

RESEARCH
ARTICLE**Contracts for the Transfer of Technical Assistance in the Defense Industry between Necessity and Criminalization****Tarek Khennouche**

Dr.

University of Chadli Bendjedid - El Tarf, Laboratoire Etudes Juridiques et Politiques

Algeria

Email Id: t.khennouche@univ-eltarf.dz

Imad Eddine Barkat

Dr.

University of Chadli Bendjedid - El Tarf, Laboratoire Etudes Juridiques et Politiques

Algeria

Email Id- barkat-imadeddine@univ-eltarf.dz

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Abstract

The stability and economic development of nations depend heavily on the strength of their defense and military systems. Developing countries strive to enhance their military capabilities and acquire advanced military technologies through military agreements that include technology transfer and technical assistance. According to reports from the U.S. Congress and the European Union, military technology will be the most focused on in the future, especially with the rapid advancements in artificial intelligence and the use of killer robots or "lethal autonomous weapon systems." Human rights organizations' reports indicate that these systems are unethical and pose a threat to global security. Moreover, international agreements signed by most nations criminalize the use of these systems and prohibit their transfer, imposing sanctions on their use against humanity.

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Introduction:

The current and future concern shared by all nations revolves around the pursuit of advanced military technology to safeguard their territories. In this context, various countries—especially the developed ones—have sought to reinforce their defense systems across land, sea, and air by relying on highly sophisticated technologies in the military field.

Given the strong correlation between military advancement, political stability, and economic development, developing countries have actively pursued access to such advanced technologies through the conclusion of bilateral agreements and technology transfer contracts in the defense industry with nations that produce and control these military innovations.

However, transferring military technology to these countries alone is insufficient, as they often lack the technical and practical expertise required to operate advanced military machinery and equipment. Therefore, technical assistance transfer agreements are considered the most effective mechanism to enable end-users to properly utilize this technology.

A technical assistance agreement—often referred to as a technology transfer agreement—is a commercial contract signed between two parties, through which technical and technological know-how is transferred from the provider to the recipient. These agreements are applied in various fields, including the defense industry, with the aim of facilitating the transfer of advanced knowledge and technology from a state or company that possesses them to a beneficiary state or company.

There are numerous agreements that have been concluded in the field of military technical assistance transfer. Among them is the U.S.-U.K. Military Assistance Agreement, which represents one of the most robust military partnerships globally, with both countries maintaining a close relationship in terms of technical and technological collaboration in the defense industry.

Another notable example is the Russia-India Agreement, as India is among the largest purchasers of Russian military equipment. Several agreements have been signed to transfer technical assistance and technology in areas such as nuclear weapons, helicopters, and submarines. Likewise, the China-Russia Agreement represents recent cooperation between the two powers, involving the exchange of technological expertise in weaponry and military equipment. These are just a few examples of key agreements in this domain.

Despite the numerous benefits that such technology transfers provide to recipient states, they also raise significant concerns and pose serious risks—particularly to humanity and the environment.

As a result, numerous international conferences and treaties have been convened to address and prohibit the spread of dangerous military technologies, especially nuclear and lethal weapons technologies.

Additionally, many human rights organizations have called for the criminalization of transferring such technologies.

This article centers on the following research question:

what extent can technical assistance transfer agreements in the defense industry be considered a sovereign necessity for states without conflicting with international criminalization efforts regarding the spread of military technologies?

To answer this question, the article adopts an analytical approach by examining the legal and regulatory framework of technical assistance agreements in the military field. It explores the balance between national sovereignty and security needs on one hand, and international obligations aimed at limiting the proliferation of military technology on the other. Furthermore, an inductive method is employed to illustrate the positions of various countries and

international organizations toward such agreements within the context of modern technological and military developments.

The study is structured as follows: the first section highlights the positive role of military technology transfer agreements as a strategic and economic necessity, while the second section is devoted to assessing the risks and threats that such transfers may pose to the environment and to human life.

1- The Strategic Necessity of Technical Assistance Transfer in Defense

1.1- Fields of Military Technology Transfer:

Modern armies have witnessed tremendous development in various fields of armament. Rapid and astonishing technological advancements have led to the emergence of new generations of weapons and enhanced the efficiency and capabilities of existing ones. In this regard, we shall highlight the most prominent technological developments in land, sea, and air weaponry systems.¹

According to a study issued by the U.S. Congress and another by the European Union,² the technological fields that have gained the most attention in recent years are closely linked to military advancements. Many countries are seeking access to these technologies by concluding technology transfer agreements and contracts for technical assistance in this domain. These include the following fields:

1.1.1-Artificial Intelligence (AI):

Discussions around lethal autonomous weapon systems (LAWS) have increased recently. These are AI-powered systems capable of identifying, selecting, and eliminating human targets without direct human intervention.³

1.1.2 -Hypersonic Weapons:

These include missiles and glide vehicles that travel at speeds significantly higher than sound—reaching five times the speed of sound or roughly two kilometers per second. What distinguishes these weapons is their exceptional accuracy, akin to sniper precision, with deviation from the target not exceeding one meter. Examples include hypersonic cruise missiles and ballistic missiles.⁴

1.1.3- Directed Energy Weapons:

These are long-range weapons that destroy targets using highly focused energy rather than physical projectiles. This includes laser-based technologies with applications targeting individuals, missiles, vehicles, and optical devices to disrupt or disable them.⁵

1.1.4- Biotechnology:

This refers to biological and toxic weapons, often utilizing microorganisms like viruses (e.g., COVID-19) and bacteria, or toxins produced by living organisms. These are intentionally released to cause illness and death among humans, animals, and plants. They are more advanced than conventional biological weapons in terms of spread, speed, and impact.⁶

1.2- Rationale for Technical Assistance Transfer in Defense Industries:

There are several reasons that encourage the transfer of technical assistance in defense industries, including the following:

1.2.1- Enhancing Military Capabilities:

Technical assistance is aimed at strengthening the defense and combat capabilities of countries or armies. Through the provision of advanced technologies and technical expertise, countries can improve and develop their capacities in areas such as precision weaponry, military equipment, military communications systems, and combat vehicles.⁷

1.2.2- Power Balance and Security:

The transfer of technical assistance seeks to achieve a balance of military power among states. This is done by enhancing the capabilities of smaller or technologically constrained countries, thereby promoting regional and global stability and reducing the likelihood of armed conflict.⁸

1.2.3- Technological Modernization and Innovation:

Technical assistance contributes to the modernization and development of military systems and technologies. By transferring advanced knowledge and technologies, it enhances a country's ability to address evolving security threats and to keep pace with technological advances.⁹

1.2.4- Development of Local Industries:

One of the primary goals of transferring technical assistance is to develop and strengthen local defense industries. Recipient countries can build capabilities in design, development, production, and maintenance—ultimately achieving self-reliance, creating job opportunities, and fostering economic growth.¹⁰

1.2.5- International Cooperation and Partnerships:

Technical assistance transfer fosters cooperation and partnership among states in the fields of defense and security. This includes the exchange of expertise, technologies, and information, as well as enhanced research and development collaboration and the building of joint defense capacities.¹¹

However, it should be noted that the conclusion of technical assistance transfer agreements in the defense sector must adhere to international legal standards, ethical norms, and national regulations. These agreements should also be subject to appropriate review and approval processes to ensure their safe and lawful implementation.

1.3- Legal Framework for Defense Tech Transfers:

The transfer of technical assistance in the field of defense is governed by a complex set of international agreements, national laws, and regulatory frameworks that aim to regulate arms transfers and ensure they do not contribute to the escalation of conflicts or violations of human rights.

1.3.1- International Arms Control Treaties:

Several treaties regulate the transfer of military technology and technical assistance, including the Arms Trade Treaty (ATT), which entered into force in 2014. The ATT seeks to establish international standards to regulate the international trade in conventional arms, prevent illicit trade, and promote transparency.¹²

1.3.2- United Nations Security Council Resolutions:

The UN Security Council issues resolutions that may impose embargoes or restrictions on arms transfers to specific countries or entities. These resolutions are legally binding on all UN member states and play a crucial role in controlling the flow of military technologies.¹³

1.3.3- National Export Control Laws:

Each country implements its own export control laws to regulate the transfer of defense-related technologies and technical assistance. These laws often require licensing and vetting of transactions to ensure compliance with international obligations and national security interests.¹⁴

1.3.4- Non-Proliferation Regimes:

Various non-proliferation agreements, such as the Nuclear Non-Proliferation Treaty (NPT) and the Missile Technology Control Regime (MTCR), impose additional restrictions on the transfer of sensitive technologies and technical assistance to prevent the spread of weapons of mass destruction.¹⁵

1.3.5- Ethical and Humanitarian Considerations:

Transfers of technical assistance must also comply with ethical standards and respect human rights. The international community increasingly emphasizes the need to prevent arms transfers that could be used in internal repression, violations of international humanitarian law, or to exacerbate regional conflicts.¹⁶

Therefore, states engaging in technical assistance transfers in defense must carefully balance their security and economic interests with their international legal obligations and ethical responsibilities.

1.4- Challenges of Defense Tech Assistance Transfers:

The transfer of technical assistance in defense industries faces several challenges that complicate the process and affect its effectiveness:

1.4.1- Security Risks and Technology Leakage:

One of the main challenges is the risk of sensitive military technologies falling into the hands of unauthorized parties, including hostile states, non-state actors, or terrorist organizations¹⁷. This risk necessitates stringent controls and careful vetting.

1.4.2- Differences in Legal and Regulatory Systems:

Variations in national export control laws and international regulations can lead to inconsistencies and legal uncertainties for both providers and recipients of technical assistance.¹⁸

1.4.3- Intellectual Property and Commercial Interests:

Companies involved in the defense sector often hesitate to transfer technical assistance due to concerns about protecting intellectual property rights and maintaining competitive advantages.¹⁹

1.4.4- Political and Diplomatic Sensitivities:

Defense technology transfers are often entangled with geopolitical considerations, with states using transfers as tools of foreign policy or withholding assistance to exert political pressure.²⁰

1.4.5- Capacity and Absorptive Capabilities:

Recipient countries may face difficulties in effectively utilizing the transferred technical assistance due to lack of infrastructure, skilled personnel, or institutional frameworks.²¹

Addressing these challenges requires coordinated international efforts, transparency, and the development of best practices that reconcile security concerns with legitimate developmental needs.

1.5- Policies and Recommendations for Effective Transfer:

To ensure that the transfer of technical assistance in the defense sector achieves its intended goals while mitigating associated risks, the following policies and recommendations are crucial:

1.5.1- Strengthening Export Control Mechanisms:

States must develop and harmonize export control laws to prevent unauthorized transfer of sensitive technologies, including establishing clear licensing procedures and compliance checks.²²

1.5.2- Enhancing Transparency and Reporting:

Increased transparency in transfer agreements can build trust among states and facilitate monitoring by international organizations.²³

1.5.3- Promoting Capacity Building:

Assistance programs should focus on developing the recipient countries' technical skills and infrastructure to absorb and maintain the transferred technologies effectively.²⁴

1.5.4- Encouraging Multilateral Cooperation:

International cooperation frameworks can help standardize practices and address cross-border challenges related to technical assistance transfer.²⁵

1.5.4- Balancing Security and Developmental Needs:

Policymakers should strive to balance national security imperatives with the economic and technological development goals of recipient countries.²⁶

Implementing these recommendations will contribute to a more secure, efficient, and equitable system for the transfer of defense-related technical assistance.

2- International Actions on Military Tech Transfer Risks

After the remarkable expansion of military industrial technologies, they have come to pose a threat to humanity as a whole. Accordingly, the international community has sought to prevent the proliferation of these technologies due to the dangers they pose to all living beings and the environment. This section will explore:

2.1- Curbing Military Tech Proliferation Internationally:

2.1.1- The Treaty on the Non-Proliferation of Nuclear Weapons (NPT), 1968:

This treaty aims to prevent the spread of nuclear weapons and promote nuclear disarmament. Signatory states commit not to acquire or transfer nuclear weapons or military nuclear technologies.²⁷

Article VIII (3) of the treaty mandates review conferences every five years. Despite extensive consultations, the 2015 review conference failed to reach agreement on its final document.²⁸

2.1.2- The Biological Weapons Convention (BWC), 1972:

This legally binding agreement prohibits the development, production, acquisition, or transfer of biological and toxin weapons. Today, it includes 183 state parties.²⁹

The convention was deposited with the UN Secretary-General and remains of indefinite duration, with a 90-day withdrawal notice required.

2.1.3- The Organization for the Prohibition of Chemical Weapons (OPCW):

This international body was established to monitor implementation of the Chemical Weapons Convention. It employs around 500 personnel, including 180 trained inspectors responsible for on-site inspections in military and industrial facilities.³⁰

2.1.4- The Comprehensive Nuclear-Test-Ban Treaty (CTBT):

This treaty bans all nuclear explosions, including underground and atmospheric tests. Although widely supported, it has not yet entered into force due to incomplete ratification by key states.³¹

2.1.5- Arms Export Control Regimes:

Many states implement strict export controls to verify that transferred military technologies are used for peaceful purposes and to prevent proliferation to states posing regional or international threats.³²

2.1.6- Non-Proliferation Agreements:

Several international agreements aim to limit the spread of sensitive military technologies, such as the NPT, the Chemical Weapons Convention (CWC), and the Anti-Personnel Mine Ban Convention (APMBC). These agreements commit states to restrict transfers and promote the peaceful use of military technologies.³³

2.1.7- International Sanctions Mechanisms:

In cases of unauthorized or illegal transfers of sensitive technologies, the international community may impose sanctions, including trade embargoes and restrictions on defense cooperation.³⁴

2.1.8- UN Human Rights Efforts Against Arms Proliferation

The UN Human Rights Council regularly addresses the impact of arms transfers and civilian gun use on human rights. It emphasizes the need to mitigate violence and limit illicit arms and ammunition flows.³⁵

Furthermore, the UN Office for Disarmament Affairs (UNODA) supports the implementation of Sustainable Development Goal 16, particularly regarding reducing violence and illicit financial and arms flows by 2030.³⁶

2.2- Risks of Transferring Technical Assistance in the Defense Industry

2.2.1 Environmental Impact of Biological Weapons:

Biological weapons involve the use of microscopic pathogens that affect living cells, causing illness or death. Their deployment often results in the spread of diseases and epidemics, given their content of various types of harmful microorganisms. Among the most well-known are *Bacillus anthracis*, which causes anthrax, and *Clostridium botulinum*, which produces botulinum toxins capable of causing nerve paralysis. Other examples include pathogens used to induce the plague, commonly referred to as the “Black Death,” and viruses such as Ebola.³⁷

The transfer of military technology and technical assistance may involve the use of environmentally hazardous materials, such as toxic chemicals or waste. Improper handling during transportation, storage, or use can result in contamination of soil, water, and air.

In rare instances, leaks or explosions involving hazardous substances or nuclear weapons during their transfer or use in military industry may cause severe environmental disasters, threatening living organisms.

2.2.2- Impact on Biological Systems:

Transferring technical assistance in the defense industry may adversely affect surrounding biological ecosystems, including both flora and fauna. This includes negative impacts on biodiversity, destruction of natural habitats, and the extinction of species.

2.2.3- Impact on Climate Change:

The defense sector contributes significantly to greenhouse gas emissions and consumes large amounts of energy. Consequently, technical assistance transfers in this field may exacerbate climate change and contribute to global warming.

2.2.4- Security and Strategic Implications:

Transferring advanced military technology to politically unstable states or entities may lead to regional power imbalances and a dangerous arms race.³⁸

It can also increase the likelihood of proliferation to unauthorized recipients such as armed or terrorist groups, especially if agreements are not subject to strict regulatory oversight.³⁹

This may also undermine collective security by weakening disarmament efforts led by the United Nations and other international organizations, particularly in sensitive regions.⁴⁰

2.2.5- Economic Impact:

The transfer of technical knowledge in the defense industry often leads to the depletion of national budgets, as many countries tend to allocate substantial resources to defense and military industrial development at the expense of education, healthcare, and infrastructure.⁴¹

Furthermore, the dependence of recipient countries on foreign suppliers limits the growth of their domestic defense industries and hinders their technological independence.⁴²

2.26- Political and Legal Consequences:

Some agreements impose politically restrictive conditions on weaker states, such as defining the permitted use or specifying the authorized beneficiary, which results in political dependency.⁴³

Additionally, such transfers may violate international law, including the Treaty on the Non-Proliferation of Nuclear Weapons (NPT) or the Chemical and Biological Weapons Conventions, especially when transparency and oversight are lacking.⁴⁴ These practices contribute to escalating diplomatic tensions between states, particularly when military technology is transferred to a country considered a rival by others in the same region.⁴⁵

Conclusion:

In light of this study concerning technology transfer contracts in the defense industry—between necessity and criminalization—we have reached a set of findings and deemed it appropriate to present a number of recommendations.

First: Findings:

1. Technical assistance transfer agreements in the defense industry contribute to enhancing national industrial capacities, by enabling the transfer of essential knowledge and technologies for the production and maintenance of advanced military equipment and weaponry.
2. These agreements strengthen national security, as they provide access to modern military technologies and equipment that improve defense capabilities and deterrence strategies, thus contributing to the protection of the state, its citizens, and its national interests.
3. Such contracts can reinforce a state's strategic power, by equipping it with military systems that bolster its international standing and support its ability to deter external threats.
4. They require continuous innovation and technological development, which encourages recipient countries to invest in research and development (R&D) and in building local technological capabilities for the advancement of military systems.
5. Technical assistance agreements generate direct and indirect employment opportunities in the beneficiary country. The production and maintenance of military equipment demand specialized skills, which in turn strengthen the industrial sector and stimulate economic growth.
6. They promote the modernization of local industries by enhancing the technological and productive capacities of domestic companies, which helps attract investment and supports sustained economic development.
7. Technical assistance transfers serve as a tool for attracting foreign investment, providing opportunities for international companies to participate in military projects and offer technical services. This fosters economic cooperation and facilitates the flow of capital and technology from abroad.
8. Despite their benefits, such technology transfers pose environmental and biological risks, necessitating proactive measures to mitigate their negative impacts and ensure safety and security.

Second: Recommendations:

1. Ensure full respect for human rights at all stages of technical assistance transfer in the defense industry.
2. Refrain from supplying technology or equipment to countries that commit human rights violations or may use such assets to perpetrate crimes against humanity.
3. Incorporate transparency and accountability mechanisms in all technical assistance agreements to prevent misuse or diversion of technology.
4. All parties involved in such agreements should be held accountable for handling sensitive information and technologies in ways that prevent endangerment, misuse, or unauthorized access.

5. Environmental considerations must be integrated into all stages of technical assistance transfers, through the implementation of strict environmental standards in production and manufacturing, and through efforts to reduce pollution and minimize waste.

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