Developing Practical Cooperation through Science

Tunisia has been actively engaged within the framework of the NATO Science for Peace and Security (SPS) Programme since 2001.

The NATO SPS Programme enables close collaboration on issues of common interest to enhance the security of NATO and Partner nations by facilitating international efforts to meet emerging security challenges, supporting NATO-led operations and missions, and advancing early warning and forecasting for the prevention of disasters and crises.

The current SPS Key Priorities include:

- *Counter-Terrorism;*
- *Energy Security;*
- *Cyber Defence;*
- *Defence against CBRN Agents;*
- *Environmental Security;*
- *Security-related Advanced Technology;*
- *Border and Port Security;*
- *Human and Social Aspects of Security*.

Additionally, the SPS Programme helps to promote *regional security* through scientific cooperation among partners. The Programme also helps to *prepare* interested eligible nations for NATO membership. SPS activities often have a high *public diplomacy* value.

TUNISIA

Tunisia is an active partner in the SPS Programme. Leading areas for cooperation with Tunisia include **CBRN Defence, Cyber Defence, and Human and Social Aspects of Security**. Below are some examples of ongoing and completed activities led by scientists and experts from Tunisia and NATO member countries under the framework of the NATO SPS Programme.

Cooperative Activities

DIMLAB – DEPLOYABLE CHEMICAL AND BIOLOGICAL ANALYTICAL LABORATORY

NATO has been working with Tunisia to strengthen Tunisia's capacity to defend against CBRN agents. This Multi-Year Project (MYP) is a key component of the SPS contribution to the DCB package for Tunisia. November 2019 marked the official launch of this MYP, which will build two dual-use (civil and military) deployable laboratories, one chemical and one biological, for Tunisia and Morocco respectively. The DIMLAB project will build laboratories for the detection, identification and monitoring of both chemical and biological threats. It will focus on the application of nanobiotechnology to develop a fully operational, chemical-biological analytical turnkey solution for the use of academia and national institutions. *This project is led by Morocco and Spain with support from Tunisia.* [ref. G5571].

BIOFRIENDLY DECONTAMINATION OF CHEMICAL WARFARE AGENTS

This MYP aims to develop an innovative integrated system capable of detecting and decontaminating the environment from CBRN agents. This project proposes a novel approach to the decontamination from Chemical Warfare Agents (CWAs), which will sequentially adsorb and absorb CWAs from contaminated surfaces or the atmosphere without harm to human health and to the environment – unlike other existing types of decontamination systems. The developed system will facilitate risk management in response to terrorism and introduce new methods regarding the protection against, diagnosing, detection, destruction and disposal of CBRN agents. *This project was launched in 2021 and is led by experts from Portugal and Finland with support from Tunisia.* [ref. G5713]

CBRN FIRST REPSONDERS LIVE AGENT TRAINING

This ATC enabled first responders to survey, monitor and manage the consequences of a CBRN incident. Organized in 2016, the training was designed to assist nations in improving their civil emergency plans, complement national training systems, and improve cooperation between first responders. The ATC provided a structured, skills-based education and training programme for civilian and military personnel for the detection, identification and decontamination of CBRN agents. The activity contributed to enhancing public security by promoting advanced technologies, methodologies and best practices in preparation for potential CBRN threats. *This project was led by experts from Tunisia and the Czech Republic.* [ref. G5279].

SELF-DECONTAMINATING SMART TEXTILES FOR CHEMICAL WARFARE AGENTS DEGRADATION (CATALEX)

Chemical warfare agents (CWA) continue to constitute a considerable threat, and the decontamination and the protection of civilian population from exposure to hazardous chemicals is an important challenge. This project aimed to create easy-to-use, self-decontaminating textiles for effective protection, and with the ability to decompose harmful chemicals, namely those used as warfare agents. The innovative hybrid textiles are lighter, more durable and more cost-effective than previous protective systems. Through the design and development of smart textiles endowed with self-decontaminating properties based on a photocatalytic nanotechnology, this project contributes to the protection, decontamination and destruction of CWAs. *This project was led by scientists from Tunisia, France, Portugal and Egypt.* [ref. G4842].

MARITIME TACTICAL AND OPERATIONAL SIMULATIONS

This Advanced Training Course (ATC) brought together experts from the NATO Science & Technology Organization Centre for Maritime Research and Experimentation (CMRE) and the Ministry of National Defence of Tunisia in two sessions in February and March 2019. The purpose of the ATC was to discuss Modelling & Simulation (M&S) in the maritime domain in response to the needs expressed by the Tunisian Navy to upgrade a maritime simulator currently established at the Naval Base La Goulette. Upgrades to the simulator will be according to state-of-the-art technology and NATO standards, which will guarantee interoperability in this domain. *This activity was led by experts from Tunisia and Italy.* [ref. G5595].