

LEGAL ASPECTS OF EXPANDING HUMAN PRESENCE BEYOND LOW EARTH ORBIT- SAFEGUARDS FOR UNDERDEVELOPED COUNTRIES

By Mehmood Pracha¹

“Earth is the cradle of humanity; one cannot live in the cradle forever” (Tsiolkovsky, 1954).

On 1st October 2005, Gregory Olsen an American millionaire became the third space tourist in history of mankind, he blasted off on a Russian Soyuz rocket to the International Space Station, on 5th October 2003 China became the third country after Russia (formerly USSR) and the USA to send a human into space. It was almost forty years ago on 12th April, 1961 that Yuri Gagarin a Soviet Cosmonaut aboard the spacecraft ‘Vostok 1’ became the first man ever to travel into space. On 21st July 1969 Neil Armstrong of USA became the first man to walk on moon. On 28th April 2001, Dennis Tito, a billionaire businessman from California, USA became the first paying passenger to go to outer space as a tourist. These are just a few mile stones in the history of human activities in space which are moving ahead in leaps and bounds with passing years, months and possibly days.

Human activities in the near earth or low earth orbit has increased to such an extent that today it poses a serious and imminent threat of collisions between operating satellites and other spacecrafts. So man has to move ahead farther than low earth orbit, Already Russia (formerly USSR), USA and Japan have moon missions, with China and India to follow soon, large scale human presence (including that of human made objects), beyond low earth orbit, which began more than three and a half decades ago is not a thing of distant future, but a reality of today which is expanding with alarming speed in all directions, I use the word ‘alarming’ instead of magnificent or spectacular because the advances in this field are not matched by corresponding advances in the international legal regimes to facilitate, regulate and standardize these activities in line with the basic features of International space treaties. In this presentation I would attempt to show that there is an emergent need to address this problem and the international space community must sooner than later, ponder on this with all sincerity, with a view to regulate these beyond low earth orbit human activities according to well settled international principle that space is the common heritage of all mankind. To protect the interests of the underdeveloped countries on one hand and to balance these interests with those of the advanced nations and the private parties who in order to invest huge resources needed in these fields for R&D, want to safeguard and secure their interests before venturing into such ‘high investment and uncertain returns’ ventures. I will try to give alternative methods to create a harmonizing balance between the two, seemingly conflicting interests.

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The reason to study the relevance of this presentation emanates from a relatively new concept in international law 'the common heritage of mankind'. Although the basic concept which leads to this has always been the intrinsic feature of all the religions and traditions which preach equality of mankind and that god created all humans and all of them are a family, this concept is found in almost all the major religions of the world and of late the basic concept of equality of all human beings is a universally accepted concept by all the modern governments of the world today. All the governments and societies today feel it their inherent responsibility to take care of the weak and the poor in their societies. The doctrine that the present advanced human civilization is a result of, the efforts, contributions and sacrifices of all the previous civilizations, nations and ethnic groups, also gives the entire human race a right over all assets which Mother Nature has endowed us with. If this principle of 'common heritage of mankind' was not made an intrinsic basic feature of the international principles governing the activities in the exploration and use of outer space then there would be no need explore the ways and mean to safeguard the interests of the underdeveloped countries, because in that eventuality the developed space faring nations would be free to exploit the benefits of the outer space to the best of their abilities. That such a free for all, ventures would lead to hostilities between the competing parties, gives another strong reason to ensure Outer Space as the common heritage of all mankind and of regulation of such activities by the entire human community. The inclusion of the underdeveloped nations in this loop of course would have a sobering and humanizing effect on these competing parties. Thus the concept of accepting the entire universe as the common heritage of all mankind (till such time we encounter the extra terrestrial life), with the present day national boundaries being recognized as properties appropriated by respective nations in exclusion of others for their personal use is the most practical and just one. Therefore the cosmos, the sun, the moon, the stars, all other celestial bodies, outer space, the territories of the Polar Regions, the sea-bed beyond national jurisdiction limits, the high seas and the air space above them have all been declared as common heritage of mankind by various international treaties. Even otherwise the common heritage of mankind concept for the entire universe including the present day countries is visible to some extent in various endeavors like free market economy, lifting of trade and travel barriers making inhabitants of different countries dependent on each other for their needs, further the environment, weather and disasters are common, cutting across the national boundaries, hinting that the universe in its entirety is the common heritage of mankind, notwithstanding the fact, that humans have created boundaries between each other.

The Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space Including the Moon and Other Celestial Bodies (the Outer Space Treaty) of 1967 is the basis of all further space treaties. The Outer Space Treaty along with the Agreement Governing the Activities of States on the Moon and Other Celestial Bodies (the Moon Agreement) adopted by General Assembly in its resolution 34/68 which entered into force on 11 July 1984 have provisions which can act as ample 'Safeguards' for protection of rights of Under Developed countries. These safeguards are, in fact seen as 'impediments' by the some of the developed nations and the private parties in the growth of space activities because they limit the right of ownership and talk of sharing of

profits with all the nations regardless of their participation in the exploratory endeavors. I would be dealing with this, in some detail later.

The role of private sector participation in advancement of space activities has been universally accepted; even the most advanced and richest nations cannot sustain their space programs without the participation of private sector. United State has been the first country to recognize this. **National Security Decision Directive Number 42, 'National Space Policy, July 4, 1982'**² states “[2] E : The United States encourages domestic commercial exploration of space capabilities, technology and systems for national economic benefit. These activities must be consistent with national security concerns, treaties and international agreements.”

US has enacted a full fledged Space Commercialization Promotion Act of 1996 to promote commercialization and privatization of Space activities. ESA, Russia, Australia, India all have realized the inevitability of commercialization of space activities. The absence of specific property or commercial rights is definitely seen as a big impediment by private sector, before going full throttle in investing in space activities. No doubt exploitation of space assets and resources is today is the most viable method available to mankind to sustain its huge population especially in view of already diminishing natural resources on earth. World population is expected to be about nine billion by the year 2050. There are also other unmanageable hazards such as asteroids; global weather change due to global warming. Exploration and exploitation of Outer Space thus seem to be the only potent alternative available to mankind, to obtain unending resources for not only its sustenance but also for future habitation. As mentioned above, private participation is very necessity for future space program; private parties in turn feel discouraged to invest because of the provisions of the present legal regime, 'being the common heritage of mankind, in space therefore there is absence of property and commercial rights.' The only way thus available to come out of this vicious circle is to strike a balance between these two conflicting interests. 'The principle of Space being the common heritage of mankind' and the second 'property and commercial rights for private parties and advanced state faring nations.' It is pertinent to state here that in my opinion that importance of each one of these conflicting interests cannot be undermined and both are equally important.

That space is a common heritage of mankind has been universally accepted principle and amply demonstrated in the outer space treaty of 1967 which states in the preamble

- Recognizing the common interest of all mankind in the progress of the exploration and use of outer space for peaceful purposes.
- Believing that the exploration and use of outer space should be carried on for the benefit of all peoples irrespective of the degree of their economic or scientific development.
- Desiring to contribute to broad international co-operation in the scientific as well as the legal aspects of the exploration and use of outer space for peaceful purposes.
- Believing that such co-operation will contribute to the development of mutual understanding and to the strengthening of friendly relations between States and peoples.

² <http://www.hq.nasa.gov/office/pao/History/nsdd-42.html>

Article-I The exploration and use of outer space, including the moon and other celestial bodies, shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development, and shall be the province of all mankind.

Outer space, including the moon and other celestial bodies, shall be free for exploration and use by all States without discrimination of any kind, on a basis of equality and in accordance with international law, and there shall be free access to all areas of celestial bodies.

There shall be freedom of scientific investigation in outer space, including the moon and other celestial bodies, and States shall facilitate and encourage international co-operation in such investigation

Article II Outer space, including the moon and other celestial bodies, is not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means.

Article III Parties to the Treaty shall carry on activities in the exploration and use of outer space, including the moon and other celestial bodies, in accordance with international law, including the Charter of the United Nations, in the interest of maintaining international peace and security and promoting international co-operation and understanding

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Article X In order to promote international co-operation in the exploration and use of outer space, including the moon and other celestial bodies, in conformity with the purposes of this Treaty, the States Parties to the Treaty shall consider on a basis of equality any requests by other States Parties to the Treaty to be afforded an opportunity to observe the flight of space objects launched by those States. The nature of such an opportunity for observation and the conditions under which it could be afforded shall be determined by agreement between the States concerned

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The common heritage principle is more clearly stressed in the Moon Agreement;

-Recognizing that the moon, as a natural satellite of the earth, has an important role to play in the exploration of outer space,

-Determined to promote on the basis of equality the further development of co-operation among States in the exploration and use of the moon and other celestial bodies,

-Bearing in mind the benefits which may be derived from the exploitation of the natural resources of the moon and other celestial bodies,

Article 4

1. The exploration and use of the moon shall be the province of all mankind and shall be carried out for the benefit and in the interests of all countries, irrespective of their degree of economic or scientific development. Due regard shall be paid to the interests of present and future generations as well as to the need to promote higher standards of living and conditions of economic and social progress and development in accordance with the Charter of the United Nations.

2. States Parties shall be guided by the principle of co-operation and mutual assistance in all their activities concerning the exploration and use of the moon. International co-operation in pursuance of this Agreement should be as wide as possible and may take place on a multilateral basis, on a bilateral basis or through international intergovernmental organizations

Article 6

2. In carrying out scientific investigations and in furtherance of the provisions of this Agreement, the States Parties shall have the right to collect on and remove from the moon samples of its mineral and other substances. Such samples shall remain at the disposal of those States Parties, which caused them to be collected, and may be used by them for scientific purposes. States Parties shall have regard to the desirability of making a portion of such samples available to other interested States Parties and the international scientific community for scientific investigation. States Parties may in the course of scientific investigations also use mineral and other substances of the moon in quantities appropriate for the support of their missions.

Article 11

1. The moon and its natural resources are the common heritage of mankind, which finds its expression in the provisions of this Agreement, in particular in paragraph 5 of this article.

2. The moon is not subject to national appropriation by any claim of sovereignty, by means of use or occupation, or by any other means.

3. Neither the surface nor the subsurface of the moon, nor any part thereof or natural resources in place, shall become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person. The placement of personnel, space vehicles, equipment, facilities, stations and installations on or below the surface of the moon, including structures connected with its surface or subsurface, shall not create a right of ownership over the surface or the subsurface of the moon or any areas thereof. The foregoing provisions are without prejudice to the international regime referred to in paragraph 5 of this article.

4. States Parties have the right to exploration and use of the moon without discrimination of any kind, on the basis of equality and in accordance with international law and the terms of this Agreement.

5. States Parties to this Agreement hereby undertake to establish an international regime, including appropriate procedures, to govern the exploitation of the natural resources of the moon as such exploitation is about to become feasible. This provision shall be implemented in accordance with article 18 of this Agreement.

6. In order to facilitate the establishment of the international regime referred to in paragraph 5 of this article, States Parties shall inform the Secretary-General of the United Nations as well as the public and the international scientific community, to the greatest extent feasible and practicable, of any natural resources they may discover on the moon.

7. The main purposes of the international regime to be established shall include:

- (a) The orderly and safe development of the natural resources of the moon;
- (b) The rational management of those resources;
- (c) The expansion of opportunities in the use of those resources;
- (d) An equitable sharing by all States Parties in the benefits derived from those resources, whereby the interests and needs of the developing countries, as well as the efforts of those countries, which have contributed either directly or indirectly, to the exploration of the moon, shall be given special consideration.

8. All the activities with respect to the natural resources of the moon shall be carried out in a manner compatible with the purposes specified in paragraph 7 of this article and the provisions of article 6, paragraph 2, of this Agreement

These provisions not only provide for the concept of Space as the common heritage of mankind and the co-operation between nation states but also provide a basic legal regime to implement the concept. The outer space treaty envisages the common interest of mankind as a whole in the exploration and use of outer space and that it should be carried out for the benefit and in the interests of all countries, irrespective of their economic and

scientific development. Thus it has been fully accepted and amply stressed by the international community that outer space and the benefits there from, belong to entire humanity as such and not just, to those countries and entities who are technically and financially capable of undertaking the exploration and exploitation of outer space. Article 11.7 (d) provides for special consideration for the interests of both the developing countries and those countries whose efforts have contributed directly or indirectly to the exploration of moon. Two other concepts, which have been stressed and accepted from the very beginning, are freedom of all countries to explore and exploit the outer space in accordance with international laws and that of international co-operation. Especially the moon agreement Article 11(5) speaks of establishment of an international regime to govern the exploitation of natural resources of the moon. Article 11(3) also covers up (in fact it clarifies the concept of state to include person and bodies under it) for a supposed lacunae in the Outer Space Treaty, that it is only applicable to states not individuals. In fact moon agreement prohibits any surface or subsurface of moon or any part thereof to become property of any State, international intergovernmental or non-governmental organization, national organization or non-governmental entity or of any natural person.

These outer space treaties evolved at the time of cold war and although these treaties were written with a lot of foresight, to cover the future exigencies. The situation has changed dramatically over last few years; various political, economic and technical developments have changed the entire scenario. Apparently one of the presumptions of the Outer Space Treaty that all these activities will be carried out by countries only, needs rethinking. Most of the countries have accepted that private participation is a must for the progress of space activities. Even otherwise, free market economy and privatization has been established as the present day norm favored and accepted by almost all economies of the world. Thus the commercialization and privatization of space activities has today, become not only permissible and desirable but also necessary for human advancement in this field. The moon agreement does in fact takes into account this aspect while debarring property rights claims of non-governmental entities, natural persons apart from States, governmental and intergovernmental organizations, to ensure that the doctrine of Moon and other celestial bodies being the Common Heritage of Mankind remain enforceable, and is not circumvented. On the other hand the real and actual commercial exploitation of the resources of at least the Moon, Mars and other areas beyond the suborbital Space have become a reality of today and not of some distant future. The need for promotion, facilitation, regulation and finally distribution amongst the whole mankind the exploit of Space activities has become imminent and necessary. This can only be done by development of specialized International laws and Treaties promoting and regulating these activities so that they can be used for the maximum benefit of mankind.

As discussed earlier there are two apparently conflicting interests involved in the exploitation of assets beyond Suborbital Space one is that of Entities which have the financial and technical capability to exploit the beyond Suborbital Space (advanced countries and private enterprises) and on the others are those who do not have these capabilities (underdeveloped countries and their citizens). Perhaps the dichotomy which faces the first entity can be best described by the event of man's first landing on the moon in the year 1969, two seemingly contradictory acts were performed by Neil Armstrong, first being the plantation of the American flag (which has been the traditional sign of a

victorious army declaring its sovereignty) representing ‘an urge to declare sovereignty on moon’ and the second act being a plaque with President Nixon’s signature on it and an inscription reading “ Here man from the planet earth first set foot upon the Moon July 1969 AD we came in peace for all mankind.” This showed the commitment of US to acknowledge the principle of moon being the Common Heritage of Mankind. The international space community should take this as the biggest challenge facing them and immediate efforts should be made to resolve this supposedly tricky situation, in the interest of not only scientific progress but also of sustainable development of the vast majority of the underdeveloped nations and their inhabitants for whom exploitation of space assets could prove as an ever lasting source of sustainable development and well being.

This concept also finds its source from the adoption by the General Assembly of the Declaration on International Cooperation in the Exploitation and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of the Developing Countries (UN General Assembly resolution 51/122, annex, of 13 December 1996).

Let us now first examine **the apprehensions of the private parties and what are potential sources of discouragement for them to invest in this field.**

-Absence of property rights both substantive and Intellectual: Outer space treaty and Moon agreement both negate the possibility of ownership of property both substantive and Intellectual property rights in space assets.

-Absence of proper laws to regulate business activities: There is no legal regime to govern the business transaction ensuring the safety of investment and returns there on, neither is there any Authority or Agency to administer or lay down a legal regime to facilitate and decipher business opportunities.

-Absence of any investment and business incentives like tax benefits, custom, tariff benefits.

-Absence of a method or agency for dispute resolution.

These among other factors combined with the fact that the potential of space enterprises, today is too short termed and its return potential too little in near future, to attract billions of dollars needed in private capital to sustain robust space missions needed, for space benefits to reach all of humanity. It is also well known fact that business is always guided by ‘financial incentives and business sense’, and not by ‘philanthropy’. So for overall improvement of space exploration and exploitation, for the benefit of all humanity the much-needed private participation has to be generated by making these enterprises financially viable and lucrative along with adequate guarantees for private players to secure their investments and returns.

Secondly there is the principle of Space being **the Common Heritage of Mankind and it for the benefit of all mankind**. Apart from the Outer Space Treaty and the Moon Agreement, these principles have also been amply stressed upon, from the very initial years of evolution of International Space Regime.

Resolution 1348 (XIII)[1] of the 792nd plenary meeting, 13 December 1958 of the United Nations, General Assembly, while establishing an ad hoc Committee of 20 nations on Peaceful Uses of Outer Space to report on

(a) "The activities and resources of the United Nations, of its specialized agencies and of other international bodies relating to the peaceful uses of outer space;"

(b) "**The area of international co-operation and programs in the peaceful uses of outer space** which could appropriately be undertaken under United Nations auspices **to the benefit of States irrespective of the state of their economic or scientific development**, taking into account the following proposals, inter alia;"

The resolution starts with

"The General Assembly

Recognizing **the common interest of mankind in outer space** and recognizing that it is the common aim that outer space should be used for peaceful purposes only."

This was probably was the first initiative of the UN in evolving the Space Legal Regime.

The Resolution 1472(XIV), International Co-operation in the peaceful uses of outer space, 856th plenary meeting of the United Nations 12 December 1959

"The General Assembly

Recognizing the common interest of mankind as a whole in furthering the peaceful use of outer space,

Believing that the exploration and use of outer space should be only for the betterment of mankind and to the benefit of States irrespective of the stage of their economic or scientific development."

Resolution (XVIII), Declaration of Legal Principles Governing the Activities of States in the Exploration and Use of Outer Space 1280th Plenary meeting, 13 December 1963 reiterates the above principles. These principles were reiterated again in a series of Resolutions

And finally the Resolution 2222 (XXI) Treaty on Principles Governing the Activities of States in the Exploraion and Use of Outer Space, includint the Moon and Other Celestial Bodies.

Resolution 2779 (XXVI). Preparation of an international treaty concerning the Moon the 1198th plenary meeting, 29 November 1971

The General Assembly

Recalling its resolution 2222 (XXI) of 19 December 1966 stressing the importance of international co-operation in the field of activities in the peaceful exploration and use of outer space , including the Moon and other celestial bodies, and the importance of **developing the rule of law in this new area of human endeavor.**

Reaffirming the common interest of all mankind in furthering the peaceful exploration and use of outer space for the benefit of all Stares and for the development of friendly relations and mutual understanding among them.

This resolution was for requesting for the Moon Treaty.

Resolution 32/195. 108 plenary meeting 20 December 1977 Tenth anniversary of the entry into force of the Treaty on Principles Governing.....

Noting that seventy-five States have become parties to the Treaty.

Recognizing that participation in the Treaty contributes to the peaceful exploration and use of outer space for the benefit of all mankind, regardless of the degree of economic or scientific development of States, and to the development of mutual understanding and the strengthening of friendly relations among States and peoples.

Resolution 37/90. Second United Nations Conference on the Exploration and Peaceful Uses of Outer Space. 100 plenary meeting 10 December 1982

Aware of the need to increase the benefits of space technology and its application and to contribute to an orderly growth of space activities favorable to the socio-economic advancement of mankind, in particular the peoples of developing countries.

Resolution 51/122 adopted by General Assembly (on the report of the special political and Decolonization Committee {Fourth Committee}) Declaration on International Cooperation in the Exploration and use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries. Resolution 54/68 of the United Nations General Assembly, Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space.

Resolution 59/2 of the United Nations General Assembly, Review of the implementation of the recommendations of the Third United Nations Conference on the Exploration and Peaceful Uses of Outer Space.

The UNISPACE I, II and III mentioned above specially the UNISPACE III “The Space Millennium Vienna Declaration. Vienna Declaration has

Reaffirming the common interest of all humanity in the progress of the exploration and use of outer space for peaceful purposes, and convinced of the need to prevent an arms race in outer space as an essential condition for the promotion of international cooperation in this regard,

Recognizing that outer space should be the province of all humankind, to be utilized for peaceful purposes and in the interests of maintaining international peace and security, in accordance with international law, including the Charter of the United Nations and as proclaimed in the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies,

Reaffirming General Assembly resolution 51/122 of 13 December 1996, entitled “Declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and in the Interest of All States, Taking into Particular Account the Needs of Developing Countries”.

To adopt measures aimed at identifying new and innovative sources of financing at the international level, including in the private sector, in order to support the implementation of the recommendations of UNISPACE III in developing countries

Thus it is amply clear that the “Space as the common heritage of mankind”/ “Space the province of all humankind” principle has not only been reiterated year after year in various UN resolutions but has been accepted by all the space faring nations. This concept has thus acquired the status of an international law, which has wide acceptance. This acceptance forms the basis of safeguarding the interests of the Under Developed countries. It is on the basis of this principles one can articulate the ways and means to safeguard the interests of Under Developed countries in the eventuality of expanding human presence beyond low earth orbit including that on the moon and other celestial bodies.

But as discussed above while envisaging the ways and means to protect the interests of Under Developed countries one should not loose sight of keeping these safeguards to a limit where the enterprise of human presence beyond low earth orbit remains sufficiently lucrative and attractive for commercial ventures and investments by advanced countries and private entities. Because without their participation chances of exploitation of beyond low earth orbit human presence are extremely remote. Or in the alternative think of some innovative ways to get the best of both worlds, i.e. safeguarding the interests of the Under Developed countries as well as the business interests of the investors which seem like a tall order, since both of these interests seemingly represent opposing interests. This concept has not only been stressed in Moon Treaty but is also one of the recommendations of Vienna Declaration, which advises ‘to adopt measures aimed at identifying new and innovative sources of financing at the international level, including the private sector, in order to support the implementation of the recommendations of UNISPACE III in developing countries.

Common Heritage of Mankind is not a concept, which is unique to the outer space alone, this concept has been there in ancient Indian mythology of ‘Vasudev kutumbakam’ which means the whole world is a family. Later, in the writings of ‘Grotius’ there is a reference to this concept “What cannot be seized or enclosed, such as the open sea, cannot be reduced to property of individual States. Thus, these zones remain ‘common to all mankind’... US government in the 1892 Fur Seal Arbitrations, argued that its management of the Bering Fur Seal herd was for the “general benefit of mankind’ and the “common use of mankind’ which is a concept similar to the present “Common Heritage of Mankind”. The Common Heritage Doctrine was This doctrine is also finds its roots in various UN charters some of them have been referred to in this paper but the basic logic for this doctrine can also be found in the UN General Assembly Resolution 3281 of 1974 its Preamble states:

“Considering that genuine co-operation among States, based on joint consideration of and concerted action regarding international economic problems, is essential for fulfilling, the international community’s common desire to achieve a just and rational development of all parts of the world,”

“Stressing the importance of ensuring appropriate conditions for the conduct of normal economic relations among all States, irrespective of differences in social and economic systems, and for the full respect of the rights of all peoples, as well as strengthening instruments of international economic co-operation as a means for the consolidation of peace for the benefit of all,”

Article 10 states:

“All States are juridically equal and, as equal members of the international community, have the right to participate fully and effectively in the international decision-making process in the solution of world economic, financial and monetary problems, inter alia, through the appropriate international organizations in accordance with their existing and evolving rules, and to share equitably in the benefits resulting therefrom.”

International Treaty on Plant Genetic Resources for Food and Agriculture also has parallels to this doctrine its Preamble states:

“Cognizant that plant genetic resources for food and agriculture are a common concern of all countries, in that all countries depend largely on plant genetic resources for food and agriculture that originated elsewhere;”

“Acknowledging that the conservation, exploration, collection, characterization, evaluation and documentation of plant genetic resources for food and agriculture are essential in meeting the goals of the Rome Declaration on World Food Security and the World Food Summit Plan of Action and for sustainable agricultural development for this and future generations, and that the capacity of developing countries and counties with economies in transition to undertake such tasks needs urgently to be reinforced;”

The concept of the world functioning as a family and that there is interdependence and co-existence are a must for survival of human race has been fully realized and is being stressed in all environmental protection initiatives.

The Annex I of Rio Declaration on Environment and Development:

“The United Nations Conference on Environment and Development, Having met at Rio de Janeiro from 3 to 14 June 1992, Reaffirming the Declaration of the United Nations Conference on the Human Environment, adopted at Stockholm on 16 June 1972, a/and seeking to build upon it, With the goal of establishing a new and equitable global partnership through the creation of new levels of cooperation among States, key sectors of societies and people, Working towards international agreements which respect the interests of all and protect the integrity of the global environmental and developmental system, Recognizing the integral and interdependent nature of the Earth, our home, Proclaims that:

Principle 3 The right to development must be fulfilled so as to equitably meet developmental and environmental needs of present and future generations.”

This declaration also addresses the special needs of under-developed countries.

“Principle 6 The special situation and needs of developing countries, particularly the least developed and those most environmentally vulnerable shall be given special priority. International actions in the field of environment and development should also address the interests and needs of all countries.”

The Protocol on the Environmental Protection to the Antarctic Treaty also stresses on the 'interests of mankind as whole':

"Convinced that the development of a comprehensive regime for the protection of the Antarctic environment and dependent and associated eco-systems is in the interest of mankind as a whole. Desiring to supplement the Antarctic Treaty to this end Have agreed as follows"

A fairly similar concept is found at intra country level, prevalent in almost all the democratic nations as it is available to all the constituents i.e. citizens in that country. That is all the resources of the country are a common heritage of all the citizens of that country.

Internationally this doctrine and a comprehensive regime have been most developed in exploitation of Deep Sea bed, and serious efforts are being made to establish a common heritage regime over Antarctic affairs.

Although it could be one of the biggest sources untapped by exploration by man on earth, the bed and sub-soil of high seas was not regulated by international treaties. One of the first attempts in this direction was made by adoption of **Convention on High Seas, 1958. Article 2 of this convention states "The high seas being open to all nations, no State may validly purport to subject any part of them to its sovereignty."**

The doctrine of Common Heritage of Mankind can be traced to the UN General Assembly Resolution 2574 (XXIV). Question of the reservation exclusively for peaceful purposes of the sea-bed and the ocean floor, and the subsoil thereof, underlying the high seas beyond the limits of present national jurisdiction, and the use of their resources in the interests of mankind.

The preamble of the above General Assembly Resolution states:

"Noting that developing technology is making the entire sea-bed and ocean floor progressively accessible and exploitable for scientific, economic, military and other purposes,"

'Affirming that there exists an area of the sea-bed and ocean floor and the subsoil thereof which lies beyond the limits of national jurisdiction,'

"Affirming further that this area should be used exclusively for peaceful purposes and its resources utilized for the benefit of all mankind,"

"Convinced of the urgent necessity of preserving this area from encroachment, or appropriation by any State, inconsistent with the common interest of mankind,"

The situation as stated about the deep-sea bed beyond the limits of national jurisdiction is almost similar to the one in the field of exploration and human presence in outer space; the advancement in space technology has made the outer space also progressively accessible and exploitable. Definitely outer space and celestial bodies represent an area, which lies beyond the limits of national jurisdiction. There is of course an urgent

necessity of preserving this area from encroachment or appropriation by any State or legal entity, inconsistent with the common interest of mankind.

Resolution 2749(XXV). Declaration of Principles Governing the Sea-Bed and the Ocean Floor, and the Subsoil Thereof, beyond the Limits of National Jurisdiction.

Apart from reiterating the doctrine of Common heritage of man kind for the Sea bed as illustrated in Resolution 2574 above resolution 2749 recognizes that the existing legal regime of high seas does not provide substantive rules for regulating the exploration of this area and exploitation of its resources and also provides for establishment of an international regime to be established by an international treaty of a universal character. **“This regime shall inter-alia, provide for the orderly and safe development and rational management of the area and its resources and for expanding opportunities in the use there of and ensure the equitable sharing by States in the benefits derived there from, taking into particular consideration the interest and needs of the developing countries,”**. Thus resolution 2749 calls for (a) that High Sea shall not be subject to appropriation by States or by natural or legal persons. (b) Setting up of an international regime to govern the management of its natural resources.(c) it shall be open to use for exclusively peaceful purposes.

These principles proposed by the above two resolutions were reiterated to the fullest extent in the ensuing *“Law of Sea Convention 1982”*

Preamble states:

“-Recognizing the desirability of establishing through this Convention, with due regard for the sovereignty of all States, a legal order for the seas and ocean which will facilitate international communication, and will promote the peaceful uses of the seas and oceans, the equitable and efficient utilization of their resources, the conservation for their living resources, and the study, protection and preservation of the marine environment,”

“- Bearing in mind that the achievement of these goals will contribute to the realization of a just and equitable international economic order which takes into account the interests and needs of mankind as a whole and, in particular, the special interests and needs of developing countries, whether coastal or land locked,”

Thus promotion of peaceful uses, equitable and efficient utilization of resources, facilitation of international communications have been given as the reason and logic for adoption the principle of Common Heritage of Mankind which would lead to equitable international order taking into account the interests and needs of mankind as a whole and special interests of developing nations whether coastal or land locked. This can again find parallel with the situation in Space field since land locked nations can be equated with non space faring nations those who do not have a capacity or connectivity to the space on their own.

Article 136 “The Area and its resources are the common heritage of mankind”

Article 137 states that no claim by a state or natural or juridical person sovereignty or appropriation of any part there of shall be recognized, so also that all rights are vested

in mankind as a whole and minerals recovered may only be alienated in accordance with rules, regulations and procedures of the Authority.

Article 140 states that activities in this area would be for the benefit of mankind as a whole, with particular considerations for the interests of developing States and also people who have not attained full freedom.

Article 143 states that research in the area shall be carried out exclusively for peaceful purposes and for benefit of mankind as a whole with special emphasis on capacitating the personnel of developing States and technologically less developed States.

Article 144 talks of acquisition by the Authority and its transfer of technology and scientific knowledge to developing states so that all states parties benefit there from.

Article 148 talks of ensuring effective participation of developing states in activities and help them overcome the obstacles arising from their disadvantaged location.

Article 151 deals with the production policy which also deals with the issue of problems of developing countries which would suffer serious adverse effects on their exports earnings or economies resulting from reduction in the price of an affected mineral or its volumes and to compensate them to the extent of such reduction.

This is an issue which should be pondered over seriously since the outer space mining is also going to have similar effects on the economies of many developing states.

Article 153 prescribes the system of exploration and exploitation of the area, by the Authority on behalf of mankind as a whole by way of an Enterprise in accordance with the rules, regulations and procedures of the Authority.

Articles 154 & 155 provide for periodic review after every 5 years and a review conference after 15 years, to review the working of the International Regime.

Article 156 and 157 are about establishment of the Authority consisting of all State Parties with its seat at Jamaica, and nature and fundamental principles of the Authority.

Articles 186 to 191 deal with the methods of Settlement of Disputes and Advisory Opinions.

Article 309 states "No reservations or exceptions may be made to this Convention unless expressly permitted by other articles of this Convention."

United Nations Convention on the Law of the Sea came in force from 16 November 1994 & Agreement relating to the implementation of Part XI of the convention came in force from 28 July 1996.

The United Nations Convention on Law of Sea thus provides a sound and comprehensive legal regime for the exploration and exploitation of Deep Seabed resources in a manner compatible with the doctrine of Common Heritage of Mankind. It is not only a theoretical concept but it is a well thought of detailed program and regime to achieve the goals of 'a just and equitable international economic order which takes into account needs of mankind as a whole and in particular the special interests and needs of the developing countries'. Thus the need to address and protect the special interests of developing countries has found recognition and acceptance in the world community particularly in while exploiting assets which have been designated as common heritage of mankind. This according to me has been the single most important achievement of the Law of Sea Convention 1982. Since the beginning of the exercise of Exploitation of outer space and its assets, it has been universally accepted by principle that Space Assets are also Common Heritage of mankind, and thus there is a need to address and protect the special interests of the Under-Developed countries. Since Space is going to be the biggest hope for future of Human race, the need to protect the interests of the humans who underdeveloped is even more since all this exploitation is going to be based on technological advancement and these nations are far behind in this field, unless their interests are adequately looked after and protected the gap between the advanced and underdeveloped nations is going to widen further with each passing year. The need of the hour is not only of ensuring a share in the Space Assets exploited by the developed nations but also to make these underdeveloped countries technically sound so that in near future they can contribute and participate equally in the future space exploration to be undertaken by the mankind. The Deep Sea Convention of 1982 regime has provisions for both of these requirements for Deep Seabed exploitation. This legal regime also takes in to account the financial disadvantages which the minerals excavated from the deep sea can bring to some of the underdeveloped countries whose economy is largely dependent on the export and utilization of these minerals.

Thus from the above discussion it is amply clear that doctrine of 'Common Heritage of Mankind' which naturally leads to 'Safeguards for Underdeveloped Countries' is a very well established norm and practice being followed in various International Legal Regimes, with the charter of United Nations forming the fountain head for these Regimes. Thus it is not only quite natural but also logical to extend and follow this doctrine in the next step of human evolution i.e. 'Expanding human presence beyond low earth orbit'. But again as pointed out earlier one also has to keep the genuine concerns and interests of the technically and financial entities who have to initiate and invest in these programs, so that 'Outer Space' 'the Common Heritage of Mankind' is 'productively available' to the Mankind for its progress and survival. So the efforts should be made to evolve a Regime that balances the interests of both the Underdeveloped/Developing countries on one hand and the Developed Countries and Private entities on the other.

Luckily very workable and almost universally accepted regime is available, in the form of the Regime of Law of Sea 1982, which provides for formation of an international Agency to explore and exploit the Deep Sea bed.

A Legal Regime on these lines can be the answer even for the exploration and exploitation of Outer Space and human presence there. I wish to propose three models for such a Regime.

(A) An International Agency under the Aegis of UN to directly undertake the exploitation of Outer Space, it would be funded by contributions from all countries on the lines of contributions made to the UN. This Agency would then commercially engage various countries and private entities to undertake its missions and commercially dispose off the exploits, the resultant profits could then be distributed amongst all the countries (formula for proportionate distribution can be evolved by taking into account factors like the needs and initial contributions etc.)

(B) An International Agency, which could act as a licensing Agency to give License to a Country or a Private Enterprise to undertake a particular mission or activity. The license fee could be one time or a periodic one, and proportionate to the returns, which the exploiting party generates.

(C) An International Regime on the lines and as an extension of Registration Convention. Individual Countries would register and regulate their Outer Space Activities and also pay a fixed percentage of their profits to the International Agency.

Conclusion

With the advent and strengthening of United Nations principles like fundamental human rights, dignity and worth of human beings, equal rights for men and women and nations large and small and respect for treaties and other international law sources have grown to be universally accepted and respected. These fundamental principles have founded the basis for numerous steps being taken by different UN agencies to protect and safeguard the rights of underdeveloped and developing countries and formulating ways ensure their all round development. The doctrine of 'Common Heritage of Mankind' has also been used as a method of ensuring and safeguarding interests of underdeveloped countries, in the technology driven areas where under-developed countries are at the risk of lagging far behind. Expanding human presence beyond the low earth orbit is also one such area where there is an urgent need for safeguarding the interests of under-developed and developing countries, which are not technologically advanced to match the pace of developed nations. Some of the advanced nations are progressing very fast in this field and under-developed countries are at a proportionate risk of left behind. So there is an urgent need to evolve a comprehensive legal regime to regulate these activities from the point of view of both the developed and the under-developed world, and a balance needs to be struck between these two conflicting interests. Some brainstorming can definitely lead into development of a regime, which can very well harmonize both these interests since the resources of outer space are infinite. Much of the responsibility lies on the shoulders of the international community of space professionals to take this initiative to formulate a legal regime to regulate the exploration and exploitation of outer space following the doctrine of space the common heritage of mankind by way of a legal

regime including a formation of an International Agency to undertake all these activities under the aegis of United Nations.

The world today is lucky to have a highly respected space technocrat as one of the tallest statesman of the world, being head of the largest democracy of the world. In President A P J Abul Kalam of India we have a towering personality whose good offices could be used by the space fraternity to have such a regime in place and functioning in near future.

To quote him on the subject (his address to India-United States Conference on Space Science Application and Commerce: Strengthening and Expanding Co-operation)³

“How can we imagine that 1.5 billion people of advanced nations can have peaceful life, 4.5 billion people of less developed nations are below poverty line and are not happy”

“The benefits of space research should reach the six billion population by providing them unhindered supply of safe drinking water, shelter, food, healthcare and education so that we will have a peaceful happy and prosperous world”

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http://presidentofindia.nic.in/scripts/appletspeech/vision_index.jsp?by_pass_url=http%3A%2F%2Fpresidentofindia.nic.in%2Fscripts%2Fslatest1.jsp%3Fid%3D321