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MINISTRY OF NATIONAL DEFENCE



HMoD Sustainability Route



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HELLENIC MINISTRY OF NATIONAL DEFENCE



**HMoD SUSTAINABILITY ROUTE
2015**



FOREWORD BY THE HELLENIC MINISTRY OF ENVIRONMENT AND ENERGY

The National Policy in the domain of Environment, Energy and Climate Change is aiming at the achievement of European and National objectives.

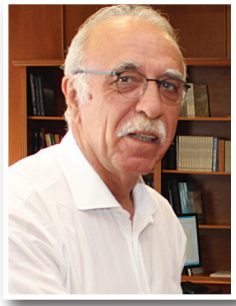
More specifically, the prevention of the degradation of the environment, the efficient use of natural resources and the simultaneous enhancement of the introduction of renewable energy sources in the national energy balance, are of high priority for the country.

Furthermore, Greece is raising its preparedness for tackling the climate change, through low carbon economy, and by implementing policies of mitigation and adaptation in the sectors of energy, industry and other similar ones.

On the other hand, sustainable development, which is based on the pillars of environment, economy and society, is a common objective at an international level.

In this context, we salute the initiatives of the Hellenic Armed Forces that focus on responding to the climate change and the promotion of the sustainable development, and therefore we welcome the present edition of the Hellenic Ministry of National Defence titled "HMoD Sustainability Route".

Ioannis Tsironis
Alternate Minister of
Environment and Energy



FOREWORD BY THE HELLENIC MINISTRY OF NATIONAL DEFENCE

The current edition issued by the Hellenic Ministry of National Defence (HMoD) is a continuation of previous publications of the HMoD, as the Environmental Policy and the Green Paper.

The edition "HMoD Sustainability Route" summarises the main actions of the Ministry, which comply with the respective national policy, aiming at the protection of the environment as well as the energy management.

At the same time, the vision and the objectives of the Ministry for the next decade are pointed out. These include, inter alia, the sustainable management of natural resources and energy, as well as the adaptation to the emerging threats because of the climate change.

Accomplishing the mission of the Armed Forces will be reinforced by successful preparation while being able to face the environmental and energy threats in the wider geo-strategic environment.

Having this in mind, we issue the edition entitled "HMoD Sustainability Route", with the objective of integrating a contemporary model of strategic and operational function in the Armed Forces, which supports their mission and at the same time respects the environment.

Dimitrios Vitsas
Alternate Minister of
National Defence

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Vision

The vision of the Hellenic Ministry of National Defence (HMoD) regarding the sustainability in the Armed Forces is to maintain the ability to perform their mission in the future, without the risk of environmental degradation. The core of this vision is the undeniable need to maintain the availability of the natural and anthropogenic systems as well as the natural resources in the future, taking into account at the same time the consequences arising from the climate change to the activities, the infrastructure and the mission of the Armed Forces as a whole.

The successful conduct of military operations, as well as the social contribution of the Armed Forces, directly depends on the availability of resources such as the energy, the wind, the soil and the water, as well as on the resiliency of the installations, the weapon systems and the personnel, in coping with the new climatic data. The quantitative sufficiency of the resources and their quality has a significant role in determining the success of the mission of the Armed Forces. Its successful outcome is analysed quantitatively regarding the safeguarding of our borders and the maintenance of territorial integrity of our country, and qualitatively regarding the sustenance of the natural environment and a sense of security to the population.

The Armed Forces directly communicate the concept of sustainability in the way they operate, and they indirectly contribute to the sustainable development of the country. This, in fact, is a permanent goal that has to be perceived and adopted at a fundamental level by the Armed Forces staff as a whole.

As far as the collaborative role of the Armed Forces is concerned in energy and environmental security matters of our country, as part of their mission concerning "the protection of the natural environment and the preservation of the mineral wealth", it is thoroughly examined through the appropriate collaborations.

The Armed Forces of the future will be energy efficient, with an environmental footprint that can be measured, monitored, managed, and through the use of new technologies, constantly decreasing, while efficiently responding to both external threats and unpredictable effects of climate change, in operational and social level. In this edition, entitled "HMoD Sustainability Route", the timely development of all those policies and mechanisms is presented, which will result in environmentally sustainable Armed Forces.

Climate Change

The climate change is by itself the greatest challenge of the future. More specifically, it is considered to affect the daily running of the military installations and the activities of the Armed Forces, due to the change of the natural characteristics of the theaters of operations and the limitation of the available energy and water resources. The quick and successful adaptation of the Armed Forces in the different, from now on, climatic conditions and the development of a resilient infrastructure and of plans facing extreme meteorological phenomena and natural disasters, is deemed imperative in order to achieve the sustainability and maintain the effectiveness of the armed forces.

The new geopolitical scene is dynamically changing, unpredictably many times, because of the consequences of the climate change in the availability of natural resources like the water, the hydrocarbons and the cultivated land. This results in the differentiation of the strategic goals of countries which are particularly affected by the climate change, in many people moving in order to survive (environmental refugees), as well as in the potential creation of new forms of demands and violence waves. Consequently, the climate change can by itself pose a threat against the security of the country, whose size and complexity in nature characterise its uniqueness.

The optimum way to face the climate change is to develop resiliency to the oncoming changes, adopting new technologies in the sector of self-sufficiency and security, the natural resources management and infrastructure development, directing the Armed Forces to a new sustainable model of operation.

Sustainable Development

The concept of Sustainable Development is the balanced state amidst the economy, the society and the environment in contradistinction to the growth without restrictions. The governance plays a decisive role in the achievement of a sustainable development, as a decision making and centrally directed context, assisted by the technology pillar and the life cycle analysis approach (LCA approach).

The HMoD has comprehended the deeper meaning of sustainability in defence matters and is drafting a relevant Strategic Plan (Sustainability Plan). A Sustainability Directorate is planned to be established in the Hellenic National Defence General Staff (HNDGS), as well as a Centre of Excellence on Sustainability in Defence.

The above are in compliance with European and Alliance legislation and the corresponding agreements, like the "Military Concept on Environmental Protection and Energy Efficiency for EU-led Military Operations" and the "Joint NATO Doctrine for Environmental Protection during NATO-led Military Operations". A relevant presentation was conducted, concerning the initiatives of the HMoD in the environmental and energy sectors, in the presence of the Special Permanent Environment Committee of the Greek Parliament, in November and December

2012, whereas the public has access to important information on sustainability actions of the Armed Forces, through its official website <http://www.greenarmedforces.mil.gr>.

Environmental Policy of the HMoD

The Environmental Policy of the Ministry was initially issued in 2007 and revised in 2014. The objective of the current Environmental Policy is to minimise the effects of all the Armed Forces activities on the environment and to implement sustainable development principles.

The Political and Military Leadership is committed to support the following five basic pillars on which the Environmental Policy of the HMoD is structured. The Compliance with the EU and national environmental legislation and the corresponding agreements in the context of the Alliance (NATO), the rational management of national resources and energy, the prevention of pollution, the constant improvement of the environmental performance and the overall staff participation, represent the stable direction of the Armed Forces to a new, modern and viable way of operation.

The institutional power of the Environmental Policy in the Armed Forces constitutes the necessary framework and it provides the incentives for the development of all those actions required to reflect the concept of sustainability as a way of operation to all the aspects of the military activities.

"Sustainability in Defence" initiative

The new Environmental Policy of the HMoD was communicated in the international conference "Sustainability in Defence" (SiD) that took place in June 2014 in the context of the Hellenic Presidency of the EU. The SiD focused on the necessity for a holistic adoption and application of technologies and practices according to the principles of sustainability, which can be applied both in the field of the Armed Forces and the Defence Industry.

During the conference, the necessity to expand the model of sustainable activity to the Hellenic Armed Forces was expressed for the first time. The manpower, the infrastructure and the financial resources constitute the main components, which under the influence of the Environmental Policy, constitute the steering power for the development of "smart" goals, which should be **S**pecific, **M**easurable, **A**chievable, **R**ealistic and **T**ime-bounded.

The application of known technologies, several of which were presented in the conference, together with the efficient use of existing National, European and NATO financing tools, aim at developing resilient infrastructure in the Armed Forces. These applications combined with the environmental awareness of the personnel will lead to the achievement of a double outcome. First of all, the timely and adequate adaptation of the Armed Forces to the new environmental and climatic conditions, converting the inherent weaknesses and the emerging threats to strengths and opportunities for development and improvement. Moreover, the conservation of natural resources and preservation of the ecosystem, the flora and the fauna of the country is intended. The SiD constituted a milestone for the future designation of proposals as well as of actions and innovations required, which would be beneficial for the Armed Forces to follow. As a result of the openness of the conference, liaison was established with research institutions and universities, which showed a special interest for future cooperation with the Armed Forces. The international practice of a triangular form of cooperation was promoted among "Armed Forces - Academic/ Research Bodies - Industry" intending to the efficient and productive external financing for the development and application of technology in the Armed Forces, the promotion of research and the establishment of a productive sector of knowledge-intensive industries, which will be internationally competitive. The new approach for the development of sustainability proposals resulted in a new direction of planning of the Ministry in the fields of infrastructure and environmental training for the next decade.

Actions and Future Planning

Institutional direction to sustainability

The universal application of the Environmental Policy is supported by directives, such as the Military Regulation entitled "Integration of Sustainable Development Principles in the Activities of the Armed Forces" as well as by the approved in 2013 Integrated Strategic Planning and relevant Performance Indicators of the Environmental Sector. The aim is to consistently monitor the implementation of the Environmental Policy of the HMoD.



Collaborations of the HMoD

The HMoD invests in the development of strategic collaborations. In this context it cooperates with Higher Education Institutions and Research Centers, the National Center for Research and Technology (CERTH), the National Center of Public Administration and Local Government (EKDDA), the Center of Renewable Energy Sources and Saving (CRESES) and other bodies of recognised standing. Similarly, the HMoD cooperates in matters of environment and energy with the North Atlantic Treaty Organization (NATO), the European Defence Agency (EDA), with networks of experts as the DEFNET, etc.

Moreover, the institutional cooperation of the HMoD with the Hellenic Ministry of Environment and Energy and with the MoD of the Republic of Cyprus aims at mutually designating objectives and actions in the wider field of the environment, the energy and the climate change. These collaborations resulted in environmental training in the Armed Forces, the design of Sustainable Camps and many other significant actions.

Enhancement of environmental awareness of the Armed Forces staff

The Hellenic HMoD was at the forefront of similar actions worldwide, when issuing and asking from the personnel as a whole to fill a questionnaire, concerning their environmental awareness.

The results of this study, as well as the concluding proposals, were drafted in cooperation with academic bodies representatives (Panteion University, the Hellenic Open University and the Athens University of Economics and Business) and they already constitute a tool for the planning of actions for further environmental awareness and training of the Armed Forces staff.

In the future, the overall aim is to create leaders and decision makers with modern strategic and operational perspectives concerning the environmental threats formed, as well as successfully incorporating the sustainable development principles in the activities of the Armed Forces.

Management of energy and carbon emissions

The LIFE+ "Military Energy and Carbon Management" Program in the Armed Forces has been implemented since 2012. This program is co-funded by the European Committee and the HMoD, whereas the Center of Renewable Energy Sources and Saving participates in this project as co-beneficiary.

It is a significant European and International lead of Greece in the Defence Sector, given that apart from the anticipated energy measures in Armed Forces installations, the recent certification for the application of the international energy management standard ISO 50001 is included, in selected Camps.

In cooperation with the Center of Renewable Energy Sources and Saving the pilot application of energy interventions is also planned through Energy Savings Performance Contracts (ESPC) in the installations of the General Staffs of the Armed Forces. The strategic goal for the next decade is to expand the energy measures to other significant installations of the Armed Forces, at the same time acquiring the respective certification.

Infrastructure energy security

The objective for the next decade is to establish energy – efficient major Commands adopting energy auto-production with the use of Renewable Energy and at the same time taking advantage of the areas of the Armed Forces and their available natural resources. The use of solar-thermal energy as an exclusive source of water heating is also planned. The target is to provide energy security to the Armed Forces and simultaneously to improve the environmental indicators as well as to develop resilience to climate change to the best possible extent.

In the context of energy autonomy conditions as well as of the rational use of energy combined with the use of green energy in the Armed Forces Camps, care is taken for the consistent energy awareness of the Armed Forces staff, and a respective initiative has been developed using Renewable Energy to cover the energy needs of the camps (REScamp Initiative), whereas in cooperation with other appropriate bodies the development of "smart" energy grids is planned.

Related to the above objective is the participation of the HMoD to the "GO-GREEN" project of the EDA, which includes energy production through photovoltaic systems.

The Armed Forces energy management map

The registration of the major Commands overall energy consumption is planned as well as their spatial distribution using a Geo-Information System (GIS). The implementation of the specific program will constitute the "Map" for the application of renewable energy sources in Armed Forces Units, aiming at the environmental footprint reduction and the best energy management of the units. Moreover, it will serve as a map presenting the greenhouse gases emission.

Management of natural resources

In the natural resources sector, and especially the water resources, the HMoD, in cooperation with the National Technical University of Athens, has carried out a study concerning the combination of water resources technologies management with respective information and communications technologies. The purpose of the study is the "smart" management of water resources in military installations. Therefore, this project was called "Smart Blue Camp". This study ignites a wider approach concerning the water resources sector in EU Member-States level in cooperation with the EDA.

Furthermore, actions and interventions in infrastructure are planned aiming at water consumption reduction in military installations, through the modernisation of the water supply system and through the development of practices for the immediate leakage detection.

Management of chemicals

It is planned to limit the use of harmful chemicals, simultaneously maintaining or enhancing the operational capabilities of the Armed Forces, while also implementing the REACH Regulation of the EU. The initiative of EDA concerning replacement of harmful chemicals in ammunitions with environmentally sustainable alternative substances (sustainable energetic materials) is also cited as a further indication.

Management of military training areas

The sustainable use of firing ranges and exercises is enhanced, aiming at the maximization of their operational use and the simultaneous protection of their eco-systems. This is achieved by following the example of allied countries, where the bio-diversity protection inside military areas is established. The purpose is to develop environmental management systems securing the sustainability of military training areas.

Environmental management of Armed Forces Units

The HMoD develops sustainability initiatives in the Armed Forces aiming at the sustainable management of all the flows of the waste produced. The pilot applications of technologies are examined, which will first achieve the rational management of waste in relation to the existing capabilities of reuse – recycling and second the recovery and exploitation of useful energy, in compliance with the best available European practices. In this context, the pilot certification of a Unit is planned according to the international environmental management standard ISO 14001, aiming at extending the procedure to all the military units. In parallel, we aim at adopting the use of energy out of waste (waste to energy).

Management of pollution

The cooperation of the National Technical University of Athens and the Technical University of Crete is planned, aiming at the development of a pilot application, of an economic, technological method for the in situ restoration of the subsoil (ground and ground waters) from pollution caused by the activities of the Armed Forces inside their installations. A response procedure is also developed concerning the control and prevention of pollution incidents from hydrocarbons. The purpose is the development of in-house expertise in order to tackle similar incidents by Armed Forces personnel and equipment.

Summary

The vision of the Armed Forces towards sustainability is formed on the basis of the above, within the context of their mission.

This vision is based on the Environmental Policy of the HMoD, it is formulated taking into consideration the directives of the Hellenic Initiative "Sustainability in Defence" and, finally, it integrates the requirement for preparation and response to emerging environmental threats, especially because of the climate change.

The adoption of sustainability in the Hellenic Armed Forces as a principle and a continuous guidance for our country's defence, guarantees actually a sustainable future for Greece.

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