

Proposing Tanzania National Space Agency Act: The Key Legal Frameworks

Kassim B. Kipanga

School of Law, Beijing Institute of Technology, Beijing, China

Email: kipangak82@gmail.com

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Abstract

States recently establish or consider establishing Space Agencies. To have effective Space Agency requires a strong Space Legislation. Tanzania as a new space actor intends to establish its own Space Agency soon. Despite the fact that the realm of outer space law develops very fast, it is with unfortunate that till to date, there is no direct legislation with specific to outer space in Tanzania. Hence this paper proposes Tanzania to enact such Space legislation and propose its legal frameworks. The proposed legislation when enacted, will be vibrant in regulating Tanzania outer space activities that are expected to be conducted at national and international level. It is the intention of this paper to deliberate and propose on its main legal framework of the Tanzania National Space Agency Act. These include Establishment of Tanzania National Space Board, Modes of authorization of space activities in Tanzania, How the space objects will be registered, liability in case of accidents and how the indemnification will be provided, prohibition of activities and offences to be established by the proposed legislation, events of incidents and accidents, enforcement by public officers and their powers and any other related issues. In proposing all these, the paper apply its methodology by analyzing the provisions stated in a number Space legislations from different jurisdictions, the work of the eminent and highly qualified authors in space law, and a number of United Nations space conventions and treaties. The recommendation will then be given to the effect that for the betterment of Tanzania to be benefit from what the outer space can offer, Tanzania has to enact this kind of Legislation. That the proposed legislation has to be one step ahead of other legislations around the globe by covering the issue of constant monitoring obligation, and include the liability insurance clause.

Keywords

Proposed Tanzania National Space Agency Act, Tanzania Space Legislation,

1. Introduction

One of the major concerns of the current global community is conducting exploration and activities in space. Space is no longer a domain of the few states. It is not only a domain for scientific research and militaristic nature but also for commercial activities. It is with certain that in the few years to come, one of the places that will be busiest is the space, celestial bodies and besides the air space.

Tanzania is expected to be one of the states blessed with the potential to develop and participate in space activities. Though the issues of space related activities are given less attention by Tanzania due to the fact that she is still developing country with her economy mostly based in Agri-based economy but it has the potential to develop and engage in space exploration and activities.

Since the issues of space explorations and activities is no longer a luxury due to its benefits it offers be it economic, social and security wise, still there are a number of concerns directed to Tanzania government to realize its national space law. The sole aim of this concern is to govern and safeguard the activities of Tanzanian people be it at the national or international level. Therefore, this paper will paint a picture on how the proposed Tanzania National Space Agency Act (Hereinafter referred to as TNSAA) should look like with specific to its legal frameworks.

1.1. Justification

It is undisputed fact that to date a number of states established or ponder to establish a space agencies keep on to multiply. The record shows that in 2018, several countries including Greece, Australia, Zimbabwe, Turkey and Luxembourg, established space agencies¹. This evidenced the fact that these entities have a special role to play in this upcoming space age. Government spending on aerospace around the world hit \$70.9 billion in 2018, up 5.75 percent from previous five years. There has been record-breaking surge in the number of countries allocating funds to the aerospace industry, with 88 nations to date having allocated funds (Xinhua News Agency, 2003).

Today around 120 states have no national space agency (Kommel et al., 2020). With certainty, in the few years to come, many of these states will be challenged and forced to establish Space Agency, Tanzania inclusive. The reason is obvious; space is no longer a luxury. On the other hand, the increase in number of national space agencies globally leads to creation of a gap in knowledge of the emerging trends for the new space players (Kommel et al., 2020: p. 6). In this case, the creation of a robust legal framework for national space agencies is vital for efficient governance and coordination of space activities. Therefore, this paper is

¹<https://spacenews.com/op-ed-global-government-space-budget-continuesmultiyear-rebound/>, accessed on 18th October, 2024.

expected to positively contribute to international public and Tanzania in particular, in understanding the key legal frameworks when developing a modern space agency.

1.2. Objective

The focal objective of this paper is to provide new players into the space community and Tanzania in particular with good word based on the understandings, experience, good practices and lessons obtained from states that have recently established a space agency. In particular, in the legal Organisation structure and recommendations on the key issues that developing space nations will need to consider when developing a national space agency.

1.3. Methodology

With regards to this paper, it defined “*space agencies*” as public institutions, sponsored by national government to support domestic space capabilities (Kommel et al., 2020: p. 3) or the development of a commercial space economy. In discussing all these, the paper apply its methodology by analyzing the provisions stated in a number Space legislations from different jurisdictions, the work of the eminent and highly qualified authors in space law, and a number of United Nations space conventions and treaties.

2. The Legal Frameworks for Space Exploration in Developed Countries

This section presents a nutshell overview of China’s national strategy as a selected pilot study among the developed countries on space programs, including the nation’s objectives and priorities in the exploration and use of outer space. Furthermore, it examines the legislative framework regulating China’s space operations, elucidating the norms and guidelines that direct the country’s participation in space exploration.

2.1. Chinese National Policy for Space Programs

National laws and administrative procedures primarily govern space activities in the People’s Republic of China (Major & Spencer, 2009: p. 125). China has established comprehensive, policy, and laws governing commercial satellite uses, and some administrative procedures have been formulated to fulfil the country’s commitments under the international space framework (Chen, 2014: pp. 123-150). These include three White papers since 2000, detailing its space activities, industry evolution and international collaboration. Other secondary policy publication include the 11th Five year Guidelines for economic and social development with specific to on advancing satellites and space industries, Space science and Aeronautical Development Plan No. 11 in 2007². In 2011 China made open its plans to

²K. Pollpeter, China’s Progress in Space Technology, and Implication of the United States of America, https://www.uscc.gov/sites/default/files/Research/China%20Dream%20Space%20Dream_Report.pdf, pg. 2.

introduce a defined Rules and Regulations. This include activities in space (Liu, 2013).

2.2. Chinese Laws Governing Space Activities

China follows a rule of law since its establishment in 1949. It follows a Socialist legal system when the “open door and policy reforms” was executed in 1978. Within this socialist legal system framework, the space law issues were recognized³. Therefore, in China, no matter where it originates, space law includes all concepts, standards, and regulations that are applicable to space activities in some way⁴. China has made significant efforts to build space laws after realizing the growing importance of such regulations⁵. Some of the laws include; the 2007 Property Law, which guarantee the protection for private and individual property rights. This was the result of the establishment of private and non-private sector in 1999⁶. The legislation law, enacted in 2000, introduce “multi-tiered” law making system. This consist of Constitution, national laws, administrative regulations and departmental rules (Chen, 2014: pp. 123-150).

2.3. The Establishment of the China National Space Agency (CNSA)

CNSA was established in 1998, this is a newly born institution. CNSA is the symbol of China when it comes to foreign relations. It overseeing the development and implementation of national space policies and the management of the country’s space science, technology, and industry, it is responsible for signing inter-governmental agreements pertaining to the space sector on behalf of organizations and facilitating scientific and technical exchanges between governments⁷. The CNSA is responsible for drafting laws and Regulations pertaining space operations. Subsidiaries of the CNSA include the Departments of Foreign Affairs, Science, Technology, and Quality Control; System Engineering; General Planning; and Foreign Affairs⁸.

2.4. Ministries’ Role in the Aerospace Sector in China

In March 1993, the 8th National People’s Congress approved the partition of the “Ministry of Aerospace Industry” into two bodies, namely the “China Aviation Industry Corporation” and the “China Aerospace Industry Corporation”, due to ongoing the reform process⁹. Nevertheless they were legitimately identified as

³<https://www.sciencedirect.com/science/article/abs/pii/S0265964618300407#:~:text=rights%20and%20content-,Abstract,refor-mation%20could%20provide%20some%20clues>. Accessed on 3rd October, 2024.

⁴<https://www.chinalawandpractice.com/2010/06/17/pursuing-the-privatesector/?return=2024100513707>. Accessed on 3rd October, 2024.

⁵https://english.www.gov.cn/archive/whitepaper/202201/28/content_WS61f35b3dc6d09c94e48a467a.html, Accessed on 3rd October, 2024.

⁶<https://www.chinalawtranslate.com/en/legislation-law-2023/>

⁷<http://www.cnsa.gov.cn/n615709/n620681/n771918/index.html>.

⁸<https://www.britannica.com/explore/space/china-national-space-administration/>

⁹<https://english.spacechina.com/n17138/n382513/index.html>, Accessed on 3rd October, 2024.

corporations, these two bodies served vital administrative roles. Amongst of organizations is the “China Aerospace Industry Corporation”, and the “China National Space Administration”¹⁰. The China National Space Administration (CNSA) superintends all Chinese space programme, while the China Aerospace Industry Corporation (CAIC) is a state-owned enterprise with a prime stress on spacecraft production and related technologies¹¹.

2.5. Administrative Entities Regulating Space Activities in China

These administrative entities deals with control of space include but not limited to “People’s liberations Army (PLA)”, “General Armament department”, “the Ministry of Foreign affairs.” Regarding military operations in space, “the General Armament Department” is the key authority. The Ministry of Science and Technology is the primary administrative organization in China responsible for overseeing space technology and its uses, as well as other high-tech fields (Gao, 2011: p. 85).

Other entities in China which deals with space related activities include Private enterprises such as China Aerospace Science & Industry Corporation (CASIC) and China Aerospace Science, and Technology Corporation (CASC)¹². International partnership and agreement in which China joined the World Trade Organization (WTO)¹³ with the view of boosting market oriented initiatives, investments and multi-channel financing sources. The list made by the government of China to get in line with WTO were Manufacturing civil aircraft (including helicopters), civil satellites, and ground stations for remote sensing satellites all fall under this category of technology¹⁴.

3. Currently Situation of Space Exploration in Tanzania

Tanzania lies between latitude 1 and 12 in Eastern coast of Africa. The country is bordering with Kenya, Uganda, Rwanda, Burundi, Democratic Republic of Congo, Malawi, Zambia and Mozambique¹⁵. When it comes to space exploration, it is without a single shadow of doubt that Tanzania space exploration situation is at infant stage. Regarding the laws, Tanzania is in short of explicit legislation that regulate space activities. There are no explicit rules and regulations to govern space activities. This situation of lack of legal framework act as a bar to the country’s ability to play part in the growing space industry (Space Generation Advisory Council, 2024). It seems that Tanzania gives no special attention behind the

¹⁰ *Ibid.*

¹¹ <https://www.space.com/22743-china-national-space-administration.html>

¹² <http://english.casic.cn/n189298/n189314/index.html>, Accessed on 4th October, 2024

¹³ Agreement Establishing the World Trade Organisation, Marrakesh, done April 15, 1994, entered into force January 1, 1995; 1867 unts; ukts 1996 No. 57; ats 1995 No. 8; 33 ilm 1125, 1144 (1994).

¹⁴ <https://www.lexology.com/library/detail.aspx?g=9974581a-813b-40bf-9989-f6f27a3cd99c>, Accessed on 7th October, 2024.

¹⁵ <https://thecommonwealth.org/our-member-countries/united-republic-tanzania#>: Acceded on 12th October, 2024.

concept of establishing space agency which at the end will lead to the enactment of Space Agency Act.

However, recently Tanzania starts showing interest in space exploration. President Samia Suluhu Hassan as shown in a number of monographs stated that Tanzania is keen on launching its 1st satellite to enhance communication and technological advancement. This trend may lead to establishment of Space Agency hence enactment of National Space Agency Act (Faboadé, 2024). Currently, Tanzania goals in space exploration evidenced its seriousness in advancing innovation, technology and raise collaboration in space sector with other countries (Tanzania Secures Orbital Slot for First Satellite Launch, 2024). The procurement of orbital position at 16 degrees west in favor of next Tanzania satellite launch is a huge step towards country's space exploration target (Nikolaenko, 2024).

Additionally, in June, 2024, Tanzania through Tanzania Regulatory Authority (TCRA) issued the Guidelines for satellite filings in Tanzania (Guidelines for satellite Filings in Tanzania, 2024). This is the milestone achievement which shows how Tanzania is now committed to venture into space activities. The document seek to provide the guidance to satellite operator(s) seeking to submit satellite filings to International Telecommunication Union (ITU) through the administration of the United Republic of Tanzania. Therefore, satellite operator in Tanzania wishing to establish a network of one or more satellite via Tanzania, can approach TCRA for the submission of a new satellite network filing to ITU.

With regards to collaboration, Tanzania participated in the events such as the NASA International Space App Challenge held in Dar es Salaam-Tanzania. The event was attended by major Organisation globally. These included National Aeronautics and Space Administration (NASA), European Space Agency (ESA), Community Supported Agriculture (CSA), Japan Aerospace Exploration Agency (JAXA) and Indian Space Research Organisation (ISRO) and other countless more. This was a record breaking event in Tanzania¹⁶. Through this milestone event, Tanzania is setting itself as the important in the world space community. This cleave the roads for the future advancement in space sector (Laiser, 2023).

Again, Tanzania is associating with other countries with regards to space matters. A vivid naked example is in the 8th cycle of KiboCube program organized by UNOOSA, JAXA and other partners. Through this programme, Ivory Coast INP-HP partnered with the Dar es Salaam Institute of Technology (DIT) of Tanzania and proceed to win in that programme. The programme was sponsored by UNOOSA and JAXA through KiboCube programme (UNOOSA, 2023). This programme increase the chance for Tanzania to enhance its space capability (UNIS, 2024).

With regards to treaties and conventions, Tanzania is signatory to Liability Convention of 1972 though unratified. Tanzania has also ratified space treaties such as Space Nuclear Ban of 1963¹⁷, the ITSO Treaty (Convention on the

¹⁶<https://www.innovaspace.org/blog/from-dar-es-salaam-to-space>, Accessed on 14th October, 2024.

¹⁷International Telecommunications Satellite Organization (INTELSAT) Charters-Constitutions-Statutes Telecommunications, 12 February 1973, <https://treaties.un.org/Pages/showDetails.aspx?objid=08000002800e8e08&clang=en>, Accessed on 14th October, 2024.

International Maritime Satellite Organization, 1976), The IMISO Treaty (Constitution and Convention of the International Telecommunication Union, 1992), the ITU Treaty and the Constitutive Act of African Union¹⁸. Tanzania has also participate and air out its voice in supporting a number of United Nations space related declarations, principles and resolutions such as Guidelines for states to Use of Artificial Earth Satellites for International Direct TV Broadcasting¹⁹ and many more.

4. An Overview of the Proposed Tanzania National Space Agency Act

In Tanzania the law come into being through a proposal called a Bill. The proposed TNSAA has to originate from the Bill. The Tanzania National Space Agency Bill has to be tabled before the national assembly for the discussion and reading. When passed by the parliament it will become a law after being assented by the president.

After the Minister²⁰ appoint the day by notification in the Government Gazette, the Act shall come into operation. In this regard, the minister may decide the Act to come into operation on it's entirely or by selected provisions which may come into operation in different dates. It is advised that the proposed TNSAA should contain the provisions which legally blessed the Minister with this legal power²¹.

The main purpose of this paper is to propose on the enactment of TNSAA by the government of Tanzania. The ambition of the "*the proposed*" TNSAA is to control, supervise and regulate space related issues in Tanzania with the aim of maintaining its safety and promote orderly development of national space activities for the benefit of the United Republic of Tanzania. This may include the registration of space objects and to establish laws and regulations which will establish the offences and other associated matters.

It is proposed that the TNSAA has to define important space related legal terms. These include but not limited to Agency, Accident, Authorized Officer, Board, Damage, Investigator, Launch Safety Officer, Launch, Launch Facility, Launch Permit, License, Minister, Permanent Resident, Outer Space, Orbit, Operator, Space Object, Space Regulator, and Weapons of Mass Destruction²².

¹⁸The Constitutive Act of the African Union (AU Treaty) of 2000-2001, UNTS: 2158 UNTS 3, UN Reg No: I-37733, OAU Doc: CAB/LEG/23.15

¹⁹Principles Governing Use by States of Artificial Earth Satellites for International Direct Television Broadcasting, resolution 2916 (XXVII) 1972. Others include: Guideline for remote sensing of the earth from Space 41/65, The Guidelines for Use of Nuclear Power Sources in Outer Space, 47/68 and declaration on International Cooperation in the Exploration and Use of Outer Space for the Benefit and Interest of all States A/RES/51/122 of 1996.

²⁰The minister means the minister charged with responsibility for Information, Communication and Information Technology of Tanzania.

²¹See for example The Malaysian Space Board Act 2022 under section 1(2). Under this provision the Minister has legal authority to appoint different dates for coming into being different provision of the said Act.

²²See for example the interpretation section in Malaysia Space Board Act, 2022 under section 2 and Kenya Space Act, 2024 under section 2 which is also proposed to form part of TNSAA.

With regards to application, the proposed TNSAA shall apply to space zone. The proposed TNSAA is advised to define the “Space” to mean the universe not subject to national appropriation by claim of sovereignty, by means of use or occupation, or by any other means²³. In other words “Space” here is void extending from one hundred kilometers above sea level²⁴. Therefore, TNSAA shall only apply to the activities taking place or intended to take place at the region commencing from and above one hundred kilometers above sea level²⁵.

Limitation and Application of the Proposed Tanzania National Space Agency Act

The paper propose that the proposed TNSAA to limit its application only to all peaceful uses of outer space. The proposed TNSAA is proposed to limit its application to all space activities with exclusion to Military Space Operations. That the provisions of the TNSAA shall not apply to Military Space Operations. That the general control and supervision of Military space Operations proposed to be the function of the Tanzania People’s Defense Force (hereinafter referred to as TPDF) (The Constitution of the United Republic of Tanzania, 1977)²⁶.

5. The Principal Legal Frameworks

It is proposed by this Paper that the proposed TNSAA should have a number of principles of its legal framework. These are the Establishment of the Tanzania National Space Board, Establishment of the Tanzania National Space Agency, authorization matters in regards of licensing, launch permits, launch certificate, and their procedures; registration of space objects; liability and indemnification; prohibition of activities and offences; event of incident and accident; power of enforcement of public officer; and other relevant legal matters. It should be borne in mind that the above legal framework are expected to regulate and govern national and international space activities in Tanzania.

5.1. Establishment of Tanzania National Space Board

5.1.1. Powers of the Board

The proposed TNSAA is proposed to establish the Tanzania National Space Board (Hereinafter referred to as TNSB)²⁷. This proposed Board is crucial to Tanzania as a Principal Body which will be blessed with power to advise the Tanzania

²³See Article II of the Treaty on Principles Governing the Activities of the States in the Exploration and Use of Outer Space, including the Moon and other Celestial Bodies, United Nations, Treaty series, vol.610, No.8843.

²⁴See also the interpretation section under Malaysian Space Board Act, 2022 in section 2.

²⁵See also the interpretation section under Malaysian Space Board Act, 2022 in section 2.

²⁶The proposed provision is as follows; (1) This Act shall apply to all peaceful uses of outer space (2) The provisions of this Act shall not apply to Military Space Operations. (3) The general control and supervision of Military Space Operations shall be the function of the Defense Force Committee as established under Article 148 of the Constitution of the United Republic of Tanzania of 1977 and Section 7 of the National Defense Act, Cap 192.

²⁷The legal rules related to the establishment of this Board has to be shown in the expected Act.

government in matters related to the full implementation of the proposed TNSAA.

The proposed TNSB shall not only advise the country on matters related space activities but to make sure the efficiency of the implementation of the proposed TNSAA, the rights and duties derived from any agreements, conventions, and relevant international treaties and accords. Not only that but also the proposed TNSB is expected to issue guidelines and directives relevant to the proposed Act and any other related matters²⁸.

The TNSB members such as the chairperson is proposed be appointed by the President²⁹ together with other members who will be appointed by virtue of their positions³⁰. Again, four members not being public officers or employees or directors of any public company, appointed by the minister³¹ by virtue of their knowledge and experience in matters relating to defense, security, engineering, agriculture, mining, environmental science or space activities or any other relevant fields. It is proposed that the appointment of the members shall be made public in the Government Gazette. It is proposed that the Board members shall be eligible to serve for the period of three years and shall be eligible to be re-appointed for the one further term.

5.1.2. Qualifications for the Appointment as Chairperson or Member of the Board

For a person to be appointed as the chairperson or member of the Board the paper proposed that such person should be a citizen of Tanzania by birth, holds a degree in any recognized University, has experience in the relevant sector for a period not less than ten years for the position of chairperson and five years for the position of member.

When the office of the Chairperson is vacant or otherwise unable to perform his duties accordingly like presiding over the meetings, then the paper propose that the members present shall be responsible to appoint any member from within to act as a member for the time being (*The Kenyan Space Act, 2024*)³². The acting

²⁸Other matters include manage, control and administer the assets of the Agency, matters related to expenditure of the Agency, acquire, hold, lease any property of the Agency with inclusion to intellectual property rights, receive gift on behalf of the Agency and made expenditure on behalf of the Agency in accordance with the Act, open and maintain bank account, enter into association with different space stakeholders.

²⁹For a person to be appointed as the chairperson he/she must demonstrated knowledge and experience in Defense, Security, Engineering, Agriculture, Environmental Science, Space Activities or any other related field.

³⁰The Principal Secretary in the Ministry for the time being responsible for the Office of the President or their representative; Chief of Defense Forces, or their representative; the Principal Secretary in the Ministry for the time being responsible for Defense or their representative; the Principal Secretary in the Ministry for the time being responsible for Finance or their representative; the Principal Secretary in the Ministry for the time being responsible for Science and Technology or their representative; the Principal Secretary in the Ministry for the time being responsible for Information, Communication and Technology or their representative; the Attorney General or their representative; and the Director General, who shall be an ex-officio of the Board.

³¹For the purpose of this discussion the Minister means the current minister charged with responsibility for Information, Communication and Information Technology of Tanzania.

³²This is the good practice as provided under section 12(2) of the Kenyan Space Act.

Chairperson will also be charged with responsibilities of managing the TNSB affairs, the executions of the TNSB decisions and performing any other duties as instructed by the TNSB.

5.1.3. Delegation of TNSB Functions

It is proposed by this paper that the TNSAA permit the TNSB to delegate to a committee of the Board or to any member of the Board, Officer or agent of the Agency to perform any duties or function or exercise any powers that the proposed TNSB may exercise under the Proposed TNSAA. It should be borne in mind that the delegation shall observe the principle of “*Delegatus non Potes delegare*” which means the delegate cannot further delegate. It should be also observed that TNSB may, by resolution delegate its functions generally or in any particular. Thus, the delegate is bound to strict adhere to the conditions and restrictions imposed by the Board. This means all functions and tasks delegated shall be exercise on behalf and in the name of the Board³³.

5.1.4. Meetings of the TNSB

The proposed TNSAA proposes that the TNSB to have its annual meetings four times a year. The interval of one meeting and another is proposed to be not more than four months from the date of one meeting and the other. It is proposed that all meetings of the Board shall be presided over by the Chairperson. In case of his absence, other members present shall be allowed to replace the chairperson by members present appoint him or her. It is also proposed that the member appointed shall act as the chairperson only for the purpose of that meeting. The quorum of the Board shall be two third of the members of the Board (*The Kenyan Space Act, 2024*)³⁴. Again the board from time to time may invite any person blessed with skills and experience of which are necessary for the execution of the functions of the Board when the need arise³⁵. The procedure regarding the affairs of the Board is proposed to be regulated by the Board itself.

Again, the TNSB proposed to be given the legal mandate by the proposed TNSAA to create any committee that may deem fit. The chairperson of this committee is proposed to be the members from within or any other person and assign any person to be member of the committee³⁶.

5.1.5. Remuneration and Vacancy of Office

The paper propose that the members of the TNSB shall be paid their fee, remuneration, allowances and any other entitled benefit by the Agency³⁷. The amount,

³³See the good practice from section 10 of the Malaysia Space Board Act, 2022.

³⁴See section 12 of the Kenyan Space Act, 2024 and section 9 & 10 of the Malaysian National Space Board Act, 2022.

³⁵The Board may from time to time co-opt into its membership any person whose skills and experience are necessary for the performance of the functions of the Board to assist in any specified matter on need basis. This person shall not have power to vote on any matter before the Board.

³⁶See the experience from section 11(1-3), (5) and (7) of the Malaysian Space Board Act, 2022.

³⁷There proposed to be established an Agency known as Tanzania National Space Agency established under the proposed Tanzania National Space Agency Act.

the manner and how such remuneration be paid shall be from the recommendation of the Salaries and Remuneration Commission³⁸. The proposed TNSAA is advised to provide that the office of the member of Board shall said to be vacant if a member resign is the Chairperson other than *ex officio*³⁹ resign by giving notice to the President in writing, and in case of a member, to the Cabinet Secretary. In case of a member by declared bankrupt⁴⁰, convicted of criminal offence, sentence, incapacitated, absenteeism, removal from Board and upon death of the member. The notice shall be said to be valid following the date mentioned in the notice, and in case no date is mentioned then the date upon which the notice is received by the president or the cabinet secretary.

5.2. Establishment of the Tanzania National Space Agency

The paper propose that the proposed TNSAA has to establish another organ called “The Tanzania National Space Agency” (herein after referred to as the Agency). For the betterment of its functions, the Agency proposed to be a body corporate with perpetual succession. This means this body shall be blessed with power to sue and being sued and capable owning its own seal⁴¹. The paper propose head-quarter of this Agency to be in Dar es Salaam and may establish its offices in any other places within the country for the execution of its functions. The paper propose that the Agency be under the person called the Director-General (DG) who shall be the chief executive Officer of the Agency. This person is proposed to be appointed by the TNSB under the terms to be determined by the TNSB⁴². The paper propose that under certain circumstances the DG, may in writing, either generally or specifically delegate his power to any person or any of the power exercisable by him under any written law.

³⁸See Public Officers (Salaries and Allowances) Chapter 123 [RE: 2002].

³⁹For the purpose of TNSAA, the *ex officio* means “person whose skills and experience are necessary for the performance of the functions of the Board to assist in any specified matter on need basis. “They shall not have powers to vote on any matter before the Board.

⁴⁰Among others; the functions of the Agency are co-ordinate and regulate space related activities in the country, implement Tanzania space policy, strategy, national space programme, advice the government on matters related to outer space, legal issues and enactment of relevant legislations to ensure successful execution of Tanzania space programme, advice the government on the enactment of relevant legislation for the implementations of outer space treaties and conventions to which Tanzania is a party; to formulate, develop, update and recommend to the government about the national space policies and strategies and programme, to create awareness and capacity building to the to the public about space science and technology and its applications, to establish national space centers whenever necessary, authorize, license and maintain supervision of space activities in the country just to mention a few.

⁴¹The Agency is proposed also to own and dispose of movable and immovable properties, taking, purchasing, holding, charging property, entering into contract, power to receive and borrowing of money, establishing commercial entity for proving space services; acting and doing all legal acts for the purpose of execution of the Act that can be done by any other body corporate.

⁴²The paper propose the qualification for the person to be appointed as the DG if he/she is the citizen of Tanzania, possess a Bachelor degree and post-graduate from any recognized University in Tanzania, having experience of not less than ten years on matters related to space science and technology and hold senior level in management in Public or Private sector, and any other matter the board may deem fit to consider.

Functions of the Agency

1) Advisor on space related matters

Just like the Board, the Agency is proposed to be advisor to the Tanzania government on matters relating to outer space. The Agency is proposed to ensure the implementation of the TNSAA in the country. When it comes to the implementation of the obligations resulting from the agreement, treaties and international treaties and accords; the agency is advised to make sure it execute and implements them to the fullest (*The Kenyan Space Act, 2024*)⁴³.

2) Enter into contracts on space related matters

Apart from the above, the Agency is proposed to have the power to enter into mutual agreements with persons, government, agencies be it bilateral or multilateral agreements with the aim of implementing its authority. So also to act as a bridge between institutions and government agencies to make sure the implementations of space programme are conducted through funding, sponsorship, partnership, collaboration and alike.

3) Supervision of space activities

The paper propose that the TNSAA to bequeath the agency with power of supervision and monitoring of authorized space activities carried out from Tanzania and those carried out side Tanzania by Tanzania entities registered in Tanzania. This is to abide with Article VI of the Outer Space Treaty 1967⁴⁴, in which it impose legal obligation to the state party (government) to supervise and monitor all activities conducted by their non-governmental organizations. This signifies that all activities conducted by these non-governmental sector should only be conducted upon authorization from state's authority mandated with power to issue such authorization to carry out space activities.

5.3. Authorization: Licensing, Approval, Launch and Launch Certificate

It is the requirement of Outer space law⁴⁵ that for any activity in outer space that has to be conducted by private entity, the authorization has to be from the government. Thus, it is proposed that the TNSAA should provide an obligation to the Tanzania government to provide authorization especially for its private space activities. Hence, it is proposed that the TNSAA to establish three types of

⁴³That the Agency proposed to also to implement the Tanzania space policy, strategy, programme, advisor to the government on matters related to legislative on matters of treaties, conventions and agreement to which Tanzania is a party, to develop and recommend to the government on matters relating to space policy and strategy, promoting capacity building on science and space matters, establish space centers, ensure the following norms of responsible behavior in the use of outer space, authorize license and continually supervise space activities in Tanzania and any other related matters. For full guidance see Section 6 of the Kenyan Space Act, 2024

⁴⁴Outer Space Treaty 1967, Art VI stipulates: "... The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty".

⁴⁵Outer Space Treaty 1967, Art VI stipulates: "... The activities of non-governmental entities in outer space ... shall require authorization ... by the appropriate State Party to the Treaty ...". See also Liability Convention 1972.

authorization. These are; License, Launch and Launch Certificate.

To begin with space license⁴⁶ and approval, the paper proposed that the TNSAA should endow the Agency with mandate to issue license. This is the one of the key modes of authorization exercised by most of the countries space agencies.

Thus, any entity⁴⁷ wishes to conduct space activities⁴⁸ in Tanzania shall made the application in writing and submit the same to the Agency. The paper propose that the TNSAA to include a provision which state that the application to the Agency be processed after payment of the prescribed fee. The Agency is proposed to have the power to probe for additional documents or information if the need arise. When satisfied, the Agency shall grant the license.

With respect to space activities that entail the issuance of a license and approval, the conditions for conducting space activities are expected to be enshrines in the TNSAA. The types of space activities proposed entails building or manufacturing of space object⁴⁹, owning or operating space object, owning or operating space facility, space weather, Navigation and positioning service, ground infrastructure, space system engineering and communication satellite.

It is proposed by this paper that the proposed TNSAA has to establish the offence for any entity⁵⁰, which fails to adhere to the requirements imposed. When the violator is the natural person, liable to a fine or imprisonment. Where the violator is a body corporate, liable to a fine. The amount of a fine and imprisonment has to be specifically mention in the proposed TNSAA and be it in Tanzania shilling. Additional conditions to the requirements may be added by the Agency⁵¹.

The proposed TNSAA shall provide that the license will be evidenced by the license certificate and its life shall not be to the infinite. This means the license certificate shall clearly specify the life time of such license. When the need arise for renewal, the application for renewal shall be made in a prescribed form to the Agency⁵². When the application for renewal has been approved by the Agency, the applicant shall be subjected to make a payment in a prescribed fee determined by the Agency. Any licensee issued with license may decide to surrender that license

⁴⁶“License” means a certification that a product, service or process is compliant with Agency’s specific standards, requirements and regulations.

⁴⁷“Entity” means a body including a company or association or body of persons corporate or unincorporated whether foreign or Tanzanian.

⁴⁸Space activity “means the launching of objects into outer space, the operation of a launch or re-entry site, the operations and guidance of space objects, design and manufacturing of spacecraft, the application of space sciences and technology, and exploration activities and research;”

⁴⁹“A spacecraft and a launch vehicle, including the spacecraft and launch vehicle parts. However, a ‘launch facility’ refers to any launch pad, spaceport, sea platform or other structures or any ship, aircraft or other conveyances, from which a space object may be launched into space, including any equipment or installation at the launch pad, spaceport, sea platform or other structures on the ship, aircraft or other conveyances, which are necessary to launch a space object into space”.

⁵⁰“Entity” means a body including a company or association or body of persons corporate or unincorporated whether foreign or Tanzanian’

⁵¹The Agency shall be allowed by the Act to impose additional conditions, vary, or revoke them as the need require. Any person be it natural or artificial violate these conditions shall be liable to a fine in case of body corporate and liable to a fine or imprisonment in case of natural person imposed by the Act.

⁵²The Agency shall be blessed with the power to accept the application for renewal or deny.

in writing taking into accounts the conditions set for surrender⁵³. The Agency, May on its own *suo mottu* in writings suspend, revoke license if satisfy itself that some conditions have been breached⁵⁴.

The second mode of authorization which is proposed by this paper is the issuance of launch⁵⁵ permit by the TNSA. That any launch provider or any entity intend to engage in a business of launching provider be it in Tanzania or outside shall be required by the law to seek for launching permit from the Agency. In other words, the Agency approval is necessary by the agency. The permit shall be associated with special requirements to be fulfilled by the launching applicant. The paper propose the TNSAA to impose fine in case the violator (applicant) is body corporate and fine or imprisonment in case the violator is natural person (applicant) for any violation of the requirements⁵⁶.

The paper proposed the manner in which the application may be channeled to. This include submitting the launching permit to the Agency and payment of the prescribed fee. Upon receiving the application and receipt evidencing payment of the prescribed fee, then the Agency may consider the application. Upon satisfied with the adherence of the requirement, then the Agency shall communicate with the applicant through written notice regarding the Agency's intention to grant the launch permit. The most important requirement include insurance⁵⁷.

The third mode of authorization is launch certificate. It is proposed by this paper that the proposed TNSAA must make mandatory to any Tanzanian entity and who is the owner of the space object with intention to launch the object into the space from any launch facility be it in Tanzania or outside Tanzania, to apply for launch certificate. Any violation shall be taken as an offence by the proposed TNSAA and the offender shall be subjected to liability to a conviction of a fine to be indicated by the Act and imposed by the Agency.

For the application of the launch certificate, an entity must submit the application to the Agency. Upon receiving the application and receipt evidencing payment of the fee, and any additional document, where necessary, the Agency may then take the application into consideration. Upon satisfaction with fulfilment of

⁵³Any surrender of the license on the very date the Agency receives the license.

⁵⁴These breached may include the licensee fails to comply with the provisions of the Act, conviction of an offence under the Act, conviction of fraud, corruption, dishonesty, or moral turpitude, and so forth, or in the interest of the public national security, or international relation.

⁵⁵Means "the process of placing a spacecraft or payload into space by means of a launch vehicle, whether successful or not."

⁵⁶The Conditions imposed by the Agency may include but not limited to (a) prevent the contamination of outer space or cause adverse changes in the environment of the earth; (b) avoid interference with the activities of other space objects; (c) ensure peaceful exploration and use of outer space; (d) ensure safety, sustainability and environmental conservation; (e) have sustainable systems or mechanisms of deorbiting the payload from outer space on the termination of operations; (f) avoid breach of any international obligations of the United Republic of Tanzania; and (g) preserve the national security of the United Republic of Tanzania.

⁵⁷The requirement include the applicant must ensure that he will be insured in respect of any liability for any damage to a third party which may result from the launch of the space object into space and also to cover loss or damage to the launch vehicle, person operating the launch vehicle or such other requirements as may be prescribed under the regulations.

all requirements, the Agency may grant the launch certificate.

5.4. Registration Obligation

The paper proposes that the proposed TNSAA makes it mandatory for any space object to be registered. It is proposed that the institution blessed with the power to register the space objects be the Agency. The requirement of registration by Tanzania entity is proposed to be obligatory in the sense that the object has been launched into the earth's orbit or beyond, regardless of whether it is a launch from Tanzania or outside.

Again, the registration of space object is proposed to be mandatory for any Tanzania entity plans to launch a space object be it from Tanzania or outside. From this outset, the paper proposes for the registration of space object in two ways; one, is the registration of space object already launched, and two; for any space object planned to be launched by any Tanzania entity. The paper proposes that the proposed TNSAA to make it an offence for violation this requirement⁵⁸.

When the registration process has been completed, the paper proposes for Agency to keep and maintain the register of all space object registered in Tanzania. The Agency has to be mandated by the TNSAA to remove the name together with its particulars of any registered object. Again, the Agency, upon notified by the entity may amend the details of the object⁵⁹. That, the register shall be a public document, in the sense that any person be it natural or artificial may inspect a copy of a register upon payment of the prescribed fee to be determined by the regulations (*The Kenyan Space Act, 2024*)⁶⁰.

5.5. Liability and Indemnification

With regards to matters of liability, the paper proposed that the proposed TNSAA should expressly establish the absolute liability to the launch service provider⁶¹ for any damage resulting from the act of launch of any space object from any launch facility within Tanzania. The launch facility signifies any launch pad, spaceport, sea platform, or other structure, or any ship, aircraft, or other conveyances, from which a space object may be launched into space. It also comprises any equipment or installation at the launch pad, spaceport, sea platform, or other structures, or on the ship, aircraft, or other conveyances, which are essential to launch a space object into space (*Saari, 2023*), the launch provider denote those who provide service for launching a space object into space⁶².

⁵⁸See section 36(2) of the Malaysian Space Board Act, 2022.

⁵⁹The owner of the registered space object must notify the Space Regulator in the event of one of these situations: (a) The owner who is he entity must notify the Agency in the event of the following events; (a) the space object has stopped being in operation; (b) the space object is physically destroyed; or (c) there is any change in the particulars relating to the space object for registration purposes. See section 39(2) of Malaysian Space Board Act, 2022.

⁶⁰See section 32(3) of the Kenyan Space Act, 2024.

⁶¹The launch service provider refers to those who provide services for the launching of a space object into space

⁶²See section 39(2) of the Malaysian Space Board, 2024.

Again, the paper propose that even owner of the space object under the proposed TNSAA, has to be absolute liable for any damage occurred from any operation of his space object which has been launched into the earth orbit or beyond. The same has be to when the damage occurred from the launch of space object from the launch facility outside Tanzania. For the sake of this discussion, the owner of the space object is referred to as space entity registered in Tanzania.

The question of indemnification has to be covered by the proposed TNSAA. It is proposed by this paper that the TNSAA should impose legal mandatory clauses that any entity seeking in engaging in space activities in Tanzania has to first procure insurance and incase of any claim and proceedings brought against the government of Tanzania, indemnify the Tanzania Government for damage resulting from the launch of a space object or from a launch facility in Tanzania⁶³.

Again, the paper proposes that the TNSAA has to provide that an entity shall be obliged indemnify the Government against and damage or proceedings occurred during the operation process of its space object which has been launched into earths or beyond. The same obligation for indemnification should apply for any damage or proceedings brought against the Government resulting from the entity's launch of its space object facility outside Tanzania⁶⁴.

It should be observed from the earliest stage as possible that such indemnification due and payable at this stage, is regarded as civil debt due to the Government of Tanzania⁶⁵.

5.6. Prohibition of Activities and Offences

With regards to prohibition and offences, the paper proposes that the proposed TNSAA has to prescribe without a single shadow of doubt the provisions which provides that the space area must be used for peaceful purposes only. In this case therefore, the proposed TNSAA should prohibit any person to place, install, launch, or operate in space, any weapon of mass destruction. So also it should prohibit any performance of any testing of weapons used for mass destruction⁶⁶. And above all, the proposed TNSAA should strict illegalize anyone from forming a military base in space, as well as installing, fortifying, and carrying out any weapon testing, or conducting any military maneuvers in such area⁶⁷.

⁶³According to Art VI of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies place the international responsibility for national activities in outer space... for activities carried on by governmental agencies or nongovernmental agencies...

⁶⁴The Convention on International Liability for Damage Caused by Space Objects provides that the launching state, including the state which launches or procures the launching of a space object and the state from whose territory or facility a space object is launched, shall be liable for any damage caused by the launching of a space object.

⁶⁵See section 40 (4) of the Malaysian Space Board Act, 2024.

⁶⁶According to Art IV of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies provides states parties to the treaty undertake not to place in orbit... any object carrying nuclear weapon... or any other kinds of weapons of mass destruction.

⁶⁷See Section 40(2) and (3) of the Malaysian National Space Board, 2024.

Additionally, the proposed TNSAA should illegalize the act of any person who conduct activities in space that can endanger safety and security of any other lawful activity in space⁶⁸ and so also prohibit the conduct of any activity that may cause harmful contamination to space or lead to negative changes to earth's environment⁶⁹.

The proposed TNSAA should make it clear that any breach of the above prohibited activities will be regarded as committing an offence under the proposed TNSAA and will be liable under the proposed TNSAA. If the offender is an individual, he/she will be sentenced to a fine or imprisonment for a period of time to be specified by the proposed TNSAA. If the offender is an entity, it will be liable to a fine to be specified by the proposed TNSAA.

The proposed TNSAA should also make sure it enforces even some actions to be regarded as offences apart from the above prohibitions. These include but not limited to the discovery of either the space object, personnel, or passenger of spacecraft, and tampering with the space object (Saari, 2023: p. 129).

At this juncture, the proposed TNSAA should provide that anyone who sees any object that as a reasonable man believe it is originated from space or anyone whom he has reason to believe to be a personnel or passenger of a spacecraft, shall immediately notify the Agency, or any authorized officer of the Agency about his discovery. Additionally, the proposed TNSAA should clearly provide that anyone who contravenes this requirement is regarded as committing an offence and will be liable to a fine to be specified by the proposed TNSAA.

With regard to tampering with the space object, the paper proposed that the TNSAA to categorically makes an offence for any person who discovers the object that and as the reasonable man believe it is a space object, and he additionally tampers with the object, damage, remove, or destroy it provided it is necessary to do so with the aim of preventing any instant danger that may affect the wellbeing of life or property of the public. In respect of the foregoing incidents, the paper propose that the proposed TNSAA to hold liable those who commit the offence and subject them to the fine if the offender is natural person an entity.

5.7. Event of Incident and Accident

When dealing with space activities accidents or some incidents are likely to occur. Therefore, the paper proposed that the proposed TNSAA to impose some legal procedures to be followed in case of the above two incidents.

For the purpose of this discussion "*Incident*" refers to any occurrence associated with the space object or launch facility that affects or is likely to affect the

⁶⁸According to Art IX of the Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies... states parties shall pursue studies of outer space... and conduct exploration of them so as to avoid their harmful contamination...

⁶⁹Other acts which shall be illegalize include; any act that may endanger safety, sustainability and environmental conservation; act that may endanger sustainable systems or mechanisms of deorbiting the payload from outer space on the termination of operations; acts that may lead to breach of any international obligations of the Republic of Tanzania; and preserve the national security of the Republic of Tanzania.

safety of the space object, or launch facility, or involves circumstances where an accident nearly happened”⁷⁰. Whereas, “*accident*” “refers to any occurrence associated with a space object or launch facility which causes damage, including fall or collapse, collision, or explosion, of a space object or launch facility”. With regards to the issues of “damage” the proposed TNSAA should define the “*damage*” to mean “Loss of life, personal injury or any other impairment of health; or loss of or damage to property of States or of persons, natural or judicial or property of international intergovernmental organizations caused by space activity;” (*The Kenyan Space Act, 2024: section 2*).

5.7.1. The Procedures

1) Notification to the agency

First and foremost, it is proposed by this paper that the legal procedure to be adhered to by the licensee, launch permit holder, and launch certificate holder is to notify the Agency regarding any incident or accident which involve any launch facility or space object in their capacity. Failure to adhere to this legal procedure, the paper propose to be regarded as committing an offence under the proposed TNSAA.

After the notification to the relevant authority on the incident or accident, the question as to who will be custodian of such space object comes in. The paper propose that the proposed TNSAA should bestow the agency with legal authority to be the custodian of such object(s). The agency or any other person vested with such power by the agency shall take all reasonable actions to maintain the safe custody of the said space object(s) or launch facility. This shall include any other evidence be it crucial or collateral thereto relating to incident or accident. This obligation shall be upon the agency until the investigation officer is appointed by the minister responsible to investigate upon incident or accident. The paper also propose that the proposed TNSAA to make it an offence for any person who in one way or another interferes with, temper, removes, damage or destroys any of the space objects, launch facility or any other evidence be it in the custody of the agency or any appointed investigator.

2) Appointment of investigator(s)

From the above discussion, it has been noted that after the incident or accident the agency has to be notified. In this case, the next legal procedure is the appointment of investigators. After the government via space agency be informed about the incident or accident, then the minister shall appoint the investigators. The investigators shall be tasked with responsibility to investigate the incident or accident. These investigators(s) shall be considered to be experts in this field. The paper propose that the proposed TNSAA has to make it clear in its provisions that the sole aim of conducting such investigation is only for the prevention of future incident or accident and not for apportioning blame or liability (*Saari, 2023: p. 130*).

⁷⁰See section 2 of Malaysian Space Board Act, 2024.

3) Suspension of license, launch permit and certificate

The paper also proposed the last but not least the legal procedure to be enlighten in the proposed TNSAA regarding the suspension of the license, launch permit and lunch certificate. The proposed TNSAA must provide that all the three have to be suspended from the period of the happening of the incident or accident. The suspension shall last until the agency revoke such suspension. With regard suspension legal effects, the license, permit and certificate shall have no effect during which the suspension was active. So also, the expiry date of the license, permit or corticated shall not be affected at the time the suspension was active. When the need arise, the agency may revoke, or vary the conditions of the suspended license, permit, and certificate⁷¹.

5.7.2. Measures to Be Taken to Address Space Activity Accidents

This section dwells on providing the way forward so as to address space activity accidents. There have been a number of space accidents including 26,000-mph accident in 2009. The accident involved an American communication satellite and abandoned Russian satellite (Zimmerman, 2018). To avoid space accident, the proposed TNSAA has to incorporate within it the provisions which will address and require the proposed Agency and other related partners to develop a computer models which will predict the likelihood of collision. For example NASA developed a computer model, which is run for 200 years. This model predict the likelihood of accident below 1 in 1000. The model can predict even in the space which is most congested to the tune of 900 to 1000-kilometers altitude (Zimmerman, 2018). In this case the paper propose the Agency to adopt this model. Another way is to propose that the proposed TNSAA to include strict provisions that will guarantee inexpensive mitigation measures to limit the amount of space debris in outer space. Debris is one the factor that pose a threat towards space accidents (Deep Space Exploration Laboratory, 2024). Again, space activity accident can be mitigated by the proposed TNSAA strictly conform with the current voluntary international standards like not to target and shoot down objects in space, avoid excessive fuel in space object that may attract explosion and “*end-end-of-mission maneuvers to deorbit*” (McDougall, 1997).

5.8. Power of Enforcement of Public Officer

The paper propose that, the proposed TNSAA should bestow to itself the power of authorization through its public officers. The proposed TNSAA should mandate the Board after consultation with the Minister⁷² in writing, authorize any public officer⁷³ to exercise the power under the Proposed TNSAA. When it comes to investigation, the said authorized officer shall have power necessary to perform relevant investigation⁷⁴.

⁷¹ibid at footnote 63 at page 131.

⁷²For the purpose of this discussion the Minister means the current minister charged with responsibility for Information, Communication and Information Technology of Tanzania.

⁷³A person employed in the government to perform the duties ascribed to the Agency.

⁷⁴See section 19(1) of the Kenya space Act, 2024The Board may appoint such professional, technical and administrative staff as may be necessary for the proper discharge of its functions under this Act, and upon such terms and conditions of service as the Agency may determine.

When the offence under the proposed TNSAA is committed during the time of investigation, the said officers appointed may execute all or any of the special powers related to sizeable cases under police investigation as provided for under the Criminal Procedure Act⁷⁵ including the production of authority card⁷⁶ upon demand, by the authorized officer when executing his/her obligation bestowed to him/her under the TNSAA.

The paper also proposes that the proposed TNSAA to classify the types of search and seizure to be conducted by the authorized officer. This may include search and seizure with or without warrant. The search and seizure with a warrant can be performed by the authorized officer upon filing of an application in chamber summons supported by an affidavit to a Magistrate⁷⁷. Upon the application and the Magistrate sees it fit and necessary to enter the site, premises, or conveyance mentioned in the application, and if force is necessary to enter, the Magistrate may issue a warrant approving the authorized officer mentioned in the warrant to execute his duty, at any reasonable time by day, or by night, and with, or without assistance⁷⁸.

When it comes to search and seizure without warrant, the paper proposes that the TNSAA must set conditions to be met before this kind of warrant to be legally exercised. The paper proposes that some of these conditions are that the authorized officer should have reasonable ground to believe that any delaying in search and seizure so as to obtain warrant, may definitely lead to affect the credible evidence of the commission of the offence. A good example is any delay may lead to evidence tempering, removed, damaged, or destroyed. When these circumstances are available, the paper propose that the TNSAA to authorized the officer to enter the site, premise or conveyance and execute his duties as bestowed to him/her by the proposed TNSAA as if he/she were authorized to do so by the issued warrant by the court of law.

Upon search, and seizure is effected, the authorized officer has to prepare a list of things seized. This may include but not limited to launch facility, space object, documents, accounts signboard, computerized data, letter, leaflet, pamphlet, notice, facility, vehicle, apparatus, device, equipment, thing, device, and any other thing necessary. That the authorized officer shall sign the list and make it delivered to the owner or in charge of the site, premise or conveyance searched or to any agent's or employee.

With regard to the seized space objects, they will be held under the Government's custody pending the completion of any proceedings under the proposed TNSAA. The cost of holding the seized space objects in custody shall be regarded as a debt due to the Government and must be recoverable accordingly.

The paper propose that the proposed TNSAA to bless the enforcement officer

⁷⁵Section 38-45, Cap. 20 Revised Edition 2019.

⁷⁶This authority card shall be provided by the Agency.

⁷⁷The magistrate here means the Residents Magistrate in charge of the Resident Magistrate's Court.

⁷⁸See section 50(1) of the Malaysian Space Board Act, 2022.

with the powers to release the seized space object at any time after reference is made to the Agency, the power of forfeiture with regards to space object, power to access computerized space data, power to summon any person conversant with the disputed space case, power to examine any person conversant with the disputed space case and so forth.

5.9. Other Relevant Legal Rules

In executing their duty free and without fear of being prosecuted, the paper propose that the proposed TNSAA to provide the legal rules which will provided protection against any suits and any legal proceedings in any court against the Board members and staffs of the Agency when executing their obligations under the proposed TNSAA. However, the proposed TNSAA should make it very clear that this rule is not absolute but qualified. That the application of this rule shall only be applicable when the action was done in good faith and was necessary for the betterment and the very aim of the proposed TNSAA. This rule and its exception is proposed to be applied to any act or omission done or purported to be done by any person in executing the order, direction or instructions from the above named person⁷⁹.

Providing protection against any legal proceedings with regards to liability for damages results from trespass or nuisance is another legal rule proposed to be imposed by the proposed TNSAA. In this case, it shall not be allowed to bring, institute, or maintain legal action against the Agency in respect of trespass or nuisance by reason only of space activities carried out by the Agency with respect to any property at a height above the ground provided that the requirements of any other written laws in Tanzania were adhered to. However, this is a general rule. The paper propose that the proposed TNSAA has to make exceptional provisions to the effect that the agency shall not be exempted from liability under the proposed TNSAA to pay compensation or damages to any person for injury to him or his property or any of his or her interests caused by the exercise of the power bestowed to the proposed TNSAA or by failure, be it wholly or partially, of any action⁸⁰.

With regards to Intellectual property rights⁸¹ (Hereinafter referred to as IPR). IPR serves as the legal framework that protects intellectual creations and innovations that arise from scientific research, engineering feats, and technological advancements. In this case, the paper propose that the proposed TNSAA to incorporate within it the provisions that will guarantee and safeguard the protection of IPR. This can be done by the proposed TNSAA to support the registration of IPR

⁷⁹The rule against suit and legal proceedings is well mentioned in a number of space legislations globally. A good example is Malaysian Space Board Act and Kenya Space Agency Act in section 64 and 44 respectively.

⁸⁰This rule is well explained under section 45 of the Kenya Space Agency Act, 2024.

⁸¹IPR is a category of property that include intangible creation of human intellect. IPR encompasses patents, copyrights, trademarks, and trade secrets.

These creations grant creators and inventors exclusive rights to their innovations.

of inventions in space science and technology.

With regards to the issue of Regulations, the paper propose the proposed TNSAA to formulate rule for the construction of appropriate regulations. That the minister may, in consultation of the Agency make rules and Regulations for giving effect and expedite the purpose of the proposed TNSAA and making sure the efficiency of the execution of its provisions. Among others, the Rules and Regulations to be constructed by the minister include fixing the manners for the license application, launch permits, and launch certificate; to fix for the requirements for license issuance, launch permits, and launch certificate including requirements relating to financial and technical resources; to prescribe for fees payable under the proposed TNSAA; to prescribe for the manner of application for license renewal; to prescribe for the manner of registration of space object; to fix the manner of the liability for any damage resulting from the launch of a space object that is insured; to set the manner in which the investigation into any accident or incident shall be conducted⁸².

6. Summary of the Key Features of the Proposed Tanzania National Space Agency Act

After having a discussion on how the proposed TNSAA should look like, it is evident that the legal framework of the TNSAA comprises a number of sections. TNSAA is proposed to be divided into 10 sections. These include; Part 1 which include preliminary section of which shall contain interpretation of sections, Part 2 (Tanzania Space Board); This organ shall govern the affairs of the Agency such as its assets, contracts, bank accounts of the Agency and alike, Part 3 (Prohibition); This part shall provide the acts which are prohibited under the Act and acts to be followed, Part 4 (Licensing, etc); This Part provide for requirements of license and procedures to be followed by space entity when applying for space activity license, Part 5 (Registration of Space Object); This part shall provide for the mandatory requirements to the space object to be registered by the Agency. The Agency shall also be required to maintain register of all object registered. Part 6 (Liability); This part shall provide for liability of the space entity against the government of Tanzania for any liability that the government will be held liable for the act of space entity registered in Tanzania, Part 7 (Other Offences); This part shall establish the offences and punishment against any space entity registered in Tanzania and any other related matters, Part 8 (Incident and Accident); This part shall provide for the meaning of the terms incident and accident and the procedures to be followed

⁸²Others include (a) registration of space centers; (b) registration of space research and training institutions; (c) procedure on insurance; (d) (e) procedures for space tourism; (f) safety management systems and procedures; (g) certification of professionals in the space sector; (h) procedure on handling Earth Observation data; (i) procedure for satellite systems evaluation; (j) registration of space communication satellites and equipment; (k) registration of commercial earth observation space service providers (l) registration for commercial users of earth observation data; (m) registration for commercial users of the satellite navigation service; (n) registration of space weather equipment; (o) dispute resolution and complains handling procedure; and (s) any other matter that the Minister may deem necessary.

in case of accidents and incident, Part 9 (Enforcement); This part shall provide on how the Act will be enforced and lastly Part 10 (General) This part shall provide for general issues such as protection against any suit for board members and stuff when performing their duties, protection against any legal proceedings with regards to liability for damages results from trespass or nuisance, Intellectual property rights and powers of the Board to formulate Rules and regulation and dispute settlements procedures.

To comment on these, the paper propose the TNSAA not to ignore the cooperation and partnership. The cooperation and partnership among nations in space exploration and utilization can be enhanced if Tanzania's space activities are carried out responsibly and in accordance with international norms and standards. The paper found that ethical concerns and international cooperation are vital in the exploration and use of space, even though science and technology are progressing. The paper does, however, conclude that Tanzania's planned Tanzania National Space Agency Act is critical to the country's development and autonomy on the international stage. Therefore, in order to compete globally, Tanzania must prioritize investing in education and technology and have a clearly defined legislative framework. Inadequate legislation and policy-making regarding Tanzania's Space Agency has the potential to stifle the country's innovation, national security, political stability, environmental preservation efforts, and economic development in fields like agriculture, telecommunications, and transportation, among others.

7. Conclusion

The paper tried as much as possible to propose the key legal frameworks that the proposed TNSAA should look like. In some places it adopted some similar legal framework from other countries space laws and suggests to be included in the proposed TNSAA. These include Kenya National Space Agency Act 2024, Malaysian Space Board Act 2022, United Kingdom Outer Space Act 1986, China National Space Administration Act 1993, and African Space Act. The key legal framework areas that were proposed to be included in the proposed TNSAA include: the establishment of the space Board and agency, which will be the competent authority to deal with space activities, registration of space object, authorization of national and international space activities, license, insurance, liability, and indemnification issues just to mention a few.

The paper proposed that the proposed TNSAA unlike other Outer space legislations from other jurisdictions has to particularize the rule of constant monitoring and supervision of space activities from state's concerned authority in addition to power of enforcement to a public officer. The aim of this rule is to make sure the state's party adhered to Article VI of the Outer Space Treaty of 1967⁸³. This suggestion will make the TNSAA among the best Outer Space Act in the world as

⁸³Outer Space Treaty 1967, Art VI stipulates: "... The activities of non-governmental entities in outer space, including the Moon and other celestial bodies, shall require authorization and continuing supervision by the appropriate State Party to the Treaty".

it will guarantee the world that it monitor and supervise its non-governmental entities to comply with all the rule of the United Nations space treaties⁸⁴ as made mandatory by Outer Space Treaty 1967 under Article III⁸⁵. Unlike Malaysian Space Board Act 2024 for example, of which it only enacts provisions which endowed power of enforcement to a public officer. However, the Act said nothing about the issue of constant monitoring and supervision of space activities from the state's concerned authority⁸⁶. This power of enforcement is dissimilar with the power of constant monitoring and supervision of which it was suggested by this paper to be included in the proposed TNSAA. In Malaysian Space Act, 2022 (power of enforcement to public officer) is specific on the power of the said officers to investigate, search and seizure against incident or accident which involve any launch facility or space object. In the proposed TNSAA (constant monitoring and supervision) is centered much on monitoring the activities and providing supervision to the space players, against the two limbs which are technical and legal aspect, when the need arise. This is obligatory to warrant the licensee, launch permit holder, and launch certificate holder are always in obedience with Tanzania law, as well the international law.

With regards to the issues of indemnification and liability insurance, the paper proposed that the proposed TNSAA should provide for clauses that will address this issue. International law with specific to Outer Space laws categorically imposes the rule that the state shall be responsible for any act committed by its nationals in outer space. So also the liability against any damage or loss caused by space object launched by states or procured by the state under international level⁸⁷. This rule, is in fact, create a legal obligation to the state's government with regards to financial risk to compensate for any liability or loss from their national space activities at the international level⁸⁸.

Thus, the paper categorically proposed that the TNSAA should impose the provisions which make legal mandatory that any entity seeking in engaging in space activities in Tanzania to indemnify the Tanzania Government against any claim and proceeding brought forward against the Government for damage resulting from the launch of a space object, from a launch facility in Tanzania. It is also shown in the paper that in the situation the launch of space object is carried out

⁸⁴"The five major treaties are the Outer Space Treaty 1967, the Rescue Agreement 1968, the Liability Convention 1972, the Registration Convention 1975, and the Moon Agreement 1979".

⁸⁵Outer Space Treaty 1967, Art III specifies: "States 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 ..."

⁸⁶See Section 47-51, Malaysian Space Board Act, 2024, this power is however, regarding the power of investigation in the event of commission of an offence.

⁸⁷"Article VI, Outer Space Treaty 1967, imposes: 'States Parties to the Treaty shall bear international responsibility for national activities in outer space... whether such activities are carried on by governmental agencies or by non-governmental entities...'. the same is also provided under Liability Convention 1972".

⁸⁸"Liability Convention 1972, Art II mentions: 'A launching State shall be absolutely liable to pay compensation for damage caused by its space object on the surface of the Earth or to aircraft in flight'. See also Outer Space Treaty 1967, Art VII and Art VI".

by the Agency on behalf of the entity, the entity shall be required to procure insurance equal to the value of the probable loss. Again, the entity intends to launch any space object is obliged to insure any damage incurred to the third party as the result that entity launch a space object (*The Kenyan Space Act, 2024*)⁸⁹. The inclusion of this provision will safeguard the Tanzania government against any potential liability ascending from the space activities done by private entities. Unlike Malaysian Space Board Act, 2022 which only impose the obligation of insurance as the requirement to launch service provider before granted launch permit⁹⁰ and not to holders of space license and launch certificate, this paper propose that the TNSAA to include a provision which shall make a mandatory requirement of insurance to a holders of space license and launch certificate. This is because holders of space license and launch certificate are likely to be subjected to space liability in the course of conducting their space activities be it at the national or international level. With this condition, it is of the opinion of the writer that with the inclusion of this clause, the Tanzanian government's risk associated with her space liability will be more secured and safeguarded.

Lastly, the creation of a robust legal framework for national space agencies is vital for efficient governance and coordination of space activities. It is expected that enacting of TNSAA by the government of Tanzania will consequently result to the prosperous and boom of Tanzanian space activities be is national or international level. Not only that but also will be a catalyst in attracting foreign investors to be involved and participate in Tanzanian space activities confidently. With decent outer space legislation, Tanzania can safeguard, maintain, ensure, grow, and magnify its space activities and exploration with confidence and security.

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Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

⁸⁹That clause is proposed to provide like this “(1) Any Tanzanian entity seeking to undertake launch activities, shall procure insurance to cover against third-party loss and damage. (2) A Tanzania entity shall procure insurance to cover loss or damage to the launch vehicle, persons operating the launch vehicle or such other requirements as may be prescribed under the regulations. (3) A Tanzanian entity that undertakes launch activities without procuring insurance commits an offence and shall be liable upon conviction to a fine of (the fine to be determined by Act). or 10% of the gross annual turnover of the entity, whichever is higher. (4) Any entity seeking to undertake launch activities from Tanzania shall procure insurance to cover against any third party loss and damage. (This section is copied verbatim from section 35 of the Kenyan Space Agency Act, 2024”.

⁹⁰Section 22(3) of the Malaysian Space Board Act, 2022 reads: “The applicant for a launch permit shall cause to be insured in respect of any liability for any damage to a third party resulting from the launch of the space object to which the launch permit relates to in such manner as may be prescribed.”; s 22(4) reads: “Where the Board is satisfied that the requirement for insurance under subsection (3) has been fulfilled, the Board may grant a launch permit”.

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