in future or progressive rates of tax shall not apply to the company[7]. some freezing commitments provide that the contract will apply as lex specialis over subsequent or current legislations and provisions and will be applicable only if they are consistent with the contract. Other clauses might insulate the relationship from adverse effect of the contracr. Though the freezing clause "freezes" the right to regulate the investment contract by the host state and turn any adverse action of the state illegal, these clauses do not guarantee the state's exercise of soverign authority in the interest of the public. However, the aggrieved parties are entitled to a higher amount of compensation if there is a violation[8]

An alternative to the freezing clause is economic equilibrium clause. This includes negotiation provisions which vests the recourse to a third party arbitration for determining adaptations[9]. Some clauses leave a room for flexibility like threshold for financial losses, restrictions to measures against discrimination, obligation to mitigate costs of compliance or operation of clause in favor of the host state and the investors[10]. From the point of view of legal professionals, economic equilibrium clauses are not of significant problem because they don't prevent the regulations of the host state as long as the economic equilibrium is restored[11]. Freezing clause limits state sovereignty and also convert any action of the state which is adverse, as

3 Ibid
4 Philip Morris Asia Ltd. v. Australia, UNCITRAL, Notice of Arbitration (Nov. 21, 2011), available at http://italaw.com/documents/PhilipMorrisAsiaLimited_v_Australia_NOA_21Nov2011.pdf.
5 Ibid
6 Ibid
7 Agreement between the Government of Hong Kong and the Government of Australia for the Promotion and Protection of Investments, Austl.-H.K., Sep. 15, 1993, 1748 U.N.T.S. 385, available at http://www.legislation.gov.hk/IPPAAustraliae.PDF.
8 Ibid
9 Ibid
10 Ibid
11 Ibid

illegal. From the point of view of politics, although it provides for greater flexibility and are less intrusive regarding the state's sovereignty, this clause can be costly for the host state. Restoring the economic equilibrium can lead to a comprehensive claim for damages and breach of freezing commitments[12]. Other than this freezing clause, economic equilibrium clause is triggered only when a minimum threshold is met- where the equilibrium is affected[13]. Most cited advantage of economic equilibrium clauses is the contribution to stabilize the investor state relationship. It is also contended that re-adjusting the equilibrium and negotiations maintain a fair atmosphere when it would otherwise appear that the tension between the host state's interest of regulations and expectations of the investors which would amount to conflict and breach of the contract[14] . this is the reason why some scholars attribute negotiation clauses to the general advantage to keep the state's sovereignty intact and in protecting the investor against the amendments of law[15]. Some see this alleged positive influence of balancing provisions and negotiations clauses as critical, they point to the fact that they forget an unsettled legal situation open[16]. Recourse to arbitration and negotiations can put the legal obligations in question. According to some scholars, this hampers the stability of the contracts rather than promoting it[17], if the scope of stabilization clause is not specified, it leave the room for interpretation open.

STABILIZATION CLAUSES RATIONALE AND PRACTICE

The rational of stabilization clause is majorly risk management for foreign investors and investments. This clause is included in contracts which are related to capital intensive projects in foreign countries/ host states like extractive industry, public service projects (mining, electricity, oil, telecommunications, water and sewage) or infrastructure projects and also include a concession agreement, production sharing agreements and build, operate and transfer agreements[18]. These projects require large initial capital and over time become more profitable. The view of credit grantors on stabilization clauses is vital to mitigate the financial risk and particularly "non recourse financing" when the repayment is linked to the performance of the project[19]. Large projects which have longer periods of recovery of costs and

12 Yves Fortier & Stephen L. Drymer, Indirect Expropriation in the Law of International Investment: I know it When I See It, or Caveat Investor, 13 ASIA PAC. L. REV.79, 81 (2005).
13 Ibid
14 Ibid
15 Ibid
16 Venezuela and International Arbitration: Ick-SID, THE ECONOMIST (Jan. 19, 2012), http://www.economist.com/blogs/americasview/2012/01/venezuela-and-internationalarbitration.
17 Ibid
18 Ibid
19 Ibid

generation of profits like infrastructure investments, seek more guarantees so that the changes in conditions of investment do not harm the equilibrium of investment. Pre investment cost benefit calculations can be distorted significantly by environmental and social legislations enacted later e.g. relating to new standards of technology or healthcare and employment regulations[20]. Host states grant stabilization clauses for accommodating investors interests and to attract investments in future by providing for a high level of warranty[21]. This usage is fostered by the inclusion in model bilateral investment treaties that set out a certain standard to protect specific sectors like Energy Charter Model Host Government Agreement (HGA) on Cross Border Pipelines[22]

The UN General Assembly had issued various resolutions which emphasized on the sovereignty of the states and stressed on the need for fairness in sharing the benefits, technology transfer and solidarity in international investment relations[23]. Though some freezing clauses are "outdated" , they are commonly used. Some scholars consider them to be the best and secure from of stability in a contract[24]. In the present times, they are used a modern form like "lex specialis" , :intangibility" or "consistency" clauses[25]. Using these freezing clauses frequently by a host state with relations to different investors over a time span can cause administrative complexity because for each investment, another law is applicable which creates legal enclaves and administration has to keep track[26]. This can cause distortion in domestic inequalities, competition and tension within the country and form a challenge for developing countries where the administration suffers from scarcity of electronic equipment and resources, governance problems and difficulty in documentation and inspection. In developing countries, there are fundamental standards of human rights and environmental protection e.g health and safety, labour standards can be insufficiently enforced. Therefore, situations of environmental or social impact can persist against the concept of "legal freezing shields", investment contracts are in force for a longer duration of time[27]

Freezing clause do not feature in OECD contract countries. Limited economic equilibrium clauses address specific regulatory risks. In OECD

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20 Ibid
21 Ibid
22 Ibid
23 Ibid
24 Saluka Investments BV v. Czech Republic, UNCITRAL, Partial Award (Mar. 17, 2006), available at http://www.pca cpa.org/upload/files/SAL-CZ%20P artial % 20 Award % 20170306.pdf.
25 Wälde, T., Rule of Law and the Resource Industries Cycles: Acquired Rights vs the Pressures Inherent in the Political Economy of the International energy and Resource industries , forthcoming in Journal of World Energy Law & Business.
26 Ibid
27 Ibid

contracts, scope is restricted to discriminatory regulation and can exclude regulations on safety, public concerns and security, environmental and social legislations. Full economic equilibrium clauses which cover every changes in the regulations irrespective of its discriminatory effect or bona fide motivation are prevailing in major contracts with non- OECD countries e.g. power, water, infrastructure, transport and extractive industry. The difference between the conduct of developing states and OECD states is assumed that in OECD countries, risk which is related to change in laws are lesser than that in developing countries and hence require less stabilization protection[28]. The standard of environmental and social protection is also significantly lower, so if the increasing standards are not taken into consideration in the economic equilibrium, it could be more costly and has more risk involved.

POLITICAL CONCERN RELATED TO STABILIZATION CLAUSE

Stabilization clauses can guarantee recompense in their far fetching forms for bona fideactivities of the state that interfere with investment. However, state need to adapt their regulations to keep up with the pace of all needs and challenges that they face which includes participation in setting international standards and compliance with international standards. In AES v. Hungary, arbitral tribunal has stated that the legal framework is a defined subject which changes as it adapts to new circumstances everyday.

Stabilization clauses don't prevent the governments from regulating the public interest[29], freezing clauses don't exclude the host state's right to exercise its sovereign power[30]. Even if the states violate freezing clause and the commitments, it doesn't hinder the change in law but it triggers compensation for the unlawful activities[31]. The consequence of this stabilization clause is that changes in the law will come with a price which includes reasonable and bona fide regulation which doesn't discriminate or unnecessarily affect the investor.

With respect to long term investments like infrastructure or power projects and far reaching extent of guarantee of stabilization under the operation, changes in law would trigger higher amount of compensation which might come close to significant budget in developing countries. Even if it is left with the possibility of escaping payment of compensation by non application of subsequent legislation to any investment, effectiveness of that legislation can suffer as inequalities in competition can occur. Though clauses of economic balancing leaves more space for negotiations and flexibilities and can be a conducive to good practices, they provide for systematic compensation and restoration of estimated equilibrium by adapting the

28 Ibid
29 Ibid
30 Ibid
31 Ibid

contract, including changes for non- discriminatory and bona fide activities of public interest.

Independent of the actual enforcement, interpretation or scope, stabilization clause establishes legally protected expectations which can result in claims of compensation. Views of the civil society have expressed that concern that this can cause a "regulatory chill effect"[32] which would impair protection of human rights and implementations of environmental standard and disincentivize state to cooperate and progress with a view to achieve sustainable development. This presumption of "regulatory chill effect" is based on the effect of compliance which is a part of the purpose of law and the effect is independent of enforcement of rights by the investor[33] . binding laws create pre obedience till there is enforcement certainty that "stick" will not apply[34] . for avoiding costs, state will not enforce or exempt the investor from application of new laws, with the negative impact that might come along with it.

The situation is delicate where host states are poor developing countries. As countries with high business risks which involve far fetching freezing and equilibrium stabilization practice. Developing countries look for investments which are for development and they require foreign investment for cost intensive infrastructure projects. Because of lack of control mechanism, power accumulation and nepotism, officials can profit from investments and also accept conditions which are not in favor of public good or lack know how and experience when it comes to contract negotiations. One cant presume that investment contract reflects a thorough balance between public interest and investors right. Laws in developing countries might not be state of the art industry practice. Even if most of the developing states are signatories to human rights instruments and international standards of environment and also have a high level of implementation of legislations and need progressive implementation. Poor states are usually more vulnerable to high costs of compensation which can be triggered by environmental and social legislations and due to lack of institutions or non effective participatory processes, citizens of these states do not have access to remedies when they are adversely affected by these investment projects

STABILIZATION CLAUSES IN INTERNATIONAL ARBITRATION

Investment decisions which directly or indirectly deal with stabilization clause can be divided into 3 categories (1) more abundant concerns in early cases which addresses the question that whether stabilization clause could bind the sovereign to a commitment to not expropriate or whether they are a specific protection against unilateral arbitrary state action. (2) case in which

32 Ibid

33 Cheng, T., 2005, Power, Authority and International Investment Law , 20 Am. U. Int'l L. Rev. 465, at 470-499.

stabilization clauses are referred to indirectly in arguendo in order to dismiss claims against the regulatory action on the basis that in such cases there are no specific commitments to stabilization. (3) it addresses disputes where the stabilization clauses are directly at issue. In all these cases, the validity of the stabilization clauses as lex specialis commitment is not put in question by arbitrators. In contrary to this, ICSID tribunals seems to have adopted a favorable attitude towards such clauses. Tribunal in AGIP v Congo decided to place stabilization clause as a part of international law itself[35]. Tribunal in LETO v Liberia decided that such clause should be respected[36]. In CMS v. Argentina, tribunal noted that the discussion regarding the stabilization clauses are well known in the international community and asserted that such clauses ensure that the right can be invoked by the investors[37]

LEGALITY OF STABILIZATION CLAUSES

The first case which dealt with stabilization clause was examined in the context of expropriation and nationalizations in 1970s and 1980s. this typically involves the legal and binding nature of these stabilization clauses. Arguments surround the sovereignty of the host state and the limit to which stabilization clauses could "contract out" the sovereign power. This question has not yet completely been settled. In Texaco v. Libya , tribunal held that these stabilization clauses limit the sovereignty of the host state as it is exercising the sovereignty committed to waiving. Tribunal referred to UN General Assembly Resolution 1803 on Permanent Sovereignty of States over Natural Resources and noted customary international law and pacta sunt servanda[38]. In contradiction to this decision, tribunal in Liamco v Libya said that the sovereign right of the state to nationalize is lawful, provided that it provides adequate compensation[39]. Tribunal has presumed that the limit on the state sovereignty was a "serious undertaking" and hence can be presumed only if explicitly provided for[40]

In AGIP v Congo it was held that stabilization clause has been liberally signed by the governments and therefore doesn't affect the sovereign powers of the state and therefore the state can still regulate the investors which are not subjected to stabilization commitments[41]. Both these decisions pointed to the limitation of the "freezing" effect of the stabilization clause. In LETCO v Liberia, tribunal stated that the purpose of this stabilization clause is to

34 Ibid
35 Ibid
36 Ibid
37 Ibid
38 Ibid
39 Ibid
40 CME v Czech Republic Partial Award, 13 September 2001, [611]
41 Public Statement on the International Investment Law Regime, http://www.osgoode.yorku.ca/public_statement/

protect investors against the arbitrary actions of the state and cant completely impair the sovereign powers of the state[42].

Stabilization clauses do not guarantee against lawful expropriation or nationalization. They impose an obligation on the state to act in good faith and give rise to obligation for compensation in case there is a breach[43].

In respect to the outcome of the arbitration there is no difference among approach of tribunals in this matter. In all these cases, obligation for paying compensation is because of the breach by the state of the stabilization clause. Though Texaco case has stated that a wrongful act requires restitution in integrum this is not enforceable in practice[44]. The difference in the approaches adopted can play a vital role in determining the amount of compensation which varies for lawful and unlawful acts[45]

The other jurisprudence which deals with the legality of this stabilization clause is under the domestic law. Constitutional provisions under the domestic law can stand in the way of the stabilization clause which depends on which law is applicable to the contact between the investor and state. The choice of domestic law is enough for securing sovereign power of the state in changing the law in respect to the due diligence effort which is put by the investor indicating serious doubts over the state's ability to grant guarantee under the domestic law[46].

Because of the international character of arbitration and the applicability of international rules to aliens, tribunals rely on international law while adjudicating the case. In Revre Copper v. OPIC case, this case was regarding the stabilization clause which prohibited increase in taxes and other levies and ordered that there can be no derogation from the right to operate[47]. Government of Jamaica issued a "bauxite levy" and thereby increased the royalties which were paid by Revere. Supreme Court declared the stabilization clause to be "void ab initio" . the tribunal held that application of the domestic laws doesnt exclude the application of the principles of public international law which governs the responsibility of the States for all injuries to aliens, specifically when the question is whether the actions which are taken by the government are contrary to and are damaging the economic interests of the aliens and are in conflict with the assurances which are given in good faith to such aliens to induce them in making the investments and hence affected by the action.

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42 Ibid

43 Ruggie, J., (May 2008). Stabilization Clauses and Human Rights. International Finance Corporation. http://www.ifc.org/ifcext/media.nsf/Content/ Stabilization_ Clauses _ Human_Rights

44 Ibid

45 Ibid

46 Coelho, B., Gallagher K.P, (2010, January). Capital Controls and 21st Century Financial Crises: Evidence from Colombia and Thailand. PERI Working Paper No. 213. http://www.ase.tufts.edu/gdae/policy_research/KGCapControlsPERIJan10.html

47 Ibid

It was also contended that the international character of the contract was because the contract was a part of the international process of economic development in the lesser developed countries which required contractual guarantees to secure the private parties and the governments of these developing countries are willing to provide guarantees to promote economic development. this was confirmed by the fact that the government of the home state of the private parties are interested in these agreements and hence provided guarantees for the investment. On the basis of this, tribunal upheld the legality of the clause and also emphasized that under the international law, commitments which are made in favor of foreign nations are binding irrespective of the power of the parliament and other organs of the government under the domestic laws to override such commitments[48]

INDIRECT REFERENCE TO STABILIZATION CLAUSES

In today's investment arbitration scenario, possibility of having claims regarding expropriation clauses based on stabilization clauses has increased manifestly since expropriation standards are well established at the international law, considering the network of IIAs now. The application of new legislations by host states to investments which are covered by stabilization clauses could be considered as expropriation of the right not subjected to the new legislation without compensation[49]. It is a well established fact that rights which arise from contracts can amount to investments and therefore be subjected to protection against expropriation which is envisaged by IIAs. The legal value of the stabilization clauses in relation to investment treaty arbitration that involves expropriation was discussed in the case Methanex v United States. In this case, stabilization clause was linked to measure tantamount of expropriation[50]. Tribunal held in this case that non discriminatory regulation for public purpose enacted according to due process which affects the foreign investment is not deemed to be expropriation and compensate unless certain commitments are given the government. The tribunal relied on the lack of commitments as a ground to dismiss the expropriation claim. In AES v Humgary, the Energy Charter Treaty case, tribunal said that the lack of stabilization clause to help it determine that there was no legitimate expectation that the present regulation will not be changes by the state. The claim that the legitimate expectation of the investor was frustrated was included in the broader claim of failure by the state to provide fair and equitable treatment to the investor. Tribunal found that there was no legitimate expectation that the pricing will

48 Ostry,J., Ghosh, A., Habermeier,K., Chamon, M., Qureshi, M., Reinhardt D., (2010, February). Capital Inflows: The Role of Controls. International Monetary Fund. http://www. imf.org/external/pubs/ft/spn/2010/spn1004.pd

49 As argued by Abba Kolo and Thomas Wälde, Renegotiation and Contract Adaptation in the International Investment Projects: Applicable Legal Principles and Industry Practices 1 Transnat'l Dispute Mgmt 1 (2004).

50 Ibid

not be reintroduced[51]. The tribunal also said that the duty of providing stable environment for investor is not to be confused with the stabilization clause.

There was a similar approach by the tribunal in Parkerings v. Lithuania. The tribunal acknowledged the legitimacy of the investors expectations if the host state has made a promise explicitly or implicitly which was taken into account by the investor while making the investment[52]. Then the tribunal dismissed the claim that the state failed to accord fair and equitable treatment stating that what is not allowed is for the State to be unfair, unreasonable and inequitable in exercising the legislative power.

DIRECT APPLICATION OF STABILIZATION CLAUSES

This is the third category of cases which refers to those cases where stabilization clauses were the dispute in itself. CMS Gas Transmission v. Argentina case involved conjunction between umbrella and stabilization clauses which suggests that violations of contractual stabilization obligations is a breach of the investment agreement[53]. Claimant relied on an undertaking that the tariff structure will not be frozen or be subjected to any other regulations or price controls and the commitment that the rules governing the license will not be changed without the consent of the licensee[54]. Tribunal held that such undertakings were valid and enforceable under the umbrella clause of the International Investment Agreement.

Its should also be noted that the part of the award of CMS that addresses the findings of the tribunal concerning the umbrella clause was annulled later by the ad hoc Committee, on the grounds that the tribunal had failed to clear the doubt that how it concluded that CMS, a minority shareholder of the licensee, claimed on the basis of obligations which were undertaken towards the licensee and not CMS. Validity of the stabilization clause was not to question or challenge Argentina in the proceeding of annulment.

These cases show that the enforcement of the stabilization clauses can be based on umbrella clauses under international investment treaties. The purpose of the clauses is to put commitments which are entered into by the state with investors under the "umbrella" of the international investment agreement[55]. Scholars have also observed that there is great diversity in the interpretation by the tribunals to such clauses and the wordings they chose for themselves. There is no single concept of the umbrella clause, instead there are multiple umbrella clauses because of which there is more or less extensive reading required. Therefore, it depends on the context and

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51 Ibid
52 Ibid
53 Ibid
54 Cheng, T., 2005, Power, Authority and International Investment Law , 20 Am. U. Int'l L. Rev. 465, at 470-499.
55 Ibid

wordings of an umbrella clause to which degree it can be understood to elevate commitments to protect international treaty.

The view of the tribunal is that stabilization clause represents an additional protection which is undertaken by the state which is a sovereign. Failure by the host state to adhere to the commitment will give rise to claim under the IIA for which the tribunal will have jurisdiction. This interpretation has been criticized for being nit far reaching. A scholar criticized the narrow interpretation which was given to the umbrella clause as an instrument for securing jurisdiction under international investment arbitration, advocating that contractual claims which are undertaken by the state as a merchant will follow the scope of the clause.

The tribunal held that even if stable interpretation of the legal provision is absent, against which it could judge any development, stabilization clause will allow it to make assessment of the new interpretation if it is reasonable. It is to say that, if the tribunal thinks that even when a stable interpretation cant be established by the parties as a matter of proof, though the arbitrator might not decide what the "correct" interpretation of the domestic legal provision is, they might put the new interpretation given by domestic authority the test of reasonableness.

Scholars have referred to stabilization clause as a species of economic equilibrium or stipulated economic balancing provision. The tribunal chose to refer to such provision as "tax indemnification clause". This distinction seems to suit the will of the tribunal to regard this clause as a thing that is agreed by the private parties in such similar circumstances and not afforded by the state as a guarantee. Claimant said that the non-observance of this stabilization clause is a violation of the umbrella clause which is accepted by the tribunal to determine its jurisdiction. [56]

CONCLUSION

All decisions which are reviewed directly or indirectly involve stabilization clause and have explicitly or implicitly recognized validity of these clauses and gave rise to the right to compensation which includes the case of legitimate public purpose and a "bona fide" regulation. It should also be noted that the decisions which deal directly with stabilization clauses revolve around tax and tariff cases. Arbitrators were faced with troublesome cases that touched upon these stabilization clauses regarding environmental regulations or human rights. Arbitration decisions suggest that these stabilization clauses can fix the position of the investors to zero risk and no flexibility in such cases. This will go beyond the nature and extent of investment law protection because it is anchored by International Investment Arbitration.

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56 Ibid

Sovereignty of the state is the starting point of any reasoning. Recent arbitration has led to a limited principle and a balanced approach when there is involvement of conflicting public interest. tribunals have referred jurisprudence of European Court of Human Rights for interpreting standards of expropriation. If there exists a reasonable and proportional relationship between the charge imposed on investor and the aim is realized by any expropriating measure, the state measure is not expropriation and therefore will not attract compensation. Arbitrators depending on their interpretation can apply a narrow concept of "legitimate expectations", standards are applied within the framework of IIA and leave room for a balanced interpretation. While discussing "frustration of investor's legitimate expectations" tribunal said that if it is taken too literally, a narrow interpretation will impose obligations on the host state which will be unrealistic and inappropriate. Tribunal applied the test of proportionality and weighed the Claimant's legitimate expectations on one hand and Respondent's legitimate interest on the other. Other tribunals have introduced a counter-balance on legitimate expectations which are guaranteed upon due diligence on the side of investor.

Host state's liability to frustrate the legitimate expectations of the investor should be offset by the investor's lack of due diligence. Though the host state was responsible for breaching fair and equitable treatment standard, the Claimant had contributed in damaging because of negligent conduct. Tribunal said that BIT is not an insurance against commercial risk. The expansive notion of legitimate expectations can be circumscribed by the concept of "investor conduct" which is reflected in investor duties like (i) duty to refrain from unacceptable conduct (ii) duty to invest after gaining adequate knowledge of this risk (iii) duty to conduct business in fair and reasonable manner.

Given the broad aspect of international investment protection standards, there is enough room for interpretation which takes into account individual rights and public interest in "hard cases" when the principles collide and there are no rules to determine the case e.g. change in law is not applicable to foreign investor and trigger negotiation and compensation. Cases suggest that stabilization clauses convert the nature of newer investment protection laws because it is developing over the last decade upside. Arbitrators have cleared that investors bear the risk of non-discrimination regulations for public purpose or the fact that laws will evolve over time. They have stated explicitly that the host state's commitments like stabilization clause has shifted the financial burden of investments regulations on the state. Therefore, the general presumption of the right to regulate it at no price under the general standards is false. Public law character which is reflected in arbitration concerning expropriation and fair and equitable treatment is converted into private law by ignoring the state's role as a public entity.

Investor is let off the hook of the game between public interest and private rights of which he will be part in the public state relationship. This investor state law relationship can be elevated to international level of IIA protection through umbrella clauses in treaties or internationalizing the effect of stabilization clauses. non observance of stabilization commitments can be interpreted as expropriation of rights within broader context of international investment agreement or violate legitimate expectations. Another legal effect at international level can occur through the most favored nation principle.

PATENTABILITY OF PHARMACEUTICAL DRUGS, MEDICINES, VACCINES AND ITS IMPACT

Ms. Shubhalakshmi P*

ABSTRACT

Intellectual Property is a special kind of property one can acquire by using his knowledge, skill and mental ability for the invention of a new thing, or by writing down the ideas in a systematic manner, or by composing, designing, performing some innovative practices which was not done earlier. Even invention of medicines, vaccines also considered as wonderful contribution to the mankind during the outbreak of pandemics like COVID-19. Whatever innovation made by an individual or by a company on pharmaceutical drugs, medicines, vaccines are patentable in nature. But those invention should have novelty and process of invention not to be copied. There are different kinds of patents granted to pharmaceuticals like drug compound patent, formulation or composition patent, synergistic combination patent, technology patents, polymorph patents and biotechnological patent.So, pharmaceutical products, medicines, vaccines etc can be protected through patents but, when pandemic like COVID-19 attacks the whole population of the world, then protection under IP laws for medicines and vaccines can be justified or not is the question of this hour. The prime motive of any innovation or granting patent should aim at the wellbeing of all along with granting benefits to the inventor or patent holder. That's why, patentability should not come on the way of health and welfare of mankind.

Key words: - Intellectual Property, Innovation, COVID-19, pharmaceutical drugs, vaccines and medicines, patentability.

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INTRODUCTION

To consider any invention to grant patent, it requires to fulfil three main conditions. One is novelty or invention must be new one which was not present before, second one is inventive steps for the invention. Third one is usefulness or industrial application.[1]

The goods which are invented will be traded in national and international level. The one who invented a particular good or thing will ripe the benefit of his efforts by putting it to the market. The Indian Patent Act 1970 governs patent system in India. This Act was amended in 2002, and again in 2005 to accommodate India's obligation as a signatory to the agreement on Trade Related Aspects of Intellectual Property.[2]

Whenever a new good or thing invented, inventor will apply for patent and once the patent protection is received, then such invented thing can be utilised and managed financially by the inventor or patentee only. Even in the case of vaccines, pharmaceutical drugs or medicines, only the pharmaceutical company that holds the patent is allowed to manufacture, market the drug and eventually make profit by using the same. Once the patent has expired, other companies can manufacture and start selling the same in the market.[3]

In case of life saving drugs or vaccines and medicines, patent holders right should not be exclusive because life saving drugs or generic medicines if become costly or difficult to be affordable for reasonable price then it will affect the whole mankind. So, legal right also should accompany certain ethical aspects, moral and humanitarian principles.

During these pandemics like COVID-19, all the countries of the world should come together and they have to support the experts to make innovation on medicines or vaccines and should make available to the patients who are suffering from the disease. Even if royalties provided are at a minimal level, the revenues would still be in billions of dollars as the population affected by the pandemic is large in number who are in need of treatment.[4]

REJECTION OF PATENT APPLICATION

If inventions are not fulfilling all the criteria to consider any invention for patent, then patent application will be rejected. If the invented goods, or

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1 CHANDRASEKARAN A., INTELLECTUAL PROPERTY LAW, (C. SITARAMAN AND CO.LTD, 2018 CHENNAI).

2 PAUL TORREMANS, INTELLECTUAL PROPERTY LAW, (2ND ED, OXFORD UNIVERSITY PRESS, GREAT BRITAIN).

3 ANANYA MANDAL, DRUG PATENTS AND GENERIC PHARMACEUTICAL DRUGS, NEWS MEDICAL LIFE SCIENCES,(MAY.23, 2020, 10AM) https://www.news-medical.net/health/Drug-Patents-and-Generics.aspx.

4 PRATIBHA M. SINGH, NEEDED: A PANDEMIC PATENT POOL, THE HINDU, MAY 01, 2020.

things, or of any medicinal preparation is already in existence or if the invented good is an admixture then patent cannot be granted. The process of preparation also very important for patentability. Under Patents (Amendment) Act 1999 a claim for a product in respect of an innovation relating to medicine or drug can be made subject to certain exceptions which are relating to chemical used in the manufacturing of medicine or drug.[5]

All of us know the decision of India's Supreme Court by rejecting Swiss drug Novartis patent for anticancer drug Gleevec in a ruling to support access to cheaper or affordable generic medicines. In the beginning the Patent office of India at Chennai, rejected the Novartis application for the reason that a minor change was made in the medicine Glivec as Gleevec and it will be difficult to get for cheaper price.[6]

One more patent application was filed for herbal composition effective for skin disorder and process of preparation which also includes extracts of certain subject matters of traditional knowledge like Neem, chaksu, etc. If it is patented then common people will get affected because affordability is not easy for the patented item or medicines.

IMPACT OF PANDEMIC AND STAND OF DEVELOPING NATIONS

We celebrate April 26th every year as World Intellectual Property Day, but this year it is not the day for celebration but to provide us an opportunity to reflect upon the role of intellectual property in the ongoing health crisis like COVID-19 and to dedicate intellectual property to find a solution to the same. The common public good must be the motive to create and recognise patent rights.[7]

At present, all the economies of the world are suffering from this pandemic, and least developed countries are the worst sufferers. Even, the United States of America and England also facing lots of problems and trying to combat this epidemic. Developing economies also putting an effort to find solution to come out from this crisis. By looking in the present condition we can say that, vaccines and medicines are the only permanent solution to set the human life back to normal condition. Be at home, wear mask, use sanitisers, maintain social distance etc are only precautionary measures which we have to follow but they are not permanent solution to the problem which we are facing in this juncture as a result of out break of COVID-19.

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5 NARAYANAN P, INTELLECTUAL PROPERTY LAW, 19,(3RD ED, EASTERN LAW HOUSE, NEW DELHI).

6 PADMA TV, INDIA COURT RULING UPHOLDS ACCESS TO CHEAPER, GENERIC DRUGS, NATURE MAGAZIN, APRIL 1, 2013.

7 SHIKHA GOYAL, WORLD INTELLECTUAL PROPERTY DAY 2020: CURRENT THEME, HISTORY AND FACTS,(22ND MAY 2020, 11AM) https://www .jagranjosh .com/general-knowledge/world-intellectual-property-day-1524662348-1

Usually developing economies like India, Brazil, Argentina etc,develop their own Intellectual Property Laws by facilitating people to have access to cheaper generic medicines than the patented version of the same medicine. But developed countries make allegation against these methods and force them to revise the IP laws. For instance, the Government of Argentina developed IP laws to provide generic medicines to the needy of the country in affordable price but the US made an allegation for the same. Argentina made to revise its IP law for the pressure of the US and as a result later when there was economic crisis in Argentina,they suffered a lot in need of low-cost medicines to come out from sufferings. Even the US challenged the IP laws formulated by Brazil still Brazil did not revise its IP law but continued to provide health treatment and generic medicines in affordable price.[8]

WAY TO FIND SOLUTION

Now Governments and International Organisations need to arrive a consensus in advance to prevent exclusive claims on medicines if prepared in the wake of COVID-19. Invention should benefit patients as well as whole world. But there will be a question on the part of inventor or patentee that what benefit he can derive from his invention. Yes, there are several tools under TRIP's itself like compulsory licensing which are available to access medicine which is patented one.[9]

According to Paul Hunt, UN Special Rapporteur on the Right to Health, human rights can play a positive role in defining national trade policies that are equitable, attentive to the particular needs of the most vulnerable and respectful of human rights. He has stated that, a country should be able to enjoy essential medicines and life-saving dugs with help of trade policies. And, developing country should use available TRIP's flexibilities to ensure availability of low-cost versions of the drug and it must be accessible to all within the country, especially those living in poverty.[10]

Recently, Cancer Patients Aid Association requested the health ministry to revoke the Indian Patent on Remdesivir, a potential anti-viral drug under testing for coronavirus patients. This medicine produced by Gilead Life Sciences. Now several drugs are in the clinical trial stage and combination of drugs used to treat HIV that is Lopinavir and rotonavir also tested to combat SARS and COVID-19. Drugs to treat Hepatitis-C, Ebola, also tested in this regard.

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8 24 CAROLINE DOMMEN, 'RAISING HUMAN RIGHTS CONCERNS IN THE WORLD TRADE ORGANIZATION - ACTORS, PROCESSES AND POSSIBLE STRATEGIES,' HUMAN RIGHTS QUARTERLY, 13 (JOHNS HOPKINS UNIVERSITY PRESS).

9 DR.WADEHRA B L, LAW RELATING TO INTELLECTUAL PROPERTY, 38 (5TH ED, UNIVERSAL LEXIS NEXIS, HARYANA2019).

10 CAROLINE DOMMEN, TRADE AND HUMAN RIGHTS, TOWARDS COHERENCE, INTERNATIONAL JOURNAL OF HUMAN RIGHTS, (MAY 23, 2020) https://sur.conectas.org/en/trade-human-rights-towards-coherence.

CONCLUSION

To conclude, we can say that, there are number of patents granted for process of preparation as well as invention of pharmaceutical drugs and vaccines. Medicinal items also patentable in nature provided they fulfil all the basic requirements for patentability. But, patentability should not come as hurdle on the way of protection of health and life. Medicines especially life saving drugs must be made available for cheaper price and they should be affordable for common man. Then only we can respect Intellectual Property and inventor in the real sense.