



Federal Ministry
of Defence

Sustainability and Climate Action Strategy for the Area of Responsibility of the Federal Ministry of Defence

November 2023



BUNDESWEHR

Sustainability and Climate Action Strategy for the Area of Responsibility of the Federal Ministry of Defence

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Table of Contents

Foreword	7
Management Summary	9
1. Introduction	10
2. Background	12
2.1 Definitions	12
2.2 External Provisions	14
2.3 Sustainability and Climate Action in the AOR FMoD	16
3. Methodology	18
4. Sustainability Policy	21
5. Fields of Action	22
5.1 Mobility	22
5.2 Infrastructure	34
5.3 Personnel	43
5.4 Procurement and Consumption	50
5.5 Environmental Protection and Nature Conservation	61
5.6 Health and Food	71
5.7 Peace and Security	78
5.8 Society	86
5.9 Digital Transformation and Innovation	92
6. Implementation	100
6.1 Coordination and Management	100
6.2 Coordination Tools	103
7. Next Steps	104
8. Annex	106
8.1 List of Figures	106
8.2 List of References	109
Editorial Information	111

Foreword

Sustainable action and climate action are not an end in themselves. They form the basis for the prospects of future generations.

The 17 Sustainable Development Goals of the 2030 Agenda for Sustainable Development of the United Nations are therefore the guiding principle of the policy of the Federal Government. For this purpose, a German Sustainable Development Strategy was adopted for the first time in 2017 and amended and confirmed in 2022.

The implementation of this ambitious project means that we are in the middle of a comprehensive and demanding transformation affecting all areas of social life.



Photo: Bundeswehr/Norman Jankowski

The Federal Ministry of Defence as part of the Federal Government and the Bundeswehr as one of the largest employers in Germany have a special responsibility in this respect. It is important to fulfil the constitutional mandate and, at the same time, to act as a model for sustainability and climate action.

The possibilities for this are manifold and we seize them as the Strategy presented here shows. We make a significant contribution to sustainable and climate-friendly development. We venture into new territories and promote innovation in order to save resources and increase the efficiency of our armed forces and administration. Sustainable action has a direct impact on the self-sufficiency and resilience of the Bundeswehr. This in turn has a positive effect on other actors in government and society.

Against this background, we must not forget that sustainable development can only be achieved when peace and security are guaranteed. The Russian war of aggression against Ukraine shows how fragile the European peace order is. The area of responsibility of the Federal Ministry of Defence makes a decisive contribution to ensuring stability, security and freedom in Europe.

It is particularly important to me that the promotion of sustainable development and climate action is not at odds with our mission or with the operational readiness of our armed forces. Where both aspects conflict with each other we will rise to the challenges and opportunities of the transformation process, while never losing sight of our constitutional mandate.

Our Sustainability and Climate Action Strategy establishes sustainable action as a guiding principle throughout the entire area of responsibility of the Federal Ministry of Defence and thus forms the framework for achieving our ambitious goals together.



Boris Pistorius
Federal Minister of Defence

Management Summary

The challenges arising from the topic of sustainability¹ concern almost all the bodies of the area of responsibility of the Federal Ministry of Defence (AOR FMoD)². Consequently, this Strategy was developed with the participation of all directorates-general and two staffs of the FMoD.

The Ministry's mandate directly contributes to Sustainable Development Goal 16 („Peace, Justice and Strong Institutions“) of the United Nations. In addition, the AOR FMoD supports almost all other Sustainable Development Goals (SDG) and thus tries to fulfil the mandate as comprehensive as possible in accordance with our vision: We provide sustainable peace and security.

Sustainability is a guiding principle of action in the AOR FMoD. In the long term, sustainable action can be closely and successfully combined with the defence mission, even if it may involve significant efforts and changes in the short term. The contribution to sustainable development made by the AOR FMoD is long-lasting, comprehensive and significant. In light of Germany's international and national commitments to implement the global sustainability and climate action goals, the AOR FMoD must be prepared to comply with a large number of legal, strategic and programmatic provisions. At the same time, the AOR FMoD, according to its core mission, is gradually preparing to tackle security policy impacts resulting from global ecological, social and economic changes.

Two requirements – the fulfilment of the Ministry's mandate and the contribution of the AOR FMoD to sustainability – are decisive for the content and structure of the present Sustainability and Climate Action Strategy.

Based on national and international political provisions, nine fields of action have been identified through the Sustainability and Climate Action Strategy, which are mobility, infrastructure, personnel, procurement and consumption, environmental protection and nature conservation, health and food, peace and security, society and digital transformation and innovation. The fields of action comprise a total of 50 segments, which in turn are assigned to more than 500 implementation objectives and concrete measures. As an overarching strategy, the Sustainability and Climate Action Strategy provides a clear position for sustainable action within the AOR FMoD and provides guidance in this highly complex subject area.

The implementation of the Strategy is controlled decentralised by the specialist branches of the FMoD. In order to take account of the high social-political relevance of sustainability and to ensure a cross-sectional approach, the topics are strongly centrally coordinated.

1 Where sustainability is mentioned in the following document, then climate action is included as an essential component of sustainability.

2 The area of responsibility of the Federal Ministry of Defence (AOR FMoD) comprises the Ministry itself and the entire subordinate agencies. For details, see Chapter 2.1..

1. Introduction

As a principle of action, sustainability equally takes into account economic development, environmental protection and climate action and aspects of social justice – economics, ecology and social affairs. The necessary balance of these three dimensions of sustainability³ is both the optimum and a prerequisite for sustainable development. The principle of sustainable action must be taken into account in all actions of the AOR FMoD and contributes to strengthening the operational readiness and perseverance of the Bundeswehr in the long term and to ensuring its operational capability.

With the 2030 Agenda of the United Nations, the entire international community agreed upon 17 Sustainable Development Goals. Germany, too, has committed itself to achieving these goals. The AOR FMoD supports the implementation of these goals and the resulting sustainability strategies and programmes. Within the scope of its task, the AOR FMoD makes a direct and significant contribution to Goal 16 („Peace, Justice and Strong Institutions“) of the United Nations 2030 Agenda, for example through the international crisis management of the Bundeswehr. Germany’s Sustainability Strategy is also pursuing this goal and mentions peace, respect for human rights, security and strong institutions as the guiding principle for action of the Federal Government⁴.

In addition, the AOR FMoD is taking up the challenges of advancing climate change. On the one hand, this concerns the protection of the climate in the sense of climate change mitigation, which essentially comprises the reduction of greenhouse gases and is considered in this document. On the other hand, measures are required to cope with the effects of climate change that have already occurred or are expected to occur (adaptation), which are not considered in the present Strategy.

Based on the international commitments that have been translated into national objectives of the Federal Government, the AOR FMoD must be prepared for the implementation of a large number of legal, strategic and programmatic provisions for sustainable action.⁵ This includes, in particular, the achievement of climate neutrality in Germany by 2045 or the climate-neutral organisation of the Federal Administration by 2030.

As part of the implementation of the Federal Government’s legal, strategic and programmatic provisions, the AOR FMoD will undergo a comprehensive transformation process in the years to come, which in all probability will pose significant challenges in terms of personnel, organisation and financial resources.

³ Cf. Chapter 2.1 on the concept of sustainability.

⁴ Cf. 2021 Germany’s Sustainability Strategy: 341.

⁵ On the concept of the provisions, cf. Chapter 2.1. On the essential provisions, cf. Chapter 2.2.

The present Sustainability and Climate Action Strategy sets the organisational framework and the technical structure for achieving the sustainability and climate action goals in the AOR FMoD. The activities to achieve the goals are divided into nine fields of action – Mobility, Infrastructure, Personnel, Procurement and Consumption, Environmental Protection and Nature Conservation, Health and Food, Peace and Security, Society and Digital Transformation and Innovation.⁶ In doing so, the AOR FMoD can draw on what has already been achieved as well as on activities that have already been initiated, some of them over many years, which are already making a contribution to achieving the objectives.

The Sustainability and Climate Action Strategy enables early adaptation to changing conditions. As an overarching strategy, it combines a clear positioning for sustainable action with a structured framework for the many necessary activities of the entire AOR FMoD. It provides an overview of the **Background** (Chapter 2), such as definitions and framework conditions, as well as the **Methodology** for the development (Chapter 3), i.e. the function and structure of the Strategy. With the **Sustainability Policy** (Chapter 4), the Strategy defines the long-term alignment of the AOR FMoD in the field of sustainability and describes in detail the division into nine **Fields of Action** (Chapter 5) with their respective activities in 50 individual segments. In addition, the Strategy describes the various elements of coordination and management of the decentralised **Implementation** of the various activities (Chapter 6) and provides an overview of the **Next Steps** regarding the planned activities in the AOR FMoD (Chapter 7).

In the transformation process towards a sustainable and climate-neutral Bundeswehr, all the bodies in the AOR FMoD are required to launch and implement measures to achieve the objectives at the operational level.⁷

It is of particular importance to promote the principle of sustainable action and climate awareness among all members of the AOR FMoD and thus to strengthen a permanently sustainable, operational and efficient Bundeswehr. The Sustainability and Climate Action Strategy forms a framework and a connecting point for both.

6 Cf. Chapter 5.1 et seq.

7 Cf. Chapter 6.1 on the decentralised approach to implementation.

2. Background

2.1 Definitions

This chapter defines the basic terminology. In addition, the organisational elements in the AOR FMoD are presented according to the areas of application used in the statutory provisions.

Basic Understanding of the Principle of Sustainability

Sustainability is a principle of action that takes into account economy, ecology and social issues. Only if these three dimensions of sustainability are in balance the resulting development can benefit everyone, including further generations.⁸

Sustainability is the basis for satisfying basic human needs – not only today, but also in future. Striving for sustainability is an ongoing process and is called sustainable development.

Sustainable development with the aim of preserving the natural resources for future generations can only take place in a secure environment.⁹ Without peace and justice, there is no sustainable development. Peace is, for good reason, one of the five pillars of the 2030 United Nations Agenda. Where there is war and violence and where no constitutional institutions are in place sustainable development cannot exist¹⁰. For this reason, peace and security are prerequisites for active sustainability.

Structure of the AOR FMoD Organisational Elements

Provisions¹¹ on sustainability refer to different parts of the AOR FMoD, either to the AOR FMoD or to the Federal Administration. Figure 1 shows a schematic representation of the organisational elements in the AOR FMoD and their designations used in the national provisions for a better understanding¹².

Climate action (mitigation) is an essential part of sustainability and refers to measures helping to mitigate anthropogenic warming, i.e. global warming caused by human beings¹³. The main objective of these measures is to reduce the emission of carbon dioxide and other greenhouse gases (e.g. methane or nitrous oxide)¹⁴. The present overarching Strategy focuses on the implementation of provisions for sustainable development and for climate action in particular.

The climate action provisions¹⁵ must be distinguished from measures taken to ensure climate security¹⁶ and the adaptations to climate change, which do not form part of this Strategy.

⁸ Cf. United Nations Association of Germany, 2022.

⁹ Cf. 2021 Germany's Sustainable Development Strategy 2021 on SDG 16 „Peace, Justice and Strong Institutions“: 341.

¹⁰ Cf. 2021 Germany's Sustainable Development Strategy: 341.

¹¹ There are numerous laws, strategies and programmes for the AOR FMoD, hereinafter referred to as the „provisions“, which govern measures and actions regarding sustainability and climate action. They form the framework for the Sustainability and Climate Action Strategy and are the starting point for current and future tasks and activities of the AOR FMoD in the field of sustainable development.

¹² Cf. Federal Ministry of Defence, 2022a.

¹³ Cf. United Nations, 2021.

¹⁴ Cf. Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection, 2021.

¹⁵ Cf. SDG 13 and corresponding statements in Germany's Sustainable Development Strategy, 2021: 305 et seqq.

¹⁶ Cf. Foreign Office, 2022.

Area of responsibility of the Federal Ministry of Defence

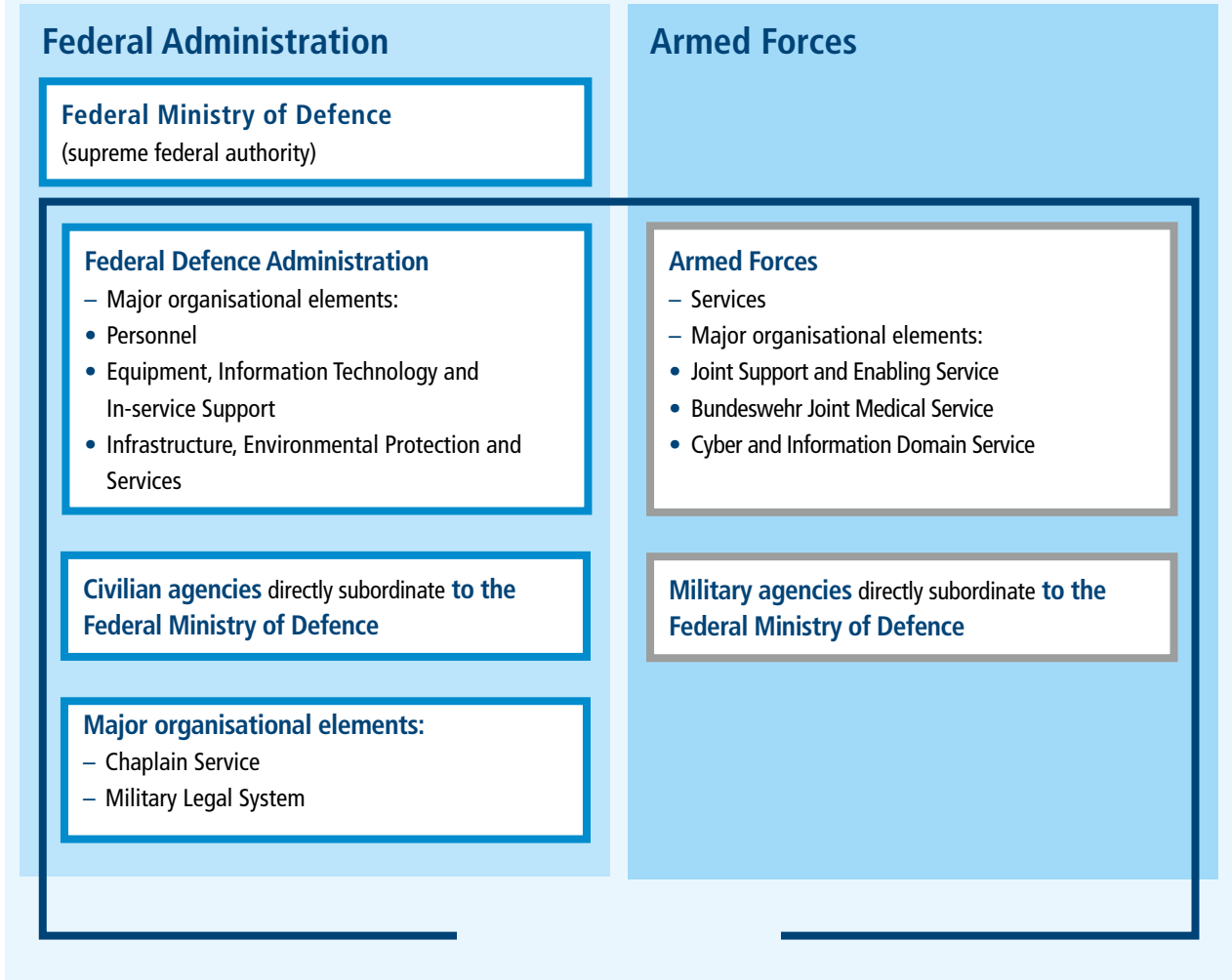


Figure 1: Organisational structure

2.2 External Provisions

In the field of sustainability, the AOR FMoD must comply with numerous external provisions. A total of about 190 legal, strategic and programmatic provisions concerning sustainability were identified, including binding international agreements as well as national provisions and laws. These include, in particular, the United Nations 2030 Agenda, Germany's Sustainable Development Strategy, the Federal Climate Change Act, and the Federal Government's Programme of Sustainability Measures.

The **United Nations 2030 Agenda** is an action plan that identifies the following five areas: People, Planet, Prosperity, Peace and Partnership¹⁷. These core areas form the basis for the 17 Sustainable Development Goals (see Figure 2) agreed at the United Nations World Summit on Sustainable Development in New York in 2015¹⁸. The 2030 Agenda commits all social and thus state actors to contribute to its implementation¹⁹.

Germany's Sustainable Development Strategy, which was last amended in March 2021 and adopted by the Federal Cabinet, is translating the targets and goals of the United Nations 2030 Agenda into a national strategy²⁰. It contains 17 priorities and associated measures. The AOR FMoD contributes to the implementation of Germany's Sustainable Development Strategy, which was confirmed on 30 November 2022 through the policy decision of the Federal Cabinet.

The amended **Federal Climate Change Act** entered into force in August 2021²¹. According to the Federal Climate Change Act, the Federal Administration (see Figure 1) is obliged to function in²² a climate-neutral way by 2030. By 2045, the entire Federal Republic of Germany is to become greenhouse gas neutral²³. This includes the Bundeswehr. Therefore, the Bundeswehr must undergo a comprehensive transformation process by 2045 with the aim of becoming a climate-neutral army.

In 2021, the **Federal Government's Programme of Sustainability Measures** (Programme of Sustainability Measures) with the title „Implementing Sustainability in Administration Work Flows“ was extensively amended by the Federal Government and adopted by the Federal Cabinet. Unless otherwise specified in the individual measures, the Programme of Sustainability Measures must be implemented by all authorities and facilities directly and indirectly belonging to the Federal Administration²⁴. Where this obligation restricts the mission accomplishment of the Armed Forces, the Federal Ministry of Defence may issue exemptions on the basis of specific requirements regarding the security and operational readiness of the Bundeswehr.²⁵

The implementation is subject to annual inter-ministerial monitoring. The Programme of Sustainability Measures contains approximately 200 specific objectives and measures, 130 of which directly affect the authorities and agencies of the Federal Administration in the AOR FMoD.

17 United Nations General Assembly on 18 September 2015: Outcome document of the United Nations Summit for the adoption of the Post-2015 Development Agenda.

18 Cf. United Nations.

19 Cf. United Nations, 2022.

20 Cf. Federal Government, 2021.

21 Cf. Press and Information Office of the Federal Government, 2022.

22 Cf. Federal Climate Change Act, 2021, Section 15

23 Cf. Federal Climate Change Act, 2021, Section 3.

24 Cf. 2021 Federal Government's Programme of Sustainability Measures: 1.

25 Cf. 2021 Federal Government's Programme of Sustainability Measures: 1 et seq.

SUSTAINABLE DEVELOPMENT GOALS



Figure 2: 17 Sustainable Development Goals; Source: United Nations, 2022.

Sustainable fiscal policy is the central prerequisite for sustainable development and an essential element of intergenerational justice. The following applies to the funding of the Programme of Sustainability Measures:

„The Programme must be integrated into the financial policy framework, i.e. the funding regarding expenditure and revenue must be carried out within the framework of the current financial planning. It is therefore subject to the availability of the necessary budget funds and existing posts and positions.

In addition, the budgetary principles of economic efficiency and economy of administrative action must be observed (Section 7 of the Federal Budget Code). This applies to new measures and to the expansion of existing programmes, facilities and other measures.“²⁶

²⁶ Cf. 2021 Management Concept for Sustainability: 26.

2.3 Sustainability and Climate Action in the AOR FMoD

The following sections provide an overview of what has already been achieved in the context of sustainability and climate action and of the challenges and opportunities associated with the implementation of measures to achieve the objectives.

For many years, the AOR FMoD has been making a substantial contribution to climate action, nature conservation and other aspects of sustainable development. From 1990 to 2019, for example, the greenhouse gas emissions of Bundeswehr facilities were reduced by around 80 percent. In 2015, an environmental management system based on the European Eco-Management and Audit Scheme (EMAS) was introduced and in this context, environmental objectives are defined. In addition to climate action, the AOR FMoD also makes an important contribution to the preservation of biological diversity, since many endangered species and habitats benefit from the nature protection management of the sites used by the Bundeswehr.

Sustainable development in the AOR FMoD is based, among other things, on the Programme of Sustainability Measures²⁷. In the field of mobility, for example, the proportion of vehicles with electric or hybrid propulsion is increased. Sustainability criteria are taken into account in the procurement of goods and services.

In addition to ecological and economic aspects, the sustainable development of the AOR FMoD also includes social aspects. For this reason, the AOR FMoD has been successfully implementing numerous measures fostering work-life balance, health and the qualification of its members for many years. In this context, gender equality and equal opportunities are important factors for the personnel management of a modern and attractive employer.

For the AOR FMoD, ensuring peace and security is the most important contribution to sustainable development. On the basis of its core mission, the Bundeswehr increases this development through national and collective defence, international crisis management, homeland security, national crisis and risk prevention, subsidiary support in Germany and humanitarian assistance and disaster relief abroad, among other things. To this end, this Strategy continues, structures and extends the efforts already made and defines sustainability measures and exemplary measures within the nine fields of action²⁸.

²⁷ Cf. Chapter 2.2.

²⁸ Cf. Chapter 3.

Opportunities and Potentials for the AOR FMoD

In a tense security situation, the AOR FMoD in particular, faces the challenge to bring the requirements of sustainability in line with the fulfilment of the Bundeswehr mission. As a matter of principle, sustainability and security are not mutually exclusive, but mutually dependent, which also brings opportunities and potentials for the AOR FMoD, such as those listed below:

- The strategic consideration of sustainability and climate action will strengthen the operational readiness of the Bundeswehr and ensure its operations and it will help to exploit potentials for the AOR FMoD. For example, the use of climate-neutral synthetic fuels can contribute to the climate neutrality of the Armed Forces and, at the same time, counteract the foreseeable shortage of fossil liquid fuels.
- Climate-friendly renewable electricity generated by photovoltaic systems for routine and Bundeswehr operations increases self-sufficiency and resilience and minimises supply risks.
- Meetings conducted as video conferences and the use of electronic means of communication instead of unnecessary duty trips save time and money and foster climate action at the same time.
- Landscape conservation measures in training areas through targeted terrain management that take into account both, exercises and nature, not only create a wide range of long-term usable exercise areas, but also a variety of high-quality natural habitats in which rare species find refuge.

- The expansion of teleworking and location-independent working cuts down the commuting routes of the staff and thus reduces traffic and saves time through a better work-life balance.
- Sustainability and climate action promote the reputation of the Ministry and increase its attractiveness as an employer.

Challenges

The implementation of the Sustainable Development Goals also poses challenges because not all goals can be promoted simultaneously and to the same extent. Factors like economic efficiency and economy, for example, are influenced by official requirements, welfare and work-life balance and, in particular, by the requirements to ensure mission-ready forces and Bundeswehr operations. Another major challenge arises from limited financial, material, time and personnel resources, which requires optimal resource management to achieve the maximum possible effect.

3. Methodology

The Sustainability and Climate Action Strategy for the AOR FMoD is an overarching strategy. With its comprehensive approach, the Strategy contains a sustainability policy and sustainability targets and provides a structure for the subject matter in terms of both technical and organisational aspects as well as a framework for the decentralised implementation of measures to achieve the objectives in the AOR FMoD. The detailed decentralised planning and implementation of

measures by the bodies of the AOR FMoD for achieving the requirements and implementation objectives are not part of the overarching Strategy.

The methodological structure of the Sustainability and Climate Action Strategy consists of three levels, with every level determining the one below it. The overarching Strategy comprises the sustainability policy, the fields of action and the segments containing sustainability targets (Figure 3).

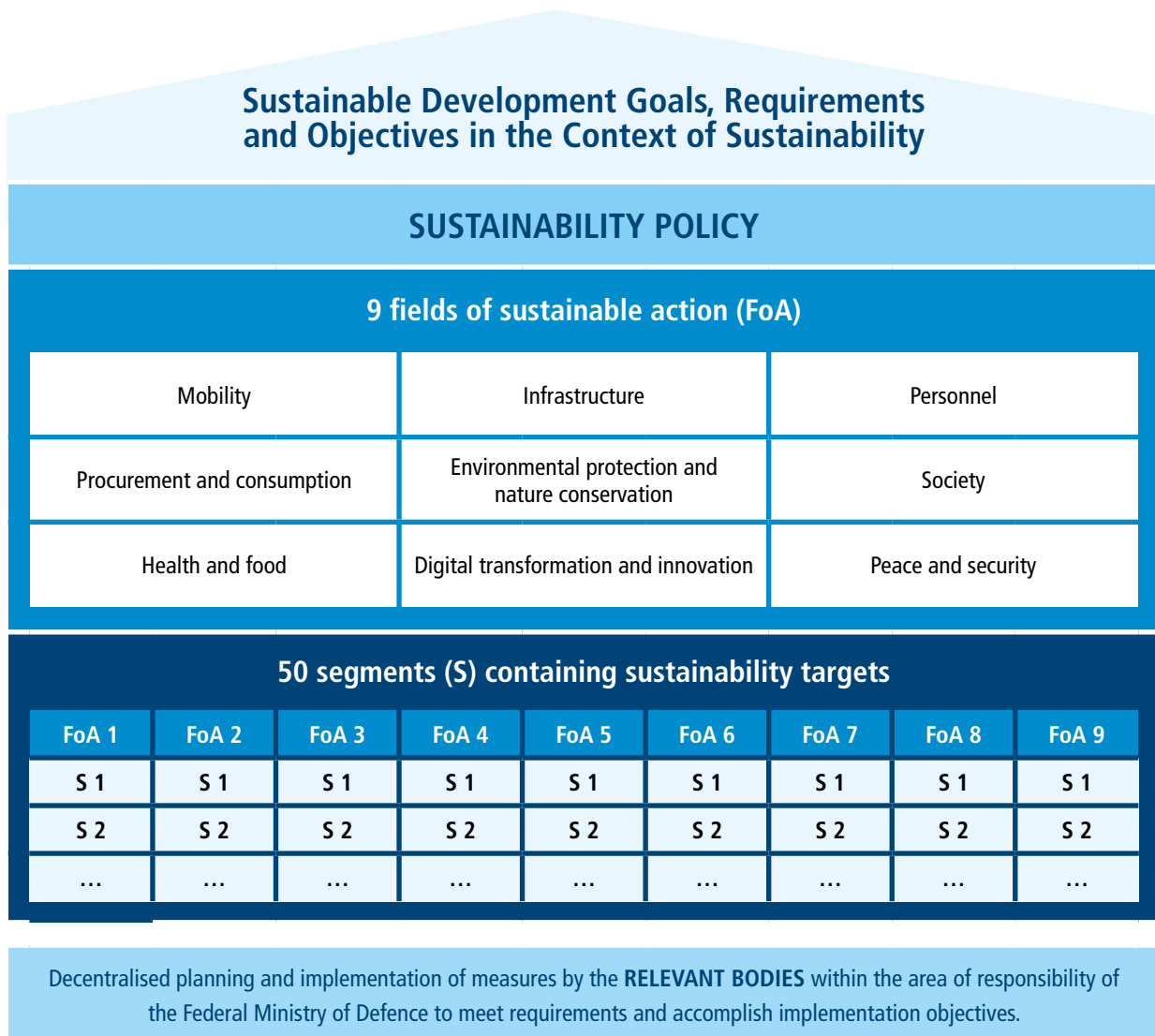


Figure 3: Schematic structure of the Sustainability and Climate Action Strategy



- Fields of action which directly contribute to climate action
- Fields of action which indirectly contribute to climate action

Figure 4: Sustainability fields of action (FoA)

The external **provisions**²⁹ provide the framework for the Strategy and thus for all current and future tasks and activities of the AOR FMoD in the field of sustainability. Of particular importance here are the United Nations' 17 Sustainable Development Goals, Germany's Sustainable Development Strategy, the Federal Climate Change Act and the Programme of Sustainability Measures. They formulate very specific implementation objectives and measures in various areas (e.g. mobility, procurement, health) that are implemented within the AOR FMoD's bodies.

To present a clear position on sustainability, the Federal Ministry of Defence has developed the **sustainability policy**. The policy defines the task, the vision and the mission of the AOR FMoD in the context of sustainability. The policy fulfils two important functions: First, it is an essential basis for the implementation of the Sustainability and Climate Action Strategy and the technical work. Based on the core mission, the policy describes the long-term orientation of the AOR FMoD in the area of sustainability, from which all major strategic considerations, activities and measures derive. Second, the policy serves as an orientation for all members of the AOR FMoD by formulating the self-image and the basic principles of sustainable action.

²⁹ Cf. Chapter 2.2. as well as Chapter 5 with the external provisions in the individual segments.

The nine fields of action are the basic structural elements of the Sustainability and Climate Action Strategy (Figure 4). They were identified through the evaluation of the external provisions for sustainability. The fields of action cover all relevant subject areas in the AOR FMoD and are divided into 50 clear-cut segments in which overarching objectives and exemplary measures are summarised. The individual fields of action have a different significance for climate action. Six fields of action pursue both sustainable development and climate action objectives and thus make a direct contribution to climate action, namely Mobility, Procurement and Consumption, Infrastructure, Environmental Protection and Nature Conservation, Health and Food, and Digital Transformation and Innovation. Three fields of action (Peace and Security, Personnel and Society) mainly refer to the implementation of sustainability objectives and thus only make an indirect contribution to climate action.

In order to structure the large number of requirements and implementation objectives in the fields of action, each field is divided into **segments**. For example, the Field of Action "Infrastructure" is divided into the following six segments:

- Planning, constructing, operating (domestic),
- Infrastructure planning process,
- Energy supply,
- Planning, constructing, operating (abroad, on operations),
- Digitalisation of planning, constructing and operating and
- Drinking water and wastewater management.

Each segment summarises specific requirements and objectives from which measures and implementation activities for the operational level are derived. The fields of action are divided into segments to give a detailed structure and to reduce the organisational and procedural effort, since the responsible and involved bodies can cooperate more easily, more precisely and more effectively during the implementation³⁰. A total of 50 segments were derived from the sustainability fields of action without overlapping.

For each segment one **sustainability target** was developed. It summarises individual implementation objectives in the segment and thus represents the overall strategic objective of a segment. It formulates a target state and offers programmatic orientation for the operational implementation. The fields of action and segments as well as the sustainability targets reflect the AOR FMoD's need for action in the area of sustainability and they are described in detail in Chapter 5.

³⁰ Cf. Chapter 6.1.

4. Sustainability Policy

The sustainability policy describes the fundamental orientation of the AOR FMoD in the field of sustainability on the basis of the task, the vision and the mission of the Bundeswehr.

The mission and tasks of the Bundeswehr can be derived directly from Articles 87a and 87b of the Basic Law of the Federal Republic of Germany. In accordance with Article 87a, the Federal Government shall provide armed forces for defence. Article 87b states that the Federal Defence Administration is a federal administrative authority with its own administrative substructure. It has jurisdiction for personnel matters and direct responsibility for the satisfaction of the procurement needs of the Armed Forces. The key elements, objectives and framework conditions of German security policy, the situation of the Bundeswehr and the future of the Armed Forces are described in White Papers. On 13 July 2016, the Federal Government adopted the 2016 White Paper on Security Policy and the Future of the Bundeswehr, which, among other things, underlines the inseparable connection between peace and security and sustainable development.

The Bundeswehr defends Germany's sovereignty and territory, honours Germany's Alliance commitments and protects German citizens. It also helps to maintain the resilience of state and society against external threats and to secure the ability to act in matters of security policy.³¹ This provides a significant contribution to peace and security.³²

³¹ Cf. Federal Government, 2016.

³² Cf. 2021 Germany's Sustainable Development Strategy: 341 et seqq.

Striving for sustainability is an ongoing process. Sustainable development which aims at preserving the natural resources for future generations can only happen in a safe and secure environment. By fulfilling its tasks, the Bundeswehr makes a major contribution to peace and security (SDG 16) and thus to sustainable development³³. Our vision is to actively promote sustainable development both by and while performing our tasks.

– What Is Our Ambition?

The Bundeswehr contributes significantly to sustainable development by performing its tasks. In our day to day business, we actively promote sustainable development which is a guiding principle of all our actions.

We provide sustainable peace and security.

The mission of sustainable action in the Bundeswehr describes the way in which we intend to achieve sustainability when performing our tasks in the AOR FMoD. In our daily work the three dimensions of sustainability³⁴ are to be given equal consideration.

When performing our tasks, we aim to minimise the burden on the environment and the consumption of resources, use the available funds effectively and efficiently and take due account of the needs of our personnel.

³³ Cf. Chapter 2.1 and Chapter 2.3.

³⁴ Cf. Chapter 2.1.

5. Fields of Action

5.1 Mobility

Introduction and Provisions

The AOR FMoD has specific mobility requirements derived from the defence mission. These include vehicles for civilian use, such as commercial vehicles for domestic duty trips, and vehicles for military use, like combat tanks, combat aircraft and warships. While no specific requirements are imposed on the former so that all future technologies of the civilian market can be used, the latter are subject to special force-specific requirements.

In order to achieve the climate action goals³⁵ contained in the provisions, the AOR FMoD intends to make its mobility as environmentally friendly and climate-neutral as possible while ensuring the military mission and contributing to the mitigation of climate change and its effects (SDG 13). To this end, the AOR FMoD focuses its sustainability efforts in the field of action "Mobility" on various objectives and measures in a total of eight segments (Figure 5).

In the further development of military-specific mobility, the AOR FMoD will closely observe the adaptation of non-fossil propulsion technologies and the usability of sustainable fuels. In the field of commercial vehicles, innovative climate-friendly mobility solutions and services, such as the promoted transition to electromobility and the expansion of a comprehensive charging infrastructure, pave the way towards a climate-neutral modern Federal Administration and Bundeswehr.

In addition, the attractiveness of alternative mobility services, such as local public transport or bicycle, will be increased. Necessary duty trips must be carried out in a climate-friendly manner, if possible. Future-oriented mobility management will make the traffic of the AOR FMoD more environmentally and socially compatible and more efficient, and will also increase sustainable mobility behaviour and the climate awareness of the members of the AOR FMoD.

Facts and Figures

- The total number AOR FMoD vehicles is approximately 39,000.
- The Bundeswehr's mobility service provider, BwFuhrparkService GmbH, currently provides around 36,000 vehicles, of which approximately 21,000 are commercial vehicles. The remaining vehicles are either special vehicles or commercial vehicles adapted for use in the Bundeswehr with special military equipment.
- At the end of 2021, the Bundeswehr had a stock of approximately 600 electric vehicles. In future, the share of electric mobility within the commercial fleet of the Bundeswehr will be gradually increased.
- The Bundeswehr has more than 160,000 vehicle parking spaces at its facilities.
- The AOR FMoD personnel travel approximately 1.68 million flight kilometres and approximately 1.25 million railway kilometres on approximately 600,000 duty trips per year.³⁶
- The share of the Bundeswehr's annual mobility-related greenhouse gas emissions in national greenhouse gas emissions from air, road and rail traffic and coastal/inland shipping amounts to approximately 0.5 percent.

³⁵ Cf. Chapter 2.2.

³⁶ Survey conducted by the Federal Office of Bundeswehr Infrastructure, Environmental Protection and Services, Competence Centre for Travel Management in May 2022.

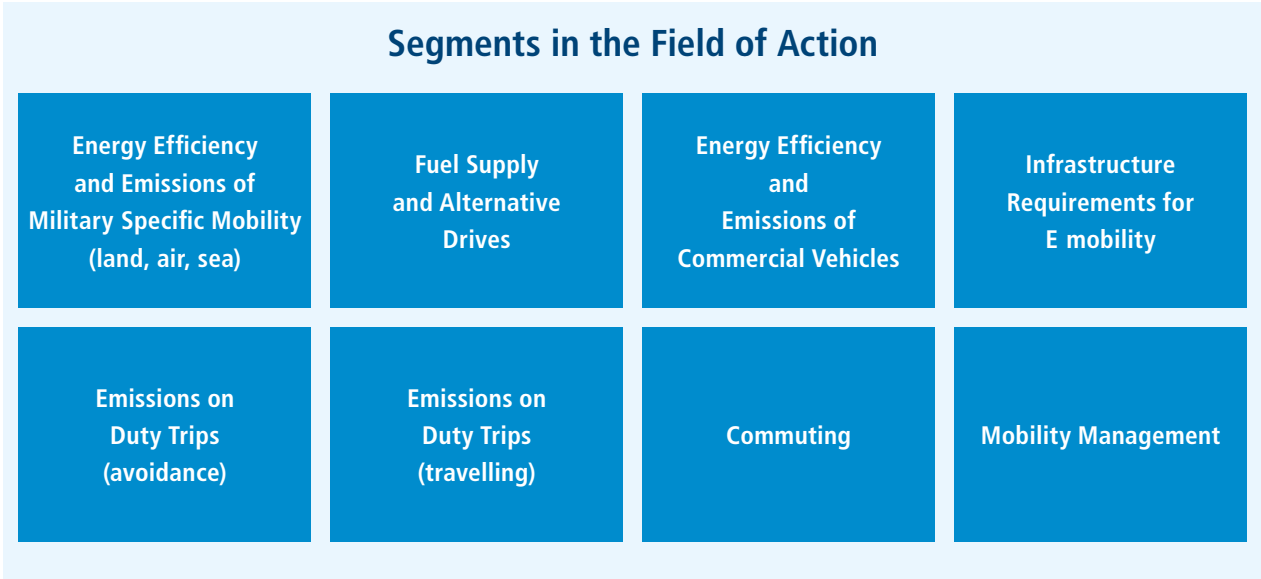


Figure 5: Overview of the segments in the field of action "Mobility"

Ziele und Maßnahmen pro Segment

Energy Efficiency and Emissions of Military-Specific Mobility (Land, Air, Sea)

„Specific fuel consumption and emissions (pollutants, noise) are being reduced.“

Military-specific mobility includes a wide range of systems (such as aircraft, helicopters, ships, boats, wheeled and tracked vehicles). For these systems, already today the compliance with international environmental protection regulations is an important objective within the scope of our voluntary commitment. Examples of this are the International Convention for the Prevention of Pollution by Ships or the release conditions for the use of climate-neutral synthetic fuels for various aircraft types. In addition, research projects geared to military operations also serve to continuously extend the use of sustainable

fuels for military systems across all dimensions and thus to further reduce emissions. The intensive use of simulators instead of real systems does not only save costs but also makes a significant contribution to preventing emissions and saving energy. By improving the efficiency of the propulsion of military systems energy can also be saved and emissions reduced. It is, however, important to emphasise that military mobility requires powerful, sustainable and resilient propulsion systems to meet the requirements placed on them.



Figure 6: Leopard 2A7V battle tank from 393 Tank Battalion; Source: Bundeswehr/Marc Dorow



Figure 7: Refueling Sea Lynx shipboard helicopter Mk88A; Source: Bundeswehr/Marc Dorow

Fuel Supply and Alternative Drives

„As part of the development, procurement and use of mobile systems for military operations, solutions with propulsion technologies based on non-fossil fuels are always considered.“

In order to maintain the necessary capabilities of the Armed Forces, high power densities of the propulsion systems and robust logistics of energy sources with high energy densities are essential in the field of military-specific mobility. Under these conditions, climate neutrality can only be achieved by using climate-neutral synthetic fuels. They must also meet high quality requirements and be available to the required extent. To guarantee successful supply of sustainable synthetic fuels, there must be appropriate production capacities and the associated distribution structures. The products

available on the market must be compatible with the systems already introduced and with future systems. In addition, the usability of synthetic fuels for military systems will be ensured through relevant releases issued by the system manufacturers. With a view to the construction of future naval units, alternative energy supply concepts already used in civilian vessels will have to be considered in the medium and in the long term.

Energy Efficiency and Emissions of Commercial Vehicles

„Greenhouse gas emissions in commercial vehicles are reduced by using low-emission and zero-emission vehicles with alternative propulsion technologies.“

With the aim of reducing greenhouse gas emissions caused by commercial road vehicles, all authorities will in future comply with the Clean Road Vehicles Procurement Act. When procuring commercial service vehicles, the AOR FMoD is implementing this Act. The rate of low- and zero-emission service vehicles will be increased based on the applicable provisions. At the end of 2021, the Bundeswehr already had a fleet of approximately 600 commercial electric vehicles.

The increased use of electric vehicles, however, also requires an improved charging infrastructure (see segment „Infrastructure Requirements for

e-Mobility“). The growing technological development, especially with regard to the increasing driving ranges of battery-electric vehicles, makes it possible to replace conventional road vehicles in more and more areas by emission-free or at least low-emission variants.



Figure 8: Electric vehicle at a charging station in a Bundeswehr barracks; Source: BwFuhrparkService GmbH

Infrastructure Requirements for e-Mobility

„Starting from the 200 charging points already built, a comprehensive and powerful infrastructure will be available for charging electric vehicles at Bundeswehr facilities in 2045.“

The AOR FMoD is obliged to reduce greenhouse gas emissions of its commercial vehicle fleet to zero. If, in a first step, vehicles with climate-friendly propulsion technologies are procured, the logistic support and the necessary infrastructure for the energy supply must be adapted. In the case of the fleet's battery-electric component, a demand-oriented, comprehensive, modern and user-friendly e-charging infrastructure will be provided at all Bundeswehr facilities. The expansion of the charging infrastructure and the supply of electric vehicles must be closely coordinated. In addition to the charging requirements of facility-assigned vehicles, local charging requirements form the basis for site-related infrastructure planning. More than 300 charging points (min. 11 kW) and 750 specially secured power sockets, which can also be used as charging points, are already installed. Another 3,000 charging stations are currently in the planning phase. By 2030, around 18,000 additional charging points will be made available in Bundeswehr facilities. For comparison: In the third quarter of 2022, the number of charging stations in Germany was approximately 28,900. At the same time, the need for an increased charging infrastructure based on the Clear Road Vehicles Procurement Act, the Programme of Sustainability Measures, the Charging Infrastructure Master Plan II³⁷ of the Federal Government and the Building Electromobility Infrastructure Act will be updated in existing regulations. In accordance with the Building Electromobility Infrastructure Act, one in five of the more than 160,000 vehicle park-

ing spaces of the Bundeswehr will be equipped with charging stations, which can also be used by private vehicles against payment. By 2045, more than 30,000 charging stations must be installed to meet this objective. In the years to come, the charging infrastructure will be considered for the vehicle fleet and will also play a role when parking spaces are renovated and constructed.

The introduction of a smart charging station technology will facilitate the disposition of electric vehicles, remove user barriers and thus allow more flexible use of electric vehicles in the sense of a pooling approach. With a continuous and complete technical solution for the charging infrastructure (charging stations, software, consumption recording and a uniform accounting and payment system), the charging of service vehicles at national sites can be ensured and, within the limits of available capacities, made possible for private users against payment. Ideally, the construction of the charging infrastructure is to be harmonised with all ministries so that in future it will be possible to conduct charging for federal personnel across all federal ministries.

³⁷ The Charging Infrastructure Master Plan contains measures for the rapid establishment of a nationwide and user-friendly charging infrastructure for up to ten million electric vehicles by 2030.

Emissions on Duty Trips (Avoidance)

„By avoiding duty trips, greenhouse gas emissions have been effectively reduced.“

In addition to necessary low-emission duty trips, the intention is to authorise more remote business meetings to avoid greenhouse gas emissions. When requesting and directing/authorising necessary duty trips, an electronic system has already been established to evaluate whether the duty trip can be avoided by using alternative digital communication formats. To this end, the AOR FMoD plans to further expand the technical possibilities for conducting virtual meetings, since they are an essential prerequisite for climate-conscious official action, also in the field of mobility. The AOR FMoD members are made aware of sustainable and climate-friendly action when conducting business by means of

information offers and service-related targets. In this context, it is important to achieve a balance between relevant information, promoting individual responsibility and regulations. The role model function of the Federal Government for achieving climate neutrality must be given even greater priority.



Figure 9: A sign with the inscription VTC room is attached to a door in the Federal Ministry of Defence in Berlin; Source: Bundeswehr/Jörg Volland



Figure 10: TDY travellers; Source: Bundeswehr/Flickr

Emissions on Duty Trips (Travelling)

„Using environmentally friendly means of transport for temporary duty trips effectively reduces greenhouse gas emissions.“

The aim is to significantly reduce emissions on duty trips. Trains are to be used as the primary climate-friendly means of travel and domestic flights must be avoided wherever possible. For local travelling, costs for e-scooters/ rental bikes can already be invoiced as travel expenses. In this context, the interests of the members of the AOR FMoD who already have large commuting distances to accomplish must be adequately taken into account. In order to ensure transparency for the evaluation of greenhouse gas emissions generated during duty trips and to develop climate awareness and support decision-making processes, it is important to demonstrate the emission rate during the travel request, order and booking process. As part of ministerial

negotiations on the law on travel expenses, the Federal Ministry of Defence intends to raise standards to achieve a uniform and increased environmental compatibility and sustainability in the Federal Administration. This will strengthen the security of action when carrying out sustainable duty trips.



Figure 11: Bundeswehr University Munich; Source: Bundeswehr/Stephan Ink

Commuting (Job Ticket/Apprentice Ticket/Public Transport/Tax-Free Employer Subsidy for Public Transport)

„Alternative and sustainable commuting options for the AOR FMoD members are provided, organised and established.“

Today's long commuting distances, for which employers often use their own vehicles, consume a considerable amount of resources, e.g. fossil energy sources. By offering and fostering resource-saving alternatives for adapting commuting ways, greenhouse gas emissions will be reduced. As a socially and environmentally conscious employer, the AOR FMoD already offers various public transport options for commuting between the place of residence and the workplace or training centre. This includes contracts with traffic associations throughout Germany for low-cost job tickets and/or apprentice tickets that can also be used after work. By granting a tax-free employer subsidy (the aim is to achieve a full subsidy) the Federal

Government intends to become a role model. Another positive incentive is thus created for the purchase of a job ticket or a trainee ticket. The aim must be to ensure that a large number of AOR FMoD members and/or trainees benefit from the offer in the medium to long term.

Mobility Management

„The introduction of a mobility management system in the Federal Ministry of Defence will contribute to achieving a climate-neutral Federal Administration by 2030.“

Mobility management is an instrument for influencing the demand for transport in private passenger transport, i.e. all traffic flows originating from the place of work. In this context, the motivation of its members to use environmentally friendly means of transport poses a particular challenge for the Bundeswehr, since it can exert only limited influence on their choice of transport modes. By establishing a future-oriented mobility management system, the aim is to make transport more environmentally and socially compatible, more efficient and safer.

Measures in the fields of information, communication, motivation, coordination, service offers and also infrastructure facilities will be seized to promote the use of environmentally friendly means of transport. As early as May 2021, the Federal Ministry of Defence agreed to establish a mobility management system, starting 2022 in the Federal Ministry of Defence and, in the long term, including the whole AOR FMoD. Through the intranet, the members of the Federal Ministry of Defence are provided with information, offers, programmes and many other options for

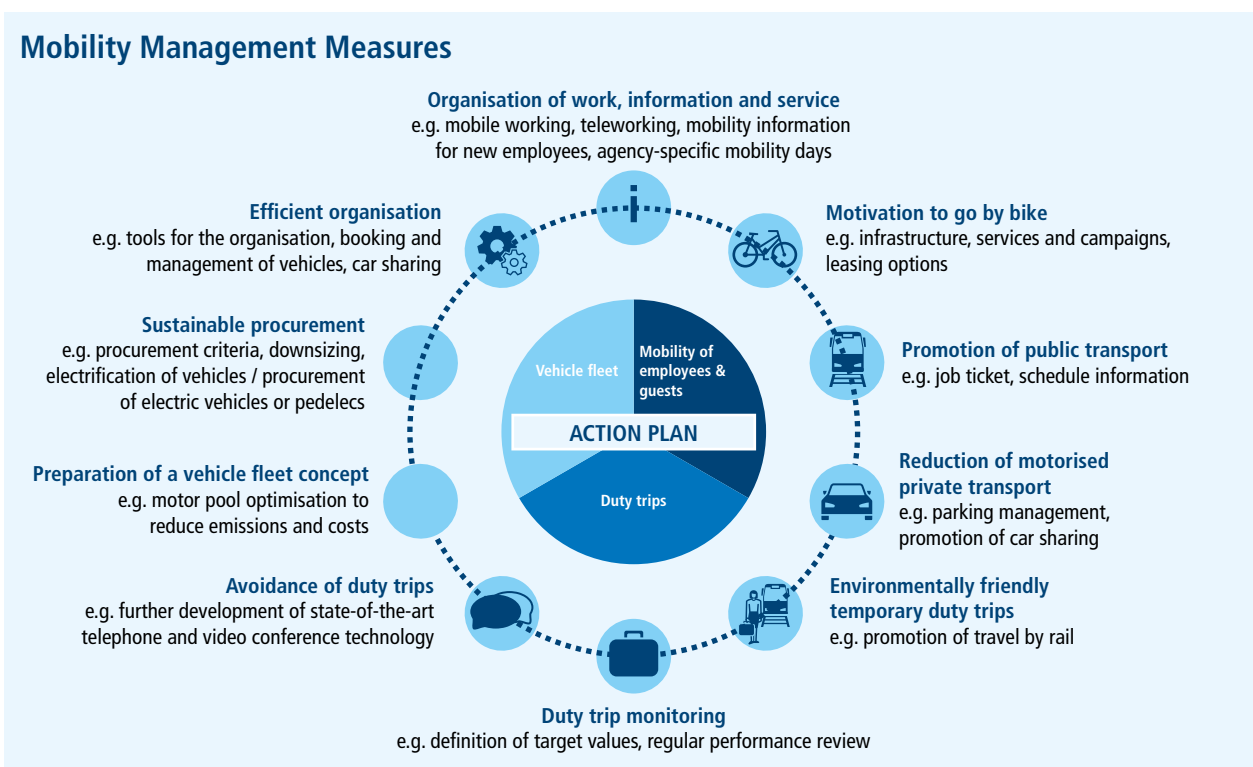


Figure 12: Mobility Management at the Federal Ministry of Defence; Source: Federal Environment Agency (amended)

sustainable mobility management. One offer is, for example, the possibility of participating in the annual programme „Commuting by Bike“³⁸. Digitalisation instruments that have proven their worth during the COVID pandemic will be expanded and consolidated.

As part of the establishment of the mobility management system, the Federal Ministry of Defence conducts a survey among its members until the end of 2023 and among AOR FMoD members until the end of 2024. The survey examines the current mobility choices as well as possible adaptations and requirements to motivate the personnel to change these choices. The resulting improvement measures are intended to provide an incentive to make their mobility behaviour as environmentally friendly as possible and at the same time to strengthen climate awareness.

Military-Specific Add-On Research in the Field of Action “Mobility”

The research and testing of new sustainable technologies, usually by taking up and, if necessary, by enhancing developments from the civilian sector, is essential for the AOR FMoD in order to make its military-specific mobility as climate-neutral as possible and to fulfil its tasks.

Studies are conducted to test energy generation and storage concepts tailored to military requirements that link the power, heat and mobility sectors. Based on a theoretical analysis of suitable technologies already conducted, they are now to be combined and tested in a real test run.

³⁸ The „Commuting by Bike“ action programme is a nationwide summer campaign initiated by the German Bicycle Club (ADFC) and the AOK health insurance company to foster fitness in everyday life. For all registered participants, there is a ranking within the Federal Administration.

One of the leading questions is how to effectively store electrical energy from renewable sources to compensate for fluctuations in production. Battery banks serve as a short-term storage option for daily use. The conversion of electrical power into chemical energy sources (in particular synthetic methane or synthetic fuels) will ensure stable long-term storage over months and allows for the connection to infrastructure (heat generation) and mobility (use in military propulsion systems).

The AOR FMoD not only conducts its own studies, but continuously extends and strengthens its knowledge in the field of new energy supply technologies. An example of this are the semi-annual expert groups on the future of mobile and stationary energy supply. The AOR FMoD regularly organises scientific symposia to learn about current developments and trends in the field of sustainable energy supply and propulsion technologies at an early stage and to assess their potential for military use. The continuous exchange of information with experts and partners from science and research ensures that current sustainability and climate action developments in the field of mobility are taken into account and that new potentials are opened up for the AOR FMoD.

Challenges and Success Factors

Making mobility environmentally friendly and climate-neutral is a long-term project that also poses major challenges to the Bundeswehr.

In the field of military-specific mobility, the expansion of climate-friendly, sustainable solutions is in strong competition with the required military capabilities, which are becoming more extensive due to the significantly increased importance of national and collective defence and which must be guaranteed by all means. When procuring and using military systems, sustainability aspects can only be taken into consideration if they do not conflict with mission-related requirements, if they ensure at least equivalent mission accomplishment and if they do not restrict the capability profile of the

Armed Forces. Requirements and framework conditions are therefore not only derived from a national ambition, but above all from an overarching international Alliance capability, such as the NATO Single Fuel Policy. These requirements must be considered already when requesting and planning mobility solutions in the military sector. In this context, however, the availability of sustainable solutions (e.g. synthetic fuels) is of strategic importance for the Armed Forces in light of the energy transition.

In the field of commercial vehicles, sustainable solutions and offers, such as the promotion of e-mobility and the charging infrastructure, will not only require a considerable amount of funding but they will also increase the demand for electrical energy and will therefore depend to a large extent on future energy infrastructure measures. In future, the AOR FMoD will require extra gigawatt hours at a double-digit rate to provide the electricity amount needed for e-mobility.

Essential factors in this regard are the upgrading of Bundeswehr power networks, the organisational and technical harmonisation of volatile energy generation and consumption as well as the general transition of the facilities to renewable energies combined with a certain level of autonomous power supply.

In addition to these challenges and factors, it is also vital to create awareness among AOR FMoD members of sustainable, climate-neutral and future-oriented mobility. The promotion of climate awareness and sustainable mobility behaviour in the AOR FMoD as a constant guideline for their actions as employees is essential for the successful implementation of the ambitious projects in the field of action "Mobility". The acceptance of climate action measure largely depends on sufficient consideration of military requirements.

Sustainability targets discussed in this chapter



5.2 Infrastructure

Introduction and Provisions

The Bundeswehr has more than 33,000 buildings (of which approximately 15,100 are heated/cooled) and a managed area of more than 263,000 hectares throughout Germany. From 1990 to 2019, the greenhouse gas emissions of the Bundeswehr's facility operations (electricity/heat) have dropped by more than 80 percent, partly due to continuous energy-efficient renovation of the buildings and the technical installations, but also by reducing the number of Bundeswehr facilities and posts. In the building sector, much has already been achieved for climate action in the past 30 years. Nevertheless, there is further potential for saving greenhouse gas emissions in the area of infrastructure. Based on the assumption that mission accomplishment is ensured, the field of action "Infrastructure" is therefore of special importance for the Federal Ministry of Defence in terms of sustainability, especially regarding energy efficiency, energy supply and the reduction of greenhouse gas emissions.

A high level of infrastructure needs must be met in the AOR FMOd. This demand is a result of national and collective defence requirements, the introduction of new weapon systems, the adaptation to modern standards or maintenance during the life cycle, as well as of the sustainability, efficiency and climate action provisions of the German Government. The Federal Climate Change Act stipulates in Section 3 (2) that German greenhouse gas emissions must be reduced to a level where net greenhouse gas neutrality is achieved by 2045. This provision is specified in more detail, among other things, by the 2021 Programme of Sustainability Measures and the energy efficiency provisions for climate-neutral new and extension buildings and building refurbishment. In Section 15, the Federal Climate Change Act underlines the role of the Federal Administration as a model, which is to be

organised in a climate-neutral manner already by 2030. In addition, the new principle for the use of energy is as follows: „Efficiency comes first“.

The cleanest and most economical energy is that which does not have to be generated at all. It must thus be a priority, to comprehensively reduce the energy requirements of the buildings. The secondary use of energy potentials of waste heat, for example in exhaust gases, also contributes significantly to savings in primary energy consumption. In order to achieve these standards, sustainability efforts in the field of action "Infrastructure" focus on various objectives in a total of six segments (see Figure 13).

Facts and Figures

- The Bundeswehr plans, builds and operates highly specialised infrastructure in Germany and abroad as well as in the areas of operations.
- The Bundeswehr operates approximately 1,500 facilities.
- Its national building stock comprises approximately 15,100 heated/cooled buildings with a net surface area of approximately 20 million square meters.
- In 2021, the drinking water consumption of the Bundeswehr amounted to approximately 7 million cubic meters, of which 1.1 million cubic meters came from its own drinking water wells.
- The total length of wastewater lines in the military facilities currently amounts to approximately 6,400 kilometres.
- In 2021, almost 4.1 terawatt hours of energy (heat/electricity) were consumed at the Bundeswehr premises. In 2021, around 3.5 gigawatt hours of electricity were generated in the Bundeswehr's own renewable energy facilities.

For Comparison: With a population of about 239,000, the consumption in Magdeburg is 7 terawatt hours.

Segments in the Field of Action

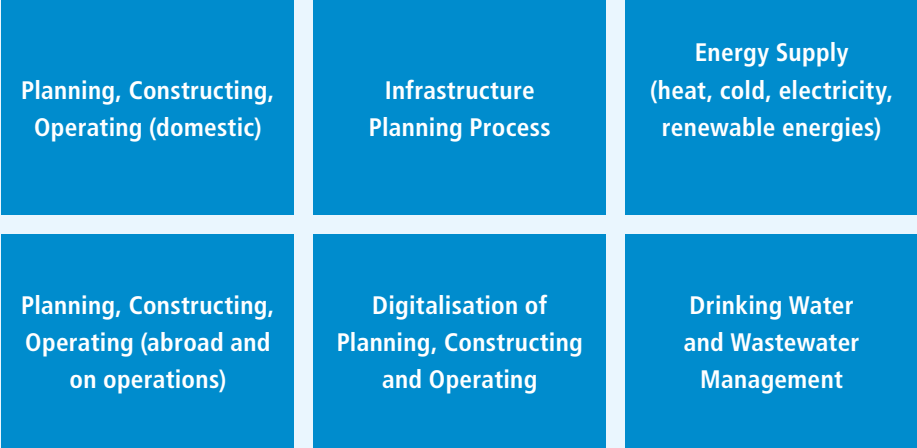


Figure 13: Overview of the segments in the field of action "Infrastructure"

Objectives and Measures per Segment

Planning, Constructing, Operating (Domestic)

„In order to achieve a climate-neutral building stock in Bundeswehr facilities by 2045, the requirements of the Federal Government’s Programme of Sustainability Measures and the climate action goals regarding the energy efficiency requirements for future construction tasks have been implemented.“

As of 2045, the entire Bundeswehr building stock in Germany will be operated in a climate-neutral manner. This means first and foremost that energy losses must be avoided through better heat protection by consistently refurbishing buildings in an energy-efficient way as well as by increasing the generation of renewable energies and avoiding fossil fuels. The energy efficiency (see Figure 14) of the technical installations will be increased and the required energy will be obtained from renewable sources as close to the relevant building as possible. Since mid-2021, new buildings must be built in accordance with the Federal building energy efficiency level 40 (requiring only 40% of primary energy) and existing buildings must be refurbished no later than 2045 to comply with the Federal building energy efficiency level 55 (requiring 55% of primary energy). The transformation of energy supply promises to make significant progress towards defossiliation, that is to say, the absence of fossil fuels and future climate neutrality. To verify the practical suitability of various technological solutions, ten pilot measures, called „Green Barracks“ (see information box on

the practical example „Green Barracks“) were initiated in April 2021.

As a measure of sustainable development, the “Sustainable Construction” assessment system will be applied throughout Germany to all investment construction tasks and a “silver” performance degree must be obtained to achieve the „plus” requirement level of the quality seal for sustainable buildings.

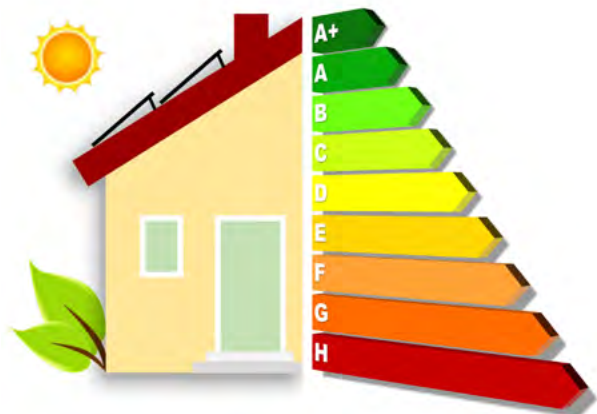


Figure 14: Building Energy Efficiency;
Source: Federal Ministry of Defence

Infrastructure Planning Process

„The process of providing a functioning and climate-neutral infrastructure has been accelerated and the implementation rate for infrastructure measures has been sustainably increased.“

The aim is to make the planning, construction and operation of Bundeswehr infrastructure projects more sustainable and efficient in the future. To this end, the existing infrastructure process must be fundamentally redesigned. This refers in particular to the implementation and timely provision of climate-friendly infrastructure. As part of the “Bundesbau” (federal construction) reform, the rules of procedure for the provision of infrastructure will be revised. This speeds up the implementation process and increases the implementation rate, for example by reducing test loops, interfaces and by clearly defining responsibilities. In addition, a new

prioritisation system is currently being introduced within the infrastructure process, which is structured according to the requirements of national and collective defence, legal requirements and the requirements for maintaining operational readiness. In shaping the infrastructure process, the AOR FMoD cooperates closely with other ministries and authorities (e.g. the Federal Ministry of Finance, the Institute for Federal Real Estate). The implementation of the high infrastructure requirements (in terms of quantity and quality) also requires sufficient budgetary funds and personnel resources on a permanent basis.

Energy Supply (Heat, Cold, Electricity, Renewable Energies)

„The energy supply of Bundeswehr facilities in Germany will be greenhouse gas-neutral by 2045 and at the same time it will contribute to increasing energy resilience.“

The topic of energy supply is of central importance in the field of action “Infrastructure”. As of 2045, the Bundeswehr energy supply will be greenhouse gas-neutral. For this purpose, an energy management system must be introduced by 2025 in order to present the level of energy and greenhouse gas savings by 2045 in a transparent manner and to operationalise the necessary measures. On this basis, an implementation concept for significantly reducing energy consumption and achieving greenhouse gas neutrality will be developed in cooperation with the specialist branches responsible for energy supply. First pilot projects such as the „Pfullendorf Green Site“ or „100 Percent Renewable Energies internal supply for Marienleuchte“ have already been launched. In addition, the maximum potential for the installation of renewable energies in the Bundeswehr properties will be analysed. As shown in figure 15, different sustainability targets are not mutually exclusive (photovoltaic and roof greening). According to the requirements of the Programme of Sustainability Measures, 100 percent of the electricity consumed in Bundeswehr facilities will be obtained from renewable sources as early as 2025. The transition in the heat supply of Bundeswehr facilities, usually from central to decentralised energy supply or to smart grid technologies ³⁹, will also create a minimum of independence

from third-party energy supplies (e.g. natural gas, electricity, district heating). In this context, it is important to harmonise the fluctuations in energy production and consumption with organisational and technological measures, to avoid any restrictions for military use and to prepare power networks for the increasing strain, caused e.g. by e-mobility.



Figure 15: Photovoltaic system on the roof of a Bundeswehr building; Source: Bundeswehr/Marcus Rott

³⁹ Definition by the Federal Environment Agency: „Smart grids combine generation, storage and consumption. A central control system harmonises these three tasks and compensates for power fluctuations in the grid resulting especially from volatile renewable energies. The network is based on information and communication technologies as well as on decentralised energy management systems for the coordination of the individual components.“

Planning, Constructing, Operating (Abroad and on Operations)

„Infrastructure on operations is provided in an energy-efficient and resource-saving manner and is operated in such a way that the logistic supply effort in the area of operations and the ecological footprint are reduced. During routine operations abroad, country-specific-provisions on climate action are complied with.“

Where the operational conditions allow, the share of renewable energies will be increased and energy-efficient, resource-saving technical systems will be used. Measuring and control systems as well as indicator-based controlling are helpful tools for the implementation of the objectives. Electricity generation supported by photovoltaic systems is becoming increasingly standard. As part of the United Nations peacekeeping mission MINUSMA, for example, additional electrical energy is generated at the sites in Mali and Niger by means of photovoltaic systems. Modern technical systems are used for the operation of the deployment area facilities. At the Gao site, for example, solar thermal cooling systems are used. Wastewater treatment will save the natural resources on site. In light of increasing energy requirement, the use of fossil fuels can be lowered in the foreseeable future with modern technological facilities. At the same time, the degree of energy self-sufficiency is increasing and the energy supply is thus becoming more secure. This will also help to reduce

logistic supply – usually over longer distances and in an unstable environment. These measures contribute to increasing the sustainability of the Armed Forces on operations, to reducing the logistic effort and to promoting the reputation of the Bundeswehr in the countries of deployment and with the Allies.



Figure 16: Photovoltaic system in the Gao/Mali field camp;
Source: Bundeswehr/Marc Vigansky

Digitalisation of Planning, Constructing and Operating

„In order to plan, build and operate Bundeswehr facilities more sustainably, the infrastructure process is completely digitalised and more efficiently designed.“

In future, the infrastructure process will be completely digitalised with the help of data processing and information technologies in order to make a significant contribution to sustainable and more efficient planning and to the construction and operation of Bundeswehr infrastructure projects. For this permanent task, the necessary organisational, technical and personnel arrangements are now being made to achieve the added values also in the field of sustainability (e.g. reduction of greenhouse gases). In cooperation with the then Federal Ministry of the Interior, Building and Community, the Federal Ministry of Defence published the „Building Information Modelling“ (BIM) master plan. According to the master plan, 30 infrastructure projects are currently implemented as live operational projects, which are processed on a standardised digital (demonstration/) collaboration platform. Based on the findings of these projects and the gradual introduction of the procedure into the infrastructure process, a cloud-based digital platform is currently being developed, which will be completed by 2025.

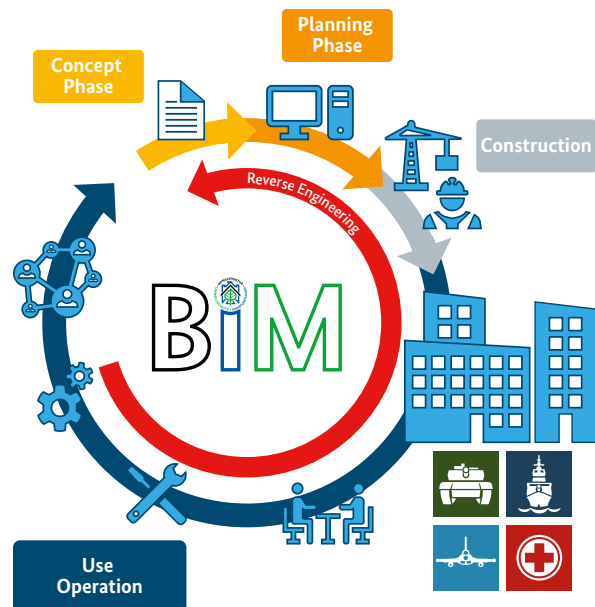


Figure 17: Life Cycle Approach Building Information Modelling;
Source: Federal Ministry of Defence

Drinking Water and Wastewater Management

„The management of drinking water and wastewater in the AOR FMoD ensures the availability of drinking water and sanitation for its members and contributes to the operational readiness of the Armed Forces. The high standard of drinking water is ensured.“

The protection of the natural resource of water is of great importance in the AOR FMoD, as the supply of drinking water is vital for maintaining the health of its members. Against this background, the water law requirements, such as the Federal Water Act, are fully implemented. The Bundeswehr service centres ensure compliance with the requirements of the German Drinking Water Regulation when providing and distributing drinking water to the facilities. The drinking water and wastewater management of the Bundeswehr will continue to make an important contribution to achieving the sustainability objective of the availability and sustainable management of the Bundeswehr's water and sanitation. Wherever possible, drinking water consumption should be reduced. To this end, all members of the AOR FMoD are required to use drinking water as efficiently as possible. At the same time, the high hygiene and availability standards of drinking water supply will be maintained. Regular testing of drinking water and modern installations techniques in new constructions and renovations will contribute to this.



Figure 18: A deep well on the premises of a Bundeswehr site;
Source: Bundeswehr/Jenny Bartsch

Practical Example

- The successful transition of energy supply towards defossilisation can only be achieved if supply security, resource conservation and environmental compatibility are harmonised with innovative and intelligent technical solutions. Today, the Bundeswehr is practically a pure energy end consumer and in future it must become more self-sufficient in the field of energy supply and generate, convert and store more of its own energy in its facilities (sector coupling). This requires the rapid expansion of renewable energies (e.g. photovoltaic, solar thermal energy, geothermal energy), the significant reduction of energy demand and the conversion of the entire heat supply to climate-neutral generation. The use of new, innovative supply technologies is an essential driver.

The testing of innovative supply technologies in the Bundeswehr premises is carried out in the „Green Barracks“.

In order to test the suitability of various technical solutions in practice, the Bundeswehr is currently testing and implementing innovative supply technologies in different configurations in ten selected facilities in the „Green Barracks“ project series. On the basis of the results of the pilot projects, tried and tested supply technologies are to be translated into normal operation. If further solutions stand the test, they will also be adopted.

What does the „Green Barracks“ project series contain?

The project series consists of ten pilot projects with different approaches to a climate-neutral facility operation, for example:

- Conversion of one complete facility to Federal building energy efficiency level 40 (requiring only 40% of primary energy) and the avoidance of fossil fuels as far as possible, as well as the use of smart grid technology (sector coupling) in another project.

- Adaptation of one facility to 100 percent self-supply through geothermal energy and photovoltaic systems.
- Complete disconnection of one facility from the natural gas supply by using wood pellets and heat pumps.
- Relevant energy generation for one facility through a fuel cell operated with „green“ hydrogen.

Challenges and Success Factors

A particular challenge in the field of action “Infrastructure” might be the conflict between sustainability requirements and military requirements or military demand. Russia’s war of aggression against Ukraine, which is against international law, and the resulting tense gas supply situation in Germany, also calls for a balance between ecological factors and the social and economic effects and may lead to temporary deviations from the sustainability targets. When implementing infrastructure and energy supply requirements and the construction measures required for this purpose, operational readiness, mission accomplishment and operational conditions must always be taken into account appropriately. It is important to move the infrastructural and energy transition of the Bundeswehr forward.

This can only be achieved if all parties involved develop a common understanding of the necessity and requirements of sustainability in the field of action and consistently implement the required objectives and measures.

Sustainability targets discussed in this chapter



5.3 Personnel

Introduction and Provisions

More than 250,000 employees work for the AOR FMoD in Germany and abroad. Thus, the AOR FMoD is one of the largest employers in Germany, competing with other employers for the best employees. The Bundeswehr's endeavour to be a modern employer with attractive working conditions plays an important role. The best possible work-life balance, also with regard to career development opportunities, in combination with sustainable working hours, is a decisive and often indispensable criterion for many AOR FMoD members when choosing their workplace. Gender equality and equal opportunities are also key factors for being perceived as a modern and attractive employer that also promotes diversity. These two aspects are furthermore crucial for ensuring functional capability, personnel readiness and the future viability of the Bundeswehr.

The requirements and provisions defining the targets of this field of action are based on the relevant German laws, such as Volume VIII of the German Code of Social Law, the Federal Equal Opportunities Act and the Act on Equal Opportunities for Female and Male Military Personnel of the Bundeswehr, Germany's Sustainable Development Strategy and the Programme of Sustainability Measures. Bundeswehr military provisions, e.g. concerning the compatibility of work and family life as well concerning diversity are the foundation for this field of action.

To fulfil these requirements, the sustainability activities in the field of action "Personnel" are divided into four segments.

Facts and Figures

- In October 2022, the Bundeswehr had 1,162 childcare places at 52 sites.
- In September 2022, there were about 17,300 teleworking employees in the AOR FMoD.
- At the end of June 2021⁴⁰, 20.4 percent of the approximately 263,700 members of the AOR FMoD were female. The proportion of women among civilian personnel was 38.2 percent, while the share of female soldiers among military personnel was 12.6 percent.
- According to the 2021 Gender Equality Index of the Federal Statistical Office, the proportion of women in leading positions at the Federal Ministry of Defence was 34.7 percent as of 30 June 2021.
- The continuous process of change in diversity management is a permanent strategic task in the AOR FMoD and concentrates on six core dimensions of diversity. There are 18 mandatory diversity courses divided into four training levels, based on the relevant assignment.

⁴⁰ Data collected by the Personnel Branch I 1 and evaluated by the Equal Opportunities and Diversity Staff Office of the Directorate-General for Personnel of the Federal Ministry of Defence.

Segments in the Field of Action



Figure 19: Overview of the segments in the field of action "Personnel"

Objectives and Measures per Segment

Childcare and Care of Relatives (Care Tasks of Bundeswehr Personnel)

„Family and official duties can be balanced throughout the entire employment period from recruitment to retirement. There must be no career disadvantages on account of family obligations.“

Ensuring a sustainable compatibility of family, nursing care and professional obligations over the entire employment period of Bundeswehr personnel is a legal obligation and at the same time a strategic objective in the Bundeswehr. The provisions for the implementation are based on Germany's Sustainable Development Strategy (SDG 4) and other laws and regulations with instruments fostering work-life balance, such as the provisions on part-time employment and family leave, the Home Care Leave Act, Volume VIII of the German Code of Social Law and Bundeswehr Regulation A-2645/6 „Compatibility of Work and Family Life“.

By applying the legal provisions and instruments, by continuously guaranteeing flexible and mobile work, by offering Bundeswehr childcare projects and the family service for the short-term provision of care for children and other family members requiring care in family emergencies, the work-life balance of Bundes-

wehr members with family care duties is ensured in the best possible way. Assuming family responsibility as a natural part of the Bundeswehr working culture contributes to this balance.

The aim is to further develop the existing instruments promoting work-life balance and to create new support instruments in order to ensure compatibility and to further advance it in future. The Bundeswehr childcare facilities in particular will be further developed and executive personnel will receive comprehensive training on work-life balance issues. Childcare measures will be implemented on a subsidiary basis in accordance with the requirements of the Bundeswehr members if the childcare provided by the municipalities at the respective Bundeswehr location is not sufficient. The aim of these measures is to support Bundeswehr members with family care duties by offering demand-oriented and reliable care services and the necessary flexibility and reliability so that they,

too, can participate in professional development and promotion in addition to their care obligations. Since it is still mostly women who bear the brunt of family care, the reliable care services support and promote especially the flexibility and opportunities for women in the Bundeswehr to develop and promote their careers.

The extension of family services to all Bundeswehr sites in 2021 (short-term provision of care

services) was another important milestone in supporting Bundeswehr personnel in their work-life balance. Bringing childcare and the care of family members in line with the professional obligations of Bundeswehr members will continue to be of great importance for personnel recruitment, retention and management.



Figure 20: Compatibility of family life, nursing care and work; Source: Bundeswehr/Marc Dorow/Army press and information centre

Diversity Management

„Fair and unreserved development opportunities as well as unrestricted access to career options are guaranteed for all AOR FMoD members irrespective of individual diversity dimensions.“

The principle of equal rights and equal treatment contained in Article 3 of the Basic Law calls for a working environment in which all Bundeswehr personnel can fully participate. Diversity shapes our lives and our daily interaction in all areas of life. The aim is therefore to achieve fair and unreserved development opportunities, unrestricted access to career options and an inclusive and respectful working environment as well as to overcome possible disadvantages for all members of the AOR FMoD. As a matter of principle, the way to achieve an appropriate level of career opportunity in an organisation is to promote a diverse and colourful workforce. The „Diversity and Inclusion“ concept is being modernised in order to promote a leadership and organisational culture in which equality of opportunity, diversity and inclusion are quality features and in order to adapt to socio-political changes. To this end, the analysis carried out as part of the „Diversity Agenda“ project provides an overall picture of the implementation of diversity management in the Federal Ministry of Defence with a concrete portfolio of measures. In addition to awareness-raising events for executives as well as exchange, best practice and network meetings, the topic of diversity is implemented in a mandatory and systematic manner in the training of all members of the AOR FMoD. The training is, among other things, part of the Programme of Sustainability Measures.

Following the top-down principle, a clear commitment to diversity as well as the willingness of all members of the AOR FMoD to contribute to shaping a tolerable and inclusive working environment are prerequisites for the acceptance of the derived measures. Diversity awareness and respect for and among employees contribute to making diversity a tangible experience. For this purpose, a diversity strategy for the main areas of action during the next five years will be developed as a basis for diversity management in the AOR FMoD and diversity will be further developed.

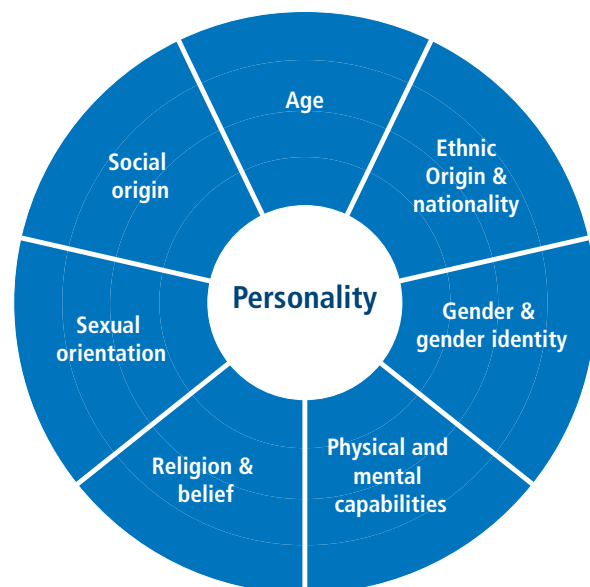


Figure 21: Core dimensions of diversity;
Source: Equal Opportunities and Diversity Staff Office in the Directorate-General for Personnel of the Federal Ministry of Defence

Sustainable Working Time Models

„Sustainable working time models that strike a balance between fulfilling duties, responsible handling of personnel resources and the private obligations of the members of the AOR FMoD are created. These models ensure health and occupational safety and promote the attractiveness of the Bundeswehr as an employer.“

Within the framework of the statutory and collective agreement provisions, the members of the AOR FMoD will benefit from modern working conditions and from an improved work-life balance. Within the scope of these regulations (e.g. Working Time Regulation, Military Personnel Working Hours Ordinance), the possibility of using different working time models and the introduction of further flexibility options is continuously examined. For example, the General Work Agreement on the Organisation and Recording of Working Time in the AOR FMoD was amended in July 2022. The specific requirements of the Agreement must, however, be implemented locally (e.g. more flexible working time models) by the individual agencies within the scope of the General Work Agreement on the Organisation and Recording of Working Time. When amending working time regulations, a balance must be created between the interests of the employer and the members of the AOR FMoD while taking into account occupational safety and health protection.

In the long term, the internal provisions of the AOR FMoD are continuously reviewed for possibilities of flexibilisation and optimisation in order to maintain modern and sustainable working time models that ensure the fulfilment of the mission, allow for responsible personnel management and create attractive working conditions.



Figure 22: Soldier at her workplace;
Source: Bundeswehr/Jonas Weber

Gender Equality

„Equality between women and men and their equal participation in leadership positions are promoted in accordance with the Federal Equal Opportunities Act.“

Achieving gender equality and equal participation of women and men in leadership positions within the scope of the Federal Equal Opportunities Act by the end of 2025 is an independent objective and a cross-sectional topic of the 2030 Agenda as well as of Germany's Sustainable Development Strategy. It is a guideline for personnel management in the AOR FMoD. All members of the AOR FMoD are offered equal and non-discriminatory career opportunities. Gender equality is thus a permanent cross-sectional and strategic task in the AOR FMoD. The work and plans for achieving equal opportunities that are laid down in the Federal Equal Opportunities Act and the Act on Equal Opportunities for Female and Male Military Personnel play, together with the agency-specific objectives formulated therein, an important role in this regard. By guaranteeing equal opportunities between the sexes as well through targeted measures on gender equality, for example by focusing on the topics of gender equality and equal opportunities during executive training, the under-representation of women can be tackled and their share in leadership positions in the

AOR FMoD can be increased. Reducing the under-representation of women in the Federal Ministry of Defence is, for example, one of the subjects of the annual target agreements between the leadership and the directors-general of the Federal Ministry of Defence. Due to their overall importance for sustainable development, the already initiated measures whose effects will only become visible in the medium to long term, must be continuously pursued and followed up in a structured manner.

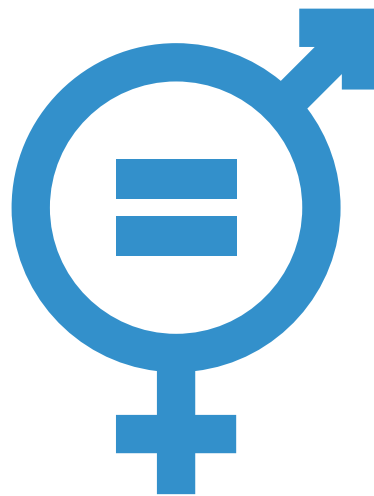


Figure 23: Gender equality; Source: Federal Ministry of Defence

Practical Example

Implementation of diversity topics in initial and follow-on training as well as for qualification measures for all members of the AOR FMoD

So far, awareness-raising for diversity topics has often been understood as a top-down task since the commitment to diversity is considered a leadership duty. In order to create active diversity for all AOR FMoD members it is necessary to deal with diversity in a confident manner at all levels. Therefore, as of 2023, diversity issues will be integrated into various military and civilian courses and training courses in a mandatory and harmonised manner for all members of the Ministry (Federal Ministry of Defence and the AOR FMoD). The training courses will ensure a basic capability for dealing with diversity for all staff members and, gradually and according to the relevant assignment, specialist skills for dealing with diversity for superiors and executives. The aim is to involve and raise awareness among all members of the AOR FMoD in and for diversity topics in order to promote respectful and tolerant behaviour.

Challenges and Success Factors

Like other public employers and private sector enterprises, the Bundeswehr must deal responsibly with its personnel and position itself as an attractive employer. In this context, ensuring work-life balance without career disadvantages plays an essential role over the entire period of employment. An important success factor is the „culture of compatibility“ in the Bundeswehr, i.e. being aware of the importance of compatibility as a normal part of the working culture. The introduction and continuous further development of modern, flexible working time models is another criterion for attractiveness that can only be met with an open-minded approach. Gender equality, a clear commitment to diversity and the necessary awareness-raising at all levels are also beneficial for the future viability, operational readiness and attractiveness of the Bundeswehr.

Sustainability targets discussed in this chapter



5.4 Procurement and Consumption

Introduction and Provisions

The Federal Ministry of Defence and the subordinate civilian agencies and civilian major organisational elements are part of the Federal Administration and thus also bound by its provisions in administrative matters. The Armed Forces are not part of the Federal Administration nor are they comparable to the usual structure of administrative authorities. Sustainable development including sustainability in the field of public procurement are objectives of the Federal Government and a corresponding management concept was established. The procurement strategy of the AOR FMoD as well as the Federal Government's Programme of Sustainability Measures define the framework conditions for the Bundeswehr's strategic and sustainable procurement, which in future will be based even more on the guiding principle of sustainable development.

More than 1,000 Bundeswehr procurement agencies meet the demand arising from operation and use within the AOR. By meeting this demand, the materiel readiness of the Armed Forces and the civilian major organisational elements will be ensured. While maintaining the operational readiness of the Bundeswehr, sustainability is considered and established as a principle of action in the procurement structures.

Through active leadership culture, the procurement specialists are able to deal with sustainability criteria and objectives in a legally secure manner and on a case-by-case basis.

Facts and Figures

- The procurement (purchase) activities of the Bundeswehr form one of the three pillars of Bundeswehr equipment and in-service support management. These activities cover the procurement of commercial and Bundeswehr-specific goods and services
- They require approximately 1,000 procurement agencies.
- The procurement agencies carry out more than 518,000 procurement operations per year, of which approximately 30 percent are material goods and approximately 70 percent are services.
- Bundeswehr procurement accounts for an annual volume of 6.1 billion euros. About half of this volume is drawn down through framework contracts.
- Approximately 14,800 existing framework contracts are used for Bundeswehr procurement.

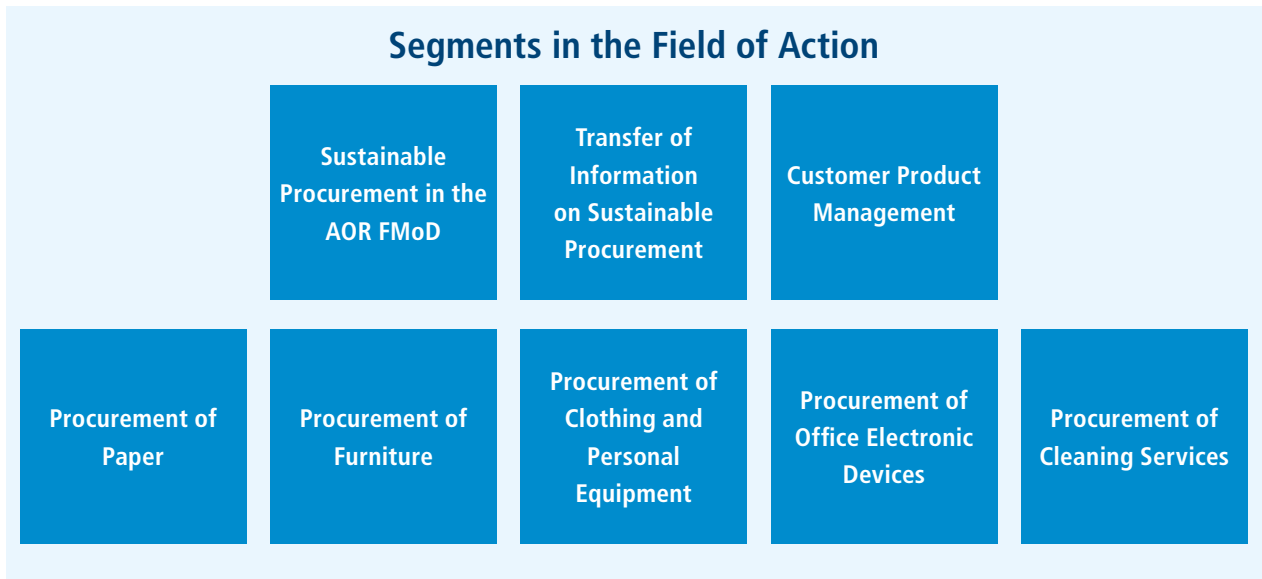


Figure 24: Overview of the segments in the field of action "Procurement and Consumption"

Objectives and Measures per Segment

Sustainable Procurement in the AOR FMoD

„Sustainable procurement is firmly established in the procurement structures in accordance with legal regulations and is implemented by the procurement specialists.“

In order to follow the guiding principle of sustainable development even more closely in future, the Federal Administration's provisions regarding the structuring of processes for strategic sustainable procurement for authorities and institutions are put into practice. Sustainability must be firmly embedded in the existing procurement structures, as far as this is feasible in light of the overarching objective of ensuring the materiel readiness of the Armed Forces. Through active leadership culture, the procurement specialists are able to deal with sustainability criteria and objectives in a legally secure manner and on a case-by-case basis.

The aim is to enable those involved in procurement to assess and implement sustainability options at any time in the procurement process. The measures required to implement strategic, sustainable procurement are divided into several sub-areas: „Provisions and Regulations“, „Sustainability Criteria“ and „Initial, Extension and Follow-On Training“.

Legal certainty regarding sustainability criteria in procurement is created by adapting AOR FMoD provisions to the regulations governing sustainability and, if necessary, by explanatory and supporting guidelines.

Sustainability criteria are taken into account in the procurement of material goods and services in the AOR FMoD by demanding sustainability requirements (e.g. sustainability certification) for invitations to tender and framework agreements. In addition, adherence to the social standards is demanded from service providers. Those involved in procurement are instructed to document the review of sustainability and social standards along the entire procurement process. The sustainability criteria considered during procurement are continuously further developed, standardised and, if the prerequisites have been created, electronically updated in order to create a basis for evaluating the consideration of sustainability in procurement. This data is used to establish a system monitoring the development of sustainable procurement in the AOR FMoD.

All parties involved in the procurement process undergo initial, extension and follow-on training within the scope of the role competence matrix in order to implement the existing provisions and legal obligations in a legally secure manner. This enables the persons formulating the identified requirements to consider sustainability aspects and to create the prerequisites for the procurement agencies to take the necessary measures for the contract award procedure.



Sustainable procurement in the AOR FMoD

Figure 25: Sustainable procurement in the AOR FMoD;
Source: Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support

ITransfer of Information on Sustainable Procurement

„The processes for strategic sustainable procurement for the implementation of interministerial measures have been successfully structured.“

The adaptation of the existing procurement structures to the provisions contained in the Programme of Sustainability Measures and Germany's Sustainable Development Strategy is strongly based on the cooperation and the transfer of knowledge and information between various departments, the responsible persons in the procurement process as well as internal and external participants and partners. At present, the Federal Ministry of Defence is in close coordination with the main parties involved in order to adapt the regulations and procedures in the procurement business process. The aim is to create legal and operational security for all parties involved in the procurement process. In addition, further guidelines will be prepared. One of the objectives is to revise the existing ministerial and interministerial framework agreements and comprehensively take into account sustainability criteria in new invitations to tender. In order to achieve a close and level-appropriate exchange, the Federal Ministry of Defence has designated points of contact for sustainable procurement within the Armed Forces and the Federal Defence Administration. They assume a coordinating function both within the AOR FMoD and in cooperation with other agencies, for example with the external competence centre for sustainable procurement. The contact persons thus support the further development of sustainability in the AOR FMoD through their internal and external exchange of experience and they act as multipliers in their own area of responsibility. Cooperation is reinforced by the fact that the Federal Ministry of Defence is also represented in the interministerial committee for sustainable public procurement. In this committee, the representatives of the various

ministries, among others, define sustainability criteria offering the procurement personnel security in sustainable public procurement. The Federal Ministry of Defence also cooperates closely with the competence centre for innovative procurement in order to establish and implement a practice-oriented and comprehensive initial and follow-on training system for sustainable public procurement in the existing structures. The training system focuses on both, the operational procurement and the strategic planning elements in the AOR FMoD. In addition, models and checklists are developed with the help of the competence centre for innovative procurement, among other things, in order to consistently establish nationwide sustainability in procurement and to actively promote continuous implementation.



Figure 26: Cooperation between members of the Bundeswehr. Source: Bundeswehr/Christian Zielonka

Beschaffungsvariante Customer Product Management

„Sustainability aspects are adequately considered in the revision of the Regulation on the Customer Product Management procurement variant.“

The Customer Product Management procurement variant serves the strategic goal of providing the Bundeswehr with the equipment it needs to fulfil its mission in a timely and operationally ready manner within the specified budget and keeping it ready for deployment. Procurement is carried out in the form of projects. A large part of the procurement in Customer Product Management is subject to the procurement regulation for the areas of defence and security, which are exempt from the requirements of the Programme of Sustainability Measures. Nevertheless, sustainability aspects are already taken into account in Customer Product Management, among other things within the scope of the

project elements Environmental Protection and Occupational Safety.

In future, projects will be planned, implemented and carried out with a stronger regard to sustainability. The aim is to clarify requirements for projects to be able to implement sustainability aspects. Sustainability aspects are appropriately considered as part of the revision of Customer Product Management.



Figure 27: Solar thermal containers from the energy camp for test purposes; Source: Bundeswehr

Procurement of Paper

„Paper consumption is continuously reduced in the AOR FMoD. For all paper products in the AOR FMoD, paper with a government quality mark is used in most cases.“

According to the current evaluations in the AOR FMoD, a continuous reduction of the copy paper consumption has already been achieved. In 2020, the Bundeswehr used for copying and printing in DIN A 4 format 100 percent recycled paper with the eco-label “Blauer Engel” (Blue Angel) according to the existing framework contract of the Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support and was awarded the seal „environmentally-conscious federal authority in the field of recycled paper” by the organisation Initiative Pro Recyclingpaper. The aim is to promote continuous reduction of paper consumption and the use of sustainable paper products. This will be achieved, for example, by increasing the use of electronic means and by showing advantages such as saving budget funds. Sustainability criteria⁴¹ will be established for framework agreements that are renewed or for which a new tendering procedure is started in order to be able to continue the positive development that has already been achieved (100 percent use of copy paper with the seal „Blue Angel”). At the same time, acceptance of sustainable paper products will be increased and the pooling of requirements in framework agreements will be promoted.



Figure 28: Paper with the eco-label “Blauer Engel” (Blue Angel);
Source: Bundeswehr/PAO Aegean Sea

⁴¹ In future, for the individual procurement of paper and paper products sustainability criteria will be established as a general principle.

Procurement of Furniture

„In the AOR FMoD, sustainably produced, biogenic or recycling-friendly furniture is preferred in the procurement process.“

Based on the sustainability objective, preference is given to furniture that is either sustainably produced and of biogenic origin or that contains recycled or reused materials. For furniture and slat frames made of wood and wood materials as well as for upholstered furniture, the provisions according to the “Blauer Engel” (Blue Angel) apply and the German Common Timber Decree⁴² must be observed. By 2025, 75 percent of the furniture, including upholstered furniture and slat frames made of wood and wood materials, will be procured in accordance with the Blue Angel criteria. For example, the new swivel chairs for the AOR FMoD already meet Level 3 of the European sustainability certification „LEVEL“. It remains, however, a challenge to provide information on the sustainability standards for furniture products. As a matter of fact, only a few of the procured furniture products contain a certification label attesting sustainability in all production steps and for all components of the furniture. For this reason, the certifications currently used in the award procedures will be extended and their acceptance will be strengthened by permanent funding. Where necessary and possible, international and European certificates shall also be used in invitations to tender. To this end, the procurement specialists will be provided with supporting information and knowledge about private certificates and/or foreign certification authorities. If a procurement project is based on a strategic concept, sustainability must be analysed comprehensively and, if necessary, on a segment-specific basis

and the required procurement-related provisions must be derived. This includes spare parts supply and repair options.



Figure 29: Figure 29: New Bundeswehr furniture series;
Source: Bundeswehr/Marcus Rott

⁴² Common Guideline to the Joint Regulation on the Procurement of Wood Products“; In this guideline, the Federal Government defines rules for the procurement of wood products for its procurement agencies, according to which only wood products from legal and sustainable forest management may be procured.

Procurement of Clothing and Personal Equipment

„The step-by-step plan for sustainable public textile procurement takes account of social and ecological requirements in the procurement process.“

The procurement of clothing and personal equipment for the Bundeswehr is generally carried out by the Bw Bekleidungsmanagement GmbH which manages approximately 3,500 different items of clothing and personal equipment and issues approximately 9.5 million different items annually to soldiers and civilian employees. Along the time lines of the step-by-step plan for sustainable public textile procurement, which is still being coordinated at ministerial level, the proportion of sustainably procured textiles is to increase up to 50 percent (except for special textiles). The step-by-step plan will be based on the social and environmental requirements of the „Guideline of the Federal Government to

Sustainable Textile Procurement for the Federal Administration“. Standardised and structured sustainable procurement is, however, already being integrated into the existing processes of Bw Bekleidungsmanagement GmbH.

Irrespective of the procurement of textiles, work shoes must gradually meet the criteria of the Blue Angel or comparable labels. By 2025, ten percent of the work shoes will be procured in accordance with sustainability criteria. Bw Bekleidungsmanagement GmbH was instructed accordingly.



Figure 30: Solemn pledge ceremony at Bendlerblock to mark the day of the establishment of the Bundeswehr; Source: Bundeswehr/Torsten Kraatz

Procurement of Office Electronic Devices

„Sustainability in the procurement of office electronic devices is strengthened by considering relevant certifications and by observing provisions for re-use, recycling and disposal.“

With the entry into force of the „General Administrative Regulation for the Procurement of Energy-Efficient Services“ in 2020 and its replacement by the „General Administrative Regulation for the Procurement of Climate-Friendly Services“ in 2021, the requirements regarding the procurement of office electronic devices were further developed. According to the new requirements, electronic devices with the best energy efficiency class must be procured in order to optimise power consumption. Sustainability aspects will also be considered in the procurement of office electronic devices (for example, the Blue Angel). In addition, the possibility to repair a device and the contractor's take-back obligation for re-use or environmentally-friendly disposal are important criteria for award procedures. The relevant provisions will be agreed upon in the relevant contracts. In future procurement processes, further suitable certificates and equivalent verification criteria will be analysed. The focus is also on the further development of product group-specific requirements to ensure sustainability in IT procurement. Sustainability aspects are increasingly taken into account in the renewal of framework agreements or in new tendering procedures.



Figure 31: IT in the Bundeswehr;
Source: Bundeswehr/Torsten Kraatz

Procurement of Cleaning Services

„Cleaning in the AOR FMoD is carried out in an environmentally friendly manner and under fair conditions.“

Environmentally friendly cleaning agents with quality marks, such as the „Blue Angel“ and the European Union „Ecolabel“, are continuously used. In this context, the share of procurement that takes sustainability criteria into account is gradually increased. Product group-specific requirements regarding sustainability and social criteria are also continuously further developed. The intention is to include sustainability aspects and certificates already as requirements in invitations to tender, for example by requiring the use of commercially available sustainable products (e.g. for cleaning agents) for the provision of the contractual services. Contractors tasked with cleaning services must comply with

these sustainability requirements. In addition to the use of environmentally friendly cleaning agents, service providers are required to adhere to social standards. This includes, among other things, familiarising cleaning personnel with the proper handling of cleaning agents, as well as compliance with collective agreements and minimum wage obligations of the companies. Expiring framework contracts with service providers will be issued and awarded with these criteria.



Figure 32: German Operational Sea Training 2017; Source: Bundeswehr/Sebastian Wilke

Practical Example

The aim of the training course „Strategic specialised user in Bundeswehr procurement“ is to provide the strategic procurement specialists with the necessary capabilities and analysis tools in the procurement alternative purchase of the Bundeswehr. Further purchase segments and appropriate strategies are already being analysed to create follow-on courses after the pilot „AIR segment strategy“.

As part of the development of these segment strategies, sustainability is presented as a separate chapter and thus comprehensively included in the analysis. Therefore, sustainability is also an important part of the course „Strategic specialised user in Bundeswehr procurement“.

Course contents were prepared together with the Competence Centre for Innovative Procurement. The Competence Centre as a sponsor of innovations in public procurement, was involved throughout the planning phase and will make a practical contribution to the qualification of strategic specialists through course modules.

Challenges and Success Factors

The successful, systemic orientation of procurement toward the guiding principle of sustainable development is a long-term project of the Bundeswehr, which is accompanied by many challenges. Within the scope of the implementation of sustainability requirements in procurement structures and processes, different departments or different organisational elements will be affected both within the Federal Ministry of Defence and in subordinate agencies. This results in a need for coordination, which makes it difficult to quickly implement the formulated objectives. Not only are the ability and consideration of all parties involved in the procurement process to apply and implement sustainability criteria and objectives in all central and decentralised structures essential factors in this context. The acceptance of sustainability must also be strengthened of customers and purchasers alike. Furthermore, it is necessary to fulfil the overarching task, i.e. covering the materiel requirements of the Armed Forces. For this purpose, regulations must be prepared in the AOR FMoD that allow for the accomplishment of the task as well as for the consideration of sustainability in public procurement.

Sustainability targets discussed in this chapter



5.5 Environmental Protection and Nature Conservation

Introduction and Provisions

An intact environment with all its dimensions, such as soil, water, air and biodiversity, is essential for human well-being and an important pillar for effective climate action. The Bundeswehr has been implementing the concept of environmental protection in connection with the sustainable use of military training areas since the 1970s. The military training areas are characterised by numerous special features that make them particularly valuable in terms of nature conservation: They are large, undivided areas that have not been subject to excessive farming and where in most cases entry is prohibited. At the same time, active military use creates a mosaic of diverse habitats in close proximity to each other.

In accordance with the precautionary principle, the polluter-pays principle and the avoidance principle, binding regulations for soil and water protection, immission control, nature conservation, waste management and circular economy have been and will be developed and implemented on the basis of existing legal provisions.

The AOR FMoD has a special approach in implementing the provisions as it harmonises the requirements of the environment in need of protection and the requirements of military use. Although priority is given to accomplishing the sovereign defence mission by means of appropriate exceptions in numerous environmental protection laws and agreements, environmental protection matters must be taken into account wherever possible. The majority of provisions on environmental protection result from the subject-specific federal and state laws, including the European directives implemented in them, e.g. the Federal Nature Conservation Act, the Federal Immission Control Act, the Federal

Soil Protection Act, the Federal Water Act or the Circular Economy Act. In addition, political measures from international agreements, national strategies or the Programme of Sustainability Measures set the framework.

The activities of the AOR FMoD in the field of environmental protection are recorded and evaluated as part of an environmental management system⁴³.

In order to fulfil the provisions, the field of action „Environmental Protection and Nature Conservation“ focuses its sustainability activities on various objectives in a total of seven segments.

Facts and Figures

- More than 2,500 facilities were examined for potential hazards to soil and water due to pollutants by means of more than 5,000 individual projects, and more than 1,000 areas were rehabilitated.
- More than 515 million euros were spent on the detection, investigation and remediation of harmful soil changes, contaminated sites and polluted bodies of water in the past 30 years.
- The environmental management system of the Bundeswehr, which was introduced in 2015, comprises six key areas: Energy efficiency, material efficiency, water, waste, emissions and land use with regard to biodiversity. In the year 2021, more than 30 key figures and indicators were considered to monitor the achievement of objectives in the Bundeswehr environmental management system.
- In 2019, the amount of waste was 130,000 tons, which was disposed of at 140 collection points for waste and small quantities of hazardous waste.

⁴³ In accordance with the Eco-Management and Audit Scheme, in accordance with EC Regulation No. 1221/2009.

- Operation in accordance with immission control legislation is ensured at 13 major training areas, 93 garrison ranges, 133 garrison training areas and more than 1,000 other facilities in the AOR FMoD.
- Over 135,000 hectares of military training areas throughout Germany are designated as areas belonging to the Natura 2000 network of protected areas. They are home to 180 animal and 300 plant species on the Red List.

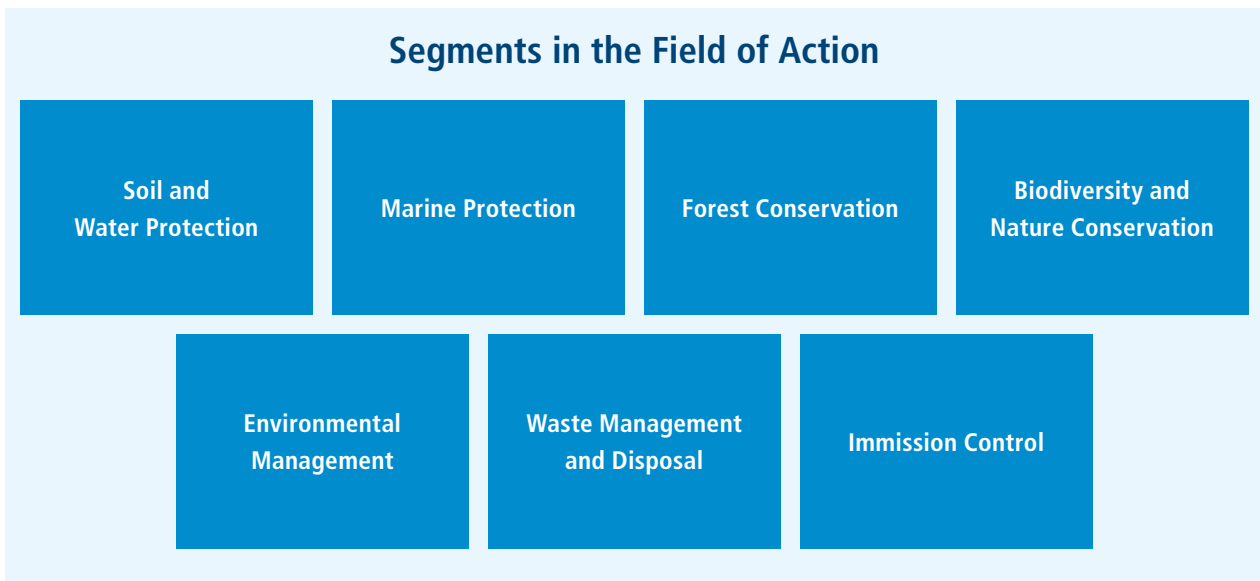


Figure 33: Overview of the segments in the field of action "Environmental Protection and Nature Conservation"

Objectives and Measures per Segment

Soil and Water Protection

„Soil functions are preserved and have been restored and bodies of water are sustainably protected as part of the natural balance and as a basis of living.“

The aim is to prevent soil and water contamination caused by military training activities or to eliminate contamination that has already occurred. In order to systematically counter this contamination in all facilities used by the Bundeswehr, the German military has been working on this problem since 1989 within the scope of the Bundeswehr Site Remediation Programme. The Federal Soil Protection Act and the Federal Water Act are the legal foundations which apply to the Bundeswehr, too, without restriction. With the Bundeswehr Site Remediation Programme, the German armed forces go beyond the legal requirements by initiating and financing measures that would actually have to be implemented by the competent soil protection authorities of the federal states. The Bundeswehr also operates the Programme for Preventive and Follow-up Soil and Water Protection on Training Areas, which supplements the Site Remediation Programme, because during firing and demolition exercises, pollutants released from ammunition and explosives may contaminate the soil, although in quantities that cannot be determined exactly. The Bundeswehr will continue to put a lot of effort into the implementation and further development of both programmes in order to ensure environmentally sound and sustainable exercise activities and facility operations in the long term and thus considerably contribute to soil and water protection in Germany. Together with the Institute for Federal Real Estate tasks, the Bundeswehr has in addition issued a guide on how to deal with contamination by per- and polyfluorinated chemicals. This document provides binding instructions for the facilities of the Federation under the responsibility of the

Federal Institute for Real Estate and the Bundeswehr.



Figure 34: Groundwater treatment system;
Source: Construction and real estate authority,
Mecklenburg-Western Pomerania, Federal Construction Division

Marine Protection

„The negative effects of our actions on the maritime environment are reduced to an absolute minimum.“

Marine protection plays a fundamental role in sustainable development. With the Marine Strategy Framework Directive, the European Union has created a legally binding framework in order to harmonise the protection and use of European seas and to achieve and maintain a good environmental status of European seas. Numerous international agreements (e.g. ASCOBANS⁴⁴, MARPOL⁴⁵, OSPAR⁴⁶) have largely identical objectives in their respective priorities. In order to achieve this objective, the pollution of the marine environment by direct pollutants (e.g. waste, oil) is to be prevented and indirect inputs of pollutants by ship traffic are to be reduced to a technically feasible and economically proportionate level. For this purpose, the Bundeswehr has prepared information sheets on the prevention of or response to environmental damage as well as a regulation on the treatment of waste. In addition, the emission of climate-relevant gases and pollutants from the naval vessels is counteracted by organisational and technical measures (e.g. by supplying electricity to the ships through shore connection when they are in port). In order to reduce the underwater noise pollution of the marine environment, in particular for marine mammals, to an absolute minimum, standards for protective measures to be applied for planned underwater demolitions had to be defined in cooperation and in coordination with the Federal Agency for Nature Conservation and the nature protection authorities by 2023 at the latest. The measures already taken and

planned (e.g. bubble curtains, ship design with a view to noise reduction) can be very complex, but they have the potential to make a significant contribution to improving the compatibility of military training activities and the protection of the marine environment in the North and Baltic Seas.

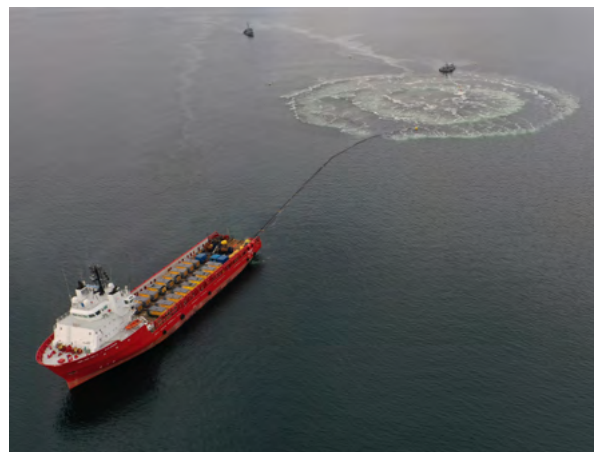


Figure 35: Use of a double bubble curtain to reduce the acoustic pressure caused by underwater explosions;
Source: Bundeswehr/Andrée Schlaeger

44 ASCOBANS (Agreement on the Conservation of Small cetaceans of the Baltic, North East Atlantic, Irish and North Seas);

45 MARPOL (International Convention for the Prevention of Pollution from Ships);

46 OSPAR (Convention for the Protection of the Marine Environment of the North-East Atlantic)

Forest Conservation

„Stable, climate-adaptive mixed forests with intact forest functions have been developed.“

Intact forests contribute significantly to the achievement of various types of sustainability targets and to climate protection in particular (greenhouse gas reservoirs), but are also affected by the effects of climate change. For this reason, the focus increasingly is on the conversion of forests into stable, climate-adaptive forests, also on Bundeswehr properties, always taking into account the military requirements for use (e.g. long-term training environment, protection of local residents). In addition to the legal provisions resulting e.g. from the Habitats Directive and the Birds Directive, the National Strategy on Biological Diversity, the strategy for the exemplary consideration of biodiversity concerns on all areas of the Federation and the Forest Strategy 2050 provide the basis for the sustainable management of German forests and thus also of the forests on Bundeswehr properties. This, as well as the protection of the animal and plant species occurring there, is the responsibility of the Federal Forestry Division, a branch of the Institute for Federal Real Estate, and is carried out in close coordination with the area of responsibility of the FMoD. In order to achieve this goal, the forests on Bundeswehr properties must be converted and developed to become near-natural, site-compatible, climate-resilient and stable mixed stocks. For this purpose, complex forestry measures (e.g. the preservation and maintenance of small structures such as (forest) moors, forest meadows and structurally rich woodland edges) are being taken as part of user-oriented, nature-compatible terrain management, which already has been established for many years. The project „Basic management principles for the development of climate-adaptive federal forests“ initiated in

2021 and a subsequent 20-year forest conversion programme („Federal Forest 2040“), which takes into account future climate and location changes in line with the Federal Government’s climate protection programme, serves to even better adapt the federal forests to climate change and turn them into sustainable CO² reservoirs on areas used for military purposes. This creates the basis for the long-term use of Bundeswehr training areas in accordance with training requirements, because forests can sustainably perform their important protective functions.



Figure 36: Structurally rich forest serving as a backdrop for Bundeswehr training; Source: Bundeswehr/Mario Bähr

Biodiversity and Nature Conservation

„Biodiversity is permanently protected in harmony with military use and actively promoted wherever necessary and possible.“

The aim is to achieve a favourable conservation status on Bundeswehr properties for the habitats and species of the Habitats Directive and the Birds Directive and to maintain or restore the biotopes and species protected under the Federal Nature Conservation Act. Since almost 60 percent of Bundeswehr training areas are designated as Natura 2000 areas in accordance with the European Habitats and Birds directives due to their outstanding ecological value, the Bundeswehr has a special responsibility for maintaining these habitats and species. To achieve this objective, action plans as well as maintenance and development plans are prepared for all areas used for military purposes that contain parts of Natura 2000 areas. In addition, awareness and nature protection training on how to harmonise the military use of land and nature conservation is conducted for the military user. In addition, it is continuously examined whether and to what extent a more natural design of military infrastructure is compatible with its intended purpose and economically feasible (e.g. setting up insect hotels or building natural stone walls). Areas to be used by the military must provide a versatile exercise environment that can be used in the long term. The terrain management required for this purpose thus promotes the structural wealth of the training areas and is largely in line with the requirements of nature protection law and technical provisions. The activities of the Bundeswehr with regard to nature conservation and the preservation of biological diversity are mainly guided by the requirements of the Federal Nature Conservation Act and the relevant provisions of the nature protection legislation of the federal states. On the whole, the state of biodiversity at Bundeswehr training areas must be assessed as

good and stable. The management approach of the areas practiced so far has been successful and should be maintained.



Figure 37: Tracked vehicle removing upgrowth;
Source: Bundeswehr/Marcus Rott

Environmental Management

„The environmental performance of the Ministry and its subordinate agencies has been improved by means of an environmental management system.“

Continuous improvement of environmental performance is an established objective of the AOR FMoD and therefore part of all plans and actions that serve to accomplish the Bundeswehr mission. The environmental management system of the Bundeswehr is a control tool specifically adapted to the needs of the Bundeswehr in this area. On the basis of evaluations, the Bundeswehr further develops the target system for the Bundeswehr environmental management annually, implements appropriate measures and evaluates the results which again serve as a basis for deriving new targets. This management cycle includes a continuous examination of how processes, activities, services, products, planning and the behaviour of Bundeswehr personnel affect the environment (cf. Figure 38, process steps in the management cycle of the Bundeswehr environmental management system). In addition, the Programme of Sustainability Measures stipulates that an environmental management system⁴⁷ has to be introduced by 2025 as a voluntary instrument in all supreme federal authorities. The Federal Ministry of Defence has been involved in a joint introduction and certification process for the federal authorities since 2021. The involvement of the members of the AOR FMoD is a success factor and a challenge in the field of environmental management. They can actively participate and submit ideas and suggestions for improvement directly or e.g. via the continuous improvement programme. The high level and consistency of the Bundeswehr performance in the field of environmental protection are regularly illustrated and continuously improved through the environmental reporting system.



Figure 38: Process steps in the management cycle of the Bundeswehr environmental management system; Source: Bundeswehr, Federal Office of Bundeswehr Infrastructure, Environmental Protection and Services, Branch GS II 1

⁴⁷ Eco-Management and Audit Scheme, in accordance with EC Regulation No. 1221/2009.

Waste Management and Disposal

„People and the environment are protected in the management of waste.“

The aim is to prevent or reduce the generation of waste and its harmful effects at all facilities used by the Bundeswehr and to ensure the proper handling of waste in an economic manner. The Bundeswehr is taking this into account, among other things, by means of digital specialist controlling, which is used to continuously optimize the economic efficiency of the waste disposal routes, and by means of a large number of framework disposal contracts that ensure legal and economic action at all times. In addition, the Bundeswehr maintains a comprehensive network of collection systems in its facilities to enable the takeover by municipal waste disposal agencies or the waste manage-

ment industry. The decisive legal basis for waste management and disposal is the circular economy law. The Bundeswehr will continue to focus on the protection of man and the environment in the management of its waste and on the conservation of natural resources by sorting waste and using recycling facilities. In this context, the awareness of the procurement and management agencies for the environmentally friendly use of resources also plays an important role.



Figure 39: Professional disposal of personal protective equipment of a soldier; Source: Bundeswehr/Alexander Markus



Figure 40: Armoured howitzers 2000 perform the sharp firing during training and training exercise 2022 at the Bergen training area.
Source: Bundeswehr/Mario Bähr

Immission Protection

„The environment is protected from harmful immissions.“

The aim is to protect the environment from harmful environmental effects caused by immissions and to prevent their development. The operation of defence materials, equipment and systems in the AOR FMoD can cause loads such as noise, vibrations, dust and exhaust gases. In order to ensure that legal operation is always ensured, appropriate procedures have been established to prevent the harmful environmental effects on the general public and the neighbourhood caused by the emissions generated by the Bundeswehr. The provision of suitable test and firing areas in Germany is required for the training of the armed forces and for the testing of

weapons and equipment. The objective of noise management at Bundeswehr firing ranges is to avoid „considerable“ harassment of the neighbourhood and the general public by firing noise while at the same time ensuring the necessary level of exercise. The Federal Immission Protection Act is the decisive legal basis for the protection of immission. In the future, the Bundeswehr will continue to ensure the training, training and supply requirements of the armed forces while at the same time ensuring the operation of the facilities in the AOR FMoD in accordance with the requirements of the German law on immission.

Practical Example

Water regeneration on training grounds

An example of how environmental protection and military use go hand in hand with the Bundeswehr can be found on the Dorbaum training area: Here, the river Ems is returned to its natural environment. In the 1930er, the river bed was buried to protect it from flooding. The Result: The flow rate and flooding increased, the banks were ecological dead. In the meantime, we know: A meandering river bed is not only a better flood protection in inhabited areas. It also offers more habitat for animals and plants. The stone river bed has therefore been removed – the water flows freely again and the river Ems can spread as it did 100 years ago. The other planned measures for renaturation (e.g. restoration of the flow to the old arm and the laying of sand banks) offer advantages for the practicing force and nature alike. A natural river bed offers better training opportunities for the soldiers, because after each flood the troops will find a changed landscape there.

Challenges and success factors

A particular challenge is the compatibility of environmental protection requirements with the requirements of military use and economic operation. When implementing appropriate measures, the operation of Bundeswehr facilities (such as training and exercise operations) for military and civilian personnel must always be provisions ensured in accordance with requirements, while complying with all legal requirements. As a rule, however, this triad can be achieved. Conflicts of objectives also arise in part with the requirements for the fulfilment of other sustainability targets, for example in the case of building renovation or the construction of energy-generating plants. The high natural protection potential of the areas also requires extensive compensation measures for necessary (construction) projects. Success factors that favour the fulfilment of the increasing requirements of environmental and nature protection are a common understanding of all parties involved in the field of action "Environmental Protection and "Nature Conservation" and an acceptance of the respective concerns despite positions that are sometimes considerably controversial.

In this chapter, the sustainability targets were discussed



5.6 Health and Food

Introduction and Provisions

More than 250,000 servicemen and women as well as civilian employees in Germany and abroad are members of the AOR FMoD. The accomplishment of the Bundeswehr mission depends largely on the operational readiness of all Bundeswehr personnel. An increasing general shortage of skilled personnel and a demographic development involving a decrease in the number of working-age people contrast with increasing demands on both military personnel and civilian employees. Maintaining operational capability and sustainability as well as fitness for work and duty of the entire body of personnel is of major importance and maintaining and restoring medical operational capability and fitness for duty is the primary objective of Bundeswehr health care. In addition to national risk and crisis management for the protection of German nationals abroad and comprehensive medical support for operations at home, refocusing on national and collective defence is the most demanding and complex task and forms the core of the Bundeswehr's ability to act and provide health care. In this context, aspects of health care, occupational safety and health as well as food are of major importance.

In the field of action "Health and Food Safety", there are topic-specific provisions, such as the Programme of Sustainability Measures, occupational safety and health law and the Bundeswehr Health Care Strategy. In order to fulfil the provisions of the field of action "Health and Food", this field focuses its sustainability activities on various objectives in a total of four segments.

Facts and Figures

- Within the scope of occupational health management, a large number of health promotion measures are offered, too. Since the introduction of occupational health manage-

ment in 2016, approximately 90 percent of the agencies have been planning and implementing such measures in accordance with their requirements with the support of the 13 occupational health management coordination centres.

- In the major organisational elements, occupational health management structures have been established down to headquarters level, and regional full-time coordinators implement this concept throughout the Federal Republic of Germany. At agency/unit level, occupational health management representatives perform this task as a secondary function.
- Regular information letters by the Bundeswehr Chief Occupational Safety Engineer increase awareness among all superiors and personnel that occupational safety and health is an integral and indispensable part of service and work and makes a significant contribution to operational readiness.
- Up to 35,000 dignitaries from politics and industry, including from other countries, are hosted at the visitors' mess of the Federal Ministry of Defence every year.
- The regular annual turnover of office canteens in the AOR FMoD amounts to more than two million euros. The achievement of sustainability targets is monitored on the basis of more than 30 key figures and indicators.
- At present, the Federal Ministry of Defence has two office canteens in Berlin and one in Bonn, where at least two vegan and/or vegetarian dishes are offered, as well as at least three sustainable dishes every week.

Segments in the Field of Action



Figure 41: Overview of the segments in the field of action "Health and Food"

Objectives and Measures per Segment

Occupational Health Management in the AOR FMoD

„The health of the members of the AOR FMoD will be maintained, protected and promoted, which will have a positive effect on the performance and motivation of Bundeswehr personnel.“

The aim of occupational health management is to increase operational and performance capability of this AOR by establishing a health culture in which the relationships between personal health and the working environment of Bundeswehr personnel are understood. An effective approach of the employer is to design the workplace in such a way that the coping possibilities, resistance resources and resistance competences of Bundeswehr personnel are maintained, restored and even strengthened. Additional systematic networking of the various subject areas of occupational health management (leadership and organisation, occupational safety and health, occupational health promotion and occupational reintegration) gradually turns occupational health management into a central management system and command and control tool. Only the targeted, systematic and continuous networking of the options for action in the subject areas can achieve desired results and produce effective measures (e.g. joint offers and individual consultations) against the decreasing physical fitness of society and the resulting lifestyle diseases. Occupational health management is thus a cross-sectional task associated with sustainable personnel policy, organisational and work design as well as leadership culture and their further development in the AOR FMoD. The AOR FMoD will strongly promote the further development of the systematic aspects of occupational health management also in the future, among other things through communication and digitalisation, as well as

through accompanying scientific research, in order to fully exploit the potential of health-promoting factors in the organisation of daily duty, thus making an additional contribution to the attractiveness of the Bundeswehr as an employer.



Figure 42: Logo of occupational health management;
Source: Directorate-General for Forces Policy, San 1 Branch,
Federal Ministry of Defence

Bundeswehr Health Care

„The physical, mental and social health of all Bundeswehr personnel and the health of service animals will be promoted, protected and maintained, and the health of all sick, injured or wounded soldiers will be restored.“

The primary objective of Bundeswehr health care is to maintain, protect and, if applicable, restore fitness for deployment and duty. For this purpose, Bundeswehr health care combines the components human medicine, dentistry, veterinary medicine, pharmacy and food chemistry in an independent, complex health care system. This system not only includes patient care but also health protection and promotion, the performance of statutory public law tasks, further development and research as well as the management and control of this military health care system from a single source. Bundeswehr health care forms a network with the civilian health care system of the Federal Republic of Germany. The relevant guideline is the Bundeswehr Health Care Strategy, in which the Executive Group of the Federal Ministry of Defence specifies the following eight strategic objectives:

- Ensure the availability and good quality of medical support in a mission-oriented, resilient and continuous manner;
- Reduce the complexity of the overall health care system as well as interfaces in the performance process;
- Strengthen the European pillar in military health care;
- Use the potential of health research and accelerate its translation into practice;
- Ensure digitalisation throughout the Bundeswehr health care system;

- Further expand and optimise involvement with and ties to institutions of the civilian health care system and global health actors;
- Further develop innovative and sustainable qualification paths for health care personnel;
- Promote health resilience as a basic prerequisite for personnel readiness.

Challenges in the context of Bundeswehr health care include the ever-increasing legal and regulatory requirements to be met by the actors and the demands on medical care to meet state-of-the-art standards. The further development of the Bundeswehr's health care system is geared sustainably towards the scenario of national and collective defence and contributes to overall national health care in overall defence.



Figure 43: Scene during an image shoot on the subject of „Medical Service“; Source: Directorate-General for Forces Policy, San 1 Branch, Federal Ministry of Defence

Occupational Safety and Health

„The health and safety of Bundeswehr personnel on duty and at work are ensured and improved by measures in the field of occupational safety and health and by preventive measures.“

It is an essential objective of the AOR FMoD to sustainably ensure and continuously improve occupational safety and health for more than 250,000 Bundeswehr personnel in their units and working environments. Occupational safety is based, among other things, on European occupational safety and health laws, the German Occupational Safety and Health Act, the German Occupational Safety Act and the legal ordinances derived from it. The aim of occupational safety and health in the Bundeswehr is to avoid or minimise duty- and job-related health risks and burdens and to design and improve workplaces, work processes and the working environment. It is an integral part of all processes and must be observed in all planning efforts, directives and orders as a contribution to the welfare of the Bundeswehr personnel to be made by the employer. Workplaces must be designed with the aim to avoid hazards to life as well as to physical and mental health or to reduce the remaining hazards as far as possible. For this purpose, the AOR FMoD has established an occupational safety and health organisation that implements, monitors and continuously further develops occupational safety and health measures (e.g. regular information and advice on the protection of Bundeswehr personnel as well as supervision/inspections by occupational safety and health specialists, regulations on safe workplace design). This makes it possible to identify health hazards at an early stage and to sustainably reduce or avoid them. Since the activities in the AOR FMoD Bundeswehr, especially in the armed forces, often involve high risks, occupational health and safety also makes

a significant contribution to the personnel and material operational readiness of the Bundeswehr. If, in individual cases, appropriate occupational safety and health measures prevent or restrict mission accomplishment, the Federal Ministry of Defence may allow to partly or comprehensively deviate from the provisions of the Occupational Safety and Health Act for certain activities during deployment as well as for mission support or deployment preparation activities, if otherwise the objectives of the mission cannot be achieved or if the security of the deployed forces would be at risk.



Figure 44: Safety notice at the workplace;
Source: Bundeswehr/Anne Weinrich

Food

„The food offered at the Federal Ministry of Defence visitors' mess and at the office canteens is geared to sustainability aspects throughout the entire value creation chain.“

High-quality and balanced food is offered at the visitors' mess of the Federal Ministry of Defence and at the office canteens of the AOR FMoD. This is done in accordance with the framework requirements of the Programme of Sustainability Measures and taking into account the quality standards of the German Nutrition Society (DGE) for company catering. Thus, the impact on the environment is largely minimised and the overall sustainability of catering is improved. In order to achieve the sustainability targets, measures are taken along the entire value creation chain, from food planning to ordering/delivery, and from production/preparation to waste disposal. To name a few examples which illustrate how sustainability aspects are taken into account: A vegetarian dish is offered on a daily basis, regional and seasonal fruits and vegetables are procured and prepared, the number of lunch meals with meat components has been reduced and the quantities issued, i.e. portion sizes have been adapted in order to reduce food waste. The economic consequences for canteen operators and the effects on the prices for users must always be considered when implementing measures to achieve the sustainability targets. In addition, the implementation of the sustainability targets significantly depends on whether the contractual operators of the office canteens can be won over for participation – beyond existing contractual agreements. This results in a corresponding self-commitment and thus a higher degree of reliability. It is therefore essential to maintain close cooperation between the Bundeswehr as a client and the canteen operators, and to ensure transparency towards users.

In addition, existing offers and the projects for sustainable catering that have already started will be further expanded together with the operators of the Federal Ministry of Defence visitors' mess and the office canteens in the future.



Figure 45: Pastry dish with sweet chestnuts;
Source: Bundeswehr/Marcus Rott

Practical Example

Occupational Health Promotion Measures

At the Federal Ministry of Defence in Bonn, a wide range of sports and exercise activities are offered as part of occupational health promotion. These measures, especially in the areas of exercise, nutrition, stress management and addiction prevention, include health courses (e.g. smoking cessation courses), exercise programmes (e.g. healthy sports, yoga, back-strengthening exercises), and appointments for preventive medicine consultation. For example, there is an activity referred to as „Running School“, which is offered twice a week. This includes running and endurance training both for beginners and for those who want to take up this sport again after a pause, as well as a coordination and athletics training for proficient runners. The running school focuses on the practice of healthy movement patterns, mobilisation, stabilisation and strengthening. In addition, the participants receive information on a healthier diet and ideas for recipes.

Challenges and Success Factors

Like other authorities and enterprises of the private sector, the AOR FMoD faces and has to cope with a wide variety of challenges on the job market. It not only must cater for people's need to achieve personal fulfilment at work and during their leisure time (work-life balance), but also has to take effective measures to ensure long-term fitness for work and duty and thus the operational readiness of the entire personnel. Furthermore, it is important to convince each individual person of the fact that improved health behaviour and their participation in the occupational health management activities offered - in addition to statutory protective tasks - will not only improve their own quality of life, but also have an external effect, i.e. healthy self-management must be recognised as a prerequisite for healthy leadership. Additional challenges to Bundeswehr health care are the considerable speed with which the framework

conditions of the civilian health market and the security environment change as well as the increasingly short innovation cycles in scientific and technological development in all sectors of science relevant to health. Success factors that facilitate meeting the requirements in this field of action include the regular evaluation of occupational health management activities, looking at participation levels and the resulting effects in order to optimise occupational health management. Equally important are continuous efforts to increase awareness of all superiors and personnel that occupational safety and health is an integral and indispensable part of duty and work. Adapting federal canteen guidelines and introducing a modern quality management system for leaseholders of office canteens appear to be suitable measures in the area of food.

Sustainability targets discussed in this chapter



5.7 Peace and Security

Introduction and Provisions

Sustainable Development Goal 16 „Peace, Justice and Strong Institutions“ is a fundamental prerequisite for the achievement of further sustainability targets. The Sustainability and Climate Action Strategy of the AOR FMoD addresses this task in the „Peace and Security“ field of action.

Through international crisis prevention and crisis management and within the framework of national and collective defence, the area of responsibility of the Federal Ministry of Defence contributes to peace and security both in Germany and abroad and thus to sustainable development. In addition, the AOR FMoD contributes to the establishment and promotion of peaceful and inclusive societies through numerous activities in this field of action within the scope of the Federal Government's Enable and Enhance Initiative, arms control, confidence and security building measures, humanitarian assistance and disaster relief and subsidiary support services. The starting point for the activities of the AOR FMoD is the concept of networked security as a prerequisite for sustainable development.

The above activities require cooperation with partners. Therefore, the establishment of „Partnerships for the Goals“ (Sustainable Development Goal 17) is an essential prerequisite for ensuring peace and security.

The field of action „Peace and Security“ implements the United Nations Environment Strategy for Peace Operations. It is crucial for humanitarian assistance and disaster relief that the United Nations Military and Civil Defence Asset („Oslo Guidelines“) be observed. In addition, above field of action contributes to building resilience to climate-related consequences affecting global security as described in the strategic concept of NATO and the Strategic Compass of the European Union of 2022.

Facts and Figures

- To date, several hundred projects have been implemented worldwide as part of the Federal Government's Enable and Enhance Initiative.
- Bundeswehr personnel supported and still support sustainable development in the UN peace missions MINUSMA, UNMISS and UNAMID – as part of the military contribution, in cooperation with civilian partners and in multidimensional peacekeeping operations.
- Military training currently comprises more than 3,500 different types of training courses.
- Approximately 34,000 soldiers are currently undergoing military training, including elements of civilian education.
- The armed forces conduct and participate in more than 350 exercises per year.
- The Bundeswehr has provided support in the form of approximately 10,000 measures during the fight against the COVID-19 pandemic. In February 2021, approximately 19,100 members of the Bundeswehr were employed in assistance missions. The Bundeswehr has thus made a significant contribution to the Federal Government's fight against the pandemic.
- In connection with Russia's war of aggression against Ukraine in contravention of international law, the Bundeswehr conducted ten flights (strategic aeromedical evacuation) as part of humanitarian assistance and disaster relief between April and June 2022. 279 Ukrainian patients and 53 persons accompanying them were flown from Poland to Germany so that follow-on medical treatment could be provided in civilian hospitals there.



Figure 46: Overview of the segments in the field of action "Peace and Security"



Figure 47: Basic training in 232 Mountain Infantry Battalion; Source: Bundeswehr/Marc Dorow

Objectives and Measures per Segment

Training and Exercise Activities for National and Collective Defence

„A flexible, modern and attractive training and exercise organisation oriented towards the capability of national and collective defence has been developed and thus contributes to increasing the operational readiness of the armed forces.“

Operational readiness requires security of action. The objective of military training and exercises is to create security of action across the entire task and intensity spectrum of the Bundeswehr through soldiers whose training has made them fit for war, who are motivated and show initiative and who are able to act independently as part of a team.

In addition to the objective of providing mission-ready personnel, training and exercise activities also serve to support partners. Military training

and the exercise system thus contribute to the achievement of a substantial contribution to safeguarding Germany's security and defence policy interests and to ensuring Germany's strategic priorities.

Since the beginning of Russia's unlawful war of aggression against Ukraine, training and exercise have been geared even more consistently to the Bundeswehr's capability of national and collective defence.

Enable and Enhance Initiative of the Federal Government

„The Federal Government’s Enable and Enhance Initiative among other things contributes to the reduction of migration pressure by strengthening the security sectors of partner countries in crisis regions.“

In many countries and regions, the capabilities of civilian and military security forces need to be consolidated in order to contain the causes of migration, human trafficking and terrorism. In accordance with the principle of helping partners to help themselves, the Federal Government’s Enable and Enhance Initiative since 2016 has contributed to the stabilisation of affected regions, e.g. in Africa and the broader Middle East by providing equipment, training and advice to local security forces, and will also benefit other regions of the world in the future.

This creates the conditions for the containment of war, violence as well as hybrid conflicts and also contributes to the reduction of migration pressure and environmental degradation in the regions concerned. All projects are coordinated between the Federal Foreign Office and the Federal Ministry of Defence. Thus, partners can quickly be supported by ad hoc projects, too. Examples include projects in the fight against pandemics or the response to unexpected security risks.

The Federal Ministry of Defence and the Foreign Office will continue to provide long-term, closely coordinated support to partner countries in the capacity-building of civilian and military security forces also in the future, thus contributing indirectly to sustainability.



Figure 48: The Federal Government’s Enable and Enhance Initiative provides supports in the form of equipment, training and infrastructure; Source: Bundeswehr/Jana Neumann



Figure 49: Foot patrol in Gao, operation MINUSMA; Source: Bundeswehr/Christoph Liesmann

International Crisis Prevention and Crisis Management

„International crisis prevention and crisis management contribute to peace and security and thus to sustainable development. In this context, environmental protection and climate action will be taken into account as far as this can be harmonised with the achievement of mission objectives.“

Corresponding with the guideline of the same name issued by the Federal Government in 2017 the objectives of the segment are to prevent crises, manage conflicts and promote peace. For this purpose, measures are taken for the early recognition of crises, conflict prevention, crisis management, stabilisation and post-crisis rehabilitation. This includes contributions to global maritime security, participation in operations within the framework of international

crisis management, which particularly include participation in United Nations peacekeeping missions aimed at sustainable development, contributions within the framework of international organisations, alliances and partnerships, contributions to the fight against terrorism, against cyber and space threats, against hybrid threats, for the protection of sea lines of communication and for the enforcement of embargoes and sanctions.

Arms Control and Confidence- and Security-building Measures

„Awareness of the effects of climate change on politico-military security within the framework of the Organisation for Security and Co-operation in Europe will be promoted and small arms control will be made more efficient through the inclusion of climate and sustainability aspects.“

One of this segment's objectives is to make the participating countries of the Organisation for Security and Co-operation in Europe increasingly aware of the effects and consequences of climate change on political and military security within the framework of the Organisation for Security and Co-operation in Europe. For this purpose, the topic „climate and security“ is to be firmly embedded in the code of conduct of the Organisation for Security and Co-operation in Europe on politico-military aspects of security e.g. in the form of a voluntary report.

In the field of small arms control, climate and sustainability aspects are to be systematically integrated into existing processes in the future. This applies in particular to operational work. There are plans to take climate and sustainability aspects more into account in the selection of regional and bilateral projects in the future and to increasingly integrate these factors in relevant education and training activities of the Bundeswehr Verification Centre.



Figure 50: Destroying ammunition in Mali; Source: Bundeswehr/Sebastian Nothing

Humanitarian Assistance and Disaster Relief at Home and Abroad

“In accordance with the principle of subsidiarity and in compliance with the Oslo Guidelines of the United Nations, humanitarian assistance and disaster relief are provided as required at home and abroad. This will create a sustainable contribution to peace and security.”

The Bundeswehr provides humanitarian assistance and disaster relief in accordance with the principle of subsidiarity. Only if a state, a federal state or an organisation concerned cannot meet their responsibility of protecting their population based on their own structures and possibilities and therefore requests assistance from other states or (multinational) organisations the Bundeswehr can provide assistance, too. The Bundeswehr’s assistance activities support people who are in danger or already experience an acute emergency situation as a result of natural disasters, epidemics or conflicts. These measures contribute to the management of humanitarian challenges and disasters at home and abroad and thus to the stabilisation of peace and security.

Since the Bundeswehr is not an actor in humanitarian aid and has no responsibilities in disaster control, the Bundeswehr does not plan any concrete measures in this area for the future. Examples of Bundeswehr assistance activities in Germany and abroad in the recent past are the support the German military provided in the context of COVID-19 pandemic management, the fight against forest fires in the summer of 2022 and disaster control in Ukraine.



Figure 51: Training of local auxiliary personnel by Bundeswehr soldiers during the Ebola relief mission UNMEER in Liberia (West Africa) in December 2014; Source: Press and information Centre of the Bundeswehr Medical Service

Challenges and Success Factors

The challenges and success factors vary a lot between the individual segments and are only partly redundant. A success factor that is valid for all segments is the systematic consideration of sustainability aspects in all measures taken and in all processes.

Challenges in the segment “Enable and Enhance Initiative of the Federal Government” are mainly the continuous availability of sufficient funds for relevant measures, the generation of „local ownership“ of the partners and the establishment of „capability clusters“, which are intended to secure the security sectors in the long term. Important success factors are close coordination with the respective partner and project support by local advisors.

The segment „Training and Exercise Activities for National and Collective Defence“ requires a high degree of coordination regarding time schedules and contents as well as the necessary resources.

One of the key challenges of the „International Crisis Prevention and Crisis Management“ segment consists in the fact that the AOR FMoD is only one of many national and international actors and that this segment includes a large variety of topics. Consequently, the impact on sustainability in mission countries beyond the Bundeswehr’s own commitment, whose content is illustrated in other segments, is limited. Another challenge is the fact the implications climate change has on the conflict and security environment have not yet been sufficiently researched and that there is still a need for optimisation in terms of access to and integration of the results of scientific climate impact analyses.

An important success factor in the segment „Arms Control and Confidence- and Security Building Measures“ is greater awareness of the consequences of climate change on politico-

military security. It is challenging, too, that Russia’s unlawful war of aggression against Ukraine has severely limited regular work of the Organisation for Security and Co-operation in Europe. It is not foreseeable for the time being whether and when a substantial discussion on climate and security can be initiated within the framework of the Forum for Security Co-operation of the Organisation for Security and Co-operation in Europe. In addition, many, but not all, nations share the objective to embed climate and security in the politico-military dimension.

As far as „Humanitarian Assistance and Disaster Relief at Home and Abroad“ are concerned, the Bundeswehr neither acts as an independent actor and nor has any primary responsibilities, but makes its contribution. This contribution is made on a subsidiary basis, relying on the existing structures of the Bundeswehr. Assistance may be provided by the Bundeswehr if this does not pose a serious threat to accomplishing its own tasks, i.e. if the Bundeswehr can continue to fulfil Alliance commitments and/or other constitutional tasks of the armed forces.

Sustainability targets discussed in this chapter



5.8 Society

Introduction and Provisions

Many goals can only be achieved together – this is particularly true of the Sustainable Development Goals. Internal and external stakeholders and target groups must be involved in national and international developments, impacts and content in order to achieve social interest and understanding for sustainable behaviour. This is essential for achieving these objectives. Sustainable Development Goal 17 in particular stands for this. – striving for „Partnerships for the Goals“.

For the AOR FMoD, working together to achieve objectives is linked to the topic of education, for example when personnel need to be sensitised to sustainability-related topics or when the necessary knowledge base must first be created for joint work. This is reflected in Sustainable Development Goal 4, „Quality Education“.

The issue of sustainability receives great attention in society. Awareness of the actual and potential effects of state actors on the achievement of sustainability targets has grown. This also applies to the AOR FMoD, which has led to an increased need for communication. The present field of action „Society“ addresses this need with the segments „Security Policy Dialogues with a Particular Focus on Sustainability and Climate Policy“ and „Information and Public Relations Work on Sustainability and Climate Action“. For the consistent and reliable application of objectives and rules, the „Compliance and Corruption Prevention“ task spectrum also exists as a socially relevant topic. In order to avoid damage to the reputation of the AOR FMoD, compliance as a higher-level principle, including ethical principles, is particularly concerned with legal certainty in adhering to all rules issued by external and internal regulators. As a component of compliance, corruption prevention ensures adherence to corruption regulations

(resilience) against manipulative internal and external influences.

The great relevance of these topics is also reflected in existing provisions, including the 2030 Agenda, the German Sustainable Development Strategy and the Programme of Sustainability Measures as well as the Directive concerning the Prevention of Corruption in the Federal Administration issued by the Federal Ministry of the Interior and Community.

Facts and Figures

- As a security policy partner in Europe and in the world, Germany can contribute and promote important ideas and guidelines for sustainable development through its participation in national and international alliances (e.g. the European Union or NATO) and through public relations work.
- Since 2014, the Federal Ministry of Defence has published its sustainability reports in a two-year cycle.
- Compliance and corruption prevention will increase internal awareness of the importance of the subject in the AOR FMoD.

Segments in the Field of Action

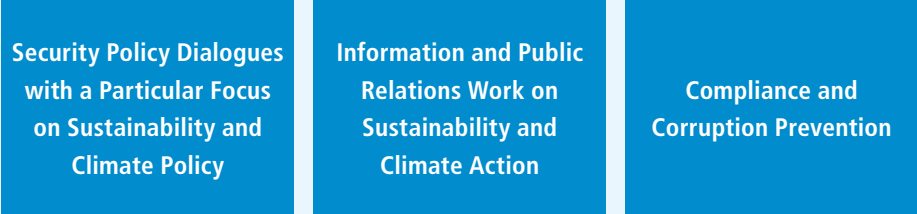


Figure 52: Overview of the segments in the field of action "Society"



Figure 53: Federal forestry information event; Source: Bundeswehr/Marcus Rott

Objectives and Measures per Segment

Security Policy Dialogues with a Particular Focus on Sustainability and Climate Policy

„The potentials of digitalisation for greater sustainability are used in the dialogue formats of the AOR FMoD. At the same time, an extended range of topics will also increase the reach of core security policy messages in society.“

Objectives of this segment are the communication of core messages and the discussion of target conflicts within the scope of events in face-to-face, online and hybrid formats. A concrete measure taken for this purpose is the strategic planning of events while taking

into account the Programme of Sustainability Measures. In addition, the AOR FMoD is developing its own provisions in the field of sustainability, e.g. for an increased range of hybrid and online events in order to reduce greenhouse gas emissions.

Information and Public Relations Work on Sustainability and Climate Action

„The members of the AOR FMoD and the public know about the measures taken to promote sustainable development in the AOR FMoD“.

The aim of the segment is to inform employees and the public about the activities of the AOR to implement the 2030 Agenda, the German Sustainable Development Strategy and the Programme of Sustainability Measures.

An important measure for this is the publication of the sustainability report every two years. It describes the development throughout the entire AOR FMoD in retrospect and is available to the public in addition to internal technical reports. Content-related requirements for these reports are provided by the German Sustainable Development Strategy 2021:

To boost the implementation of the GSDS and the achievement of the SDGs, all ministries set out how all of the component parts of their ministry policies help to further the implementation of the German Sustainable Development Strategy and the 2030 Agenda for Sustainable Development. This is done once per legislative term at a meeting of the State Secretaries' Committee on Sustainable Development.⁴⁸

When preparing the sustainability report, it is important that current incidents and new provisions are included in the respective concept drafts at an early stage. In addition, early information workshops with the contributing units are of major importance.



Figure 54: Sustainability Report 2022 of the Federal Ministry of Defence and the Bundeswehr; Source: Federal Office of Bundeswehr Infrastructure, Environmental Protection and Services (FOBwIEPS), Section DL I 4, FOBwIEPS Central Print Office

⁴⁸ German Sustainable Development Strategy 2021: 82.

Compliance and Corruption Prevention

„Awareness of the risks of corruption in the public sector has been created, sharpened, deepened and further developed. All members of the AOR FMoD perceive compliance and corruption prevention as part of the strategy to strengthen trust in the rule of law and integrate this into their actions.“

Corruption prevention in public administration serves to strengthen the reputation of public action. The focus of all actions and their aims is on preventing compliance violations and considerably strengthening corruption prevention in the AOR FMoD. Measures that have already been taken are continuously revised and adapted, and new objectives are set in order to contribute to the Federal Government's provisions.

Teaching relevant contents in initial and advanced training as well as an annual briefing of all personnel are suitable and tried-and-tested measures to continuously raise awareness of the importance and current contents of corruption prevention among all members of the AOR FMoD. Specific provisions for corruption prevention for the AOR FMoD have been derived from a policy document published by the Federal Ministry of the Interior and Community, the „Directive concerning the Prevention of Corruption in the Federal Administration“, and they are contained in particular in internal regulations for the implementation of the above-mentioned directive and in regulations on the acceptance of benefits.



Figure 55: Compass; Source: Directorate-General for Legal Affairs, III 1, Federal Ministry of Defence

Practical Example

In addition to the aim of providing more information on sustainability-related topics, the „Security Policy Dialogues with a Particular Focus on Sustainability and Climate Policy“ segment currently focuses on the development and implementation of a new, comprehensive training concept for initial and advanced training. The concept intends to make more use of digital means in the future in order to reduce required resources and personnel as well as the resulting costs and duty trips, thus achieving a further positive effect in the field of sustainability.

Challenges and Success Factors

One of the major challenges associated with compliance and corruption prevention is to make all civilian and military personnel willing to deal with this subject permanently and in a targeted manner. It is necessary to increase awareness that the preventive recognition of potential risks will create added value. Therefore, attractive, modern training and awareness-raising measures are important elements of action to achieve this goal. This means that a high success rate can be expected in the early prevention of a large number of compliance and corruption violations.

A further challenge is to ensure credible communication through appropriate transparency, which is also an important success factor. This means that, among other things, potentially conflicting objectives between sustainability and security policy requirements must be clearly communicated.

Sustainability targets discussed in this chapter



5.9 Digital Transformation and Innovation

Introduction and Provisions

Digital transformation is one of the central challenges for the AOR FMoD, too. Digitalisation and the extensive use of information and communication technologies are accompanied by profound change. They form an essential basis of our modern knowledge and information society. The field of action "Digital Transformation and Innovation" focuses on provisions, objectives and activities associated with sustainable, i.e. environmentally friendly, socially balanced and economically efficient digitalisation and innovation promotion.

Due to the finite nature of resources, the potentials of digitalisation must be used for sustainable development. This results in requirements for the sustainable procurement of IT products and services as well as the safe (i.e. robust and resilient), energy-efficient operation of corresponding infrastructures as resource requirements have become an important ecological factor in the information age. The transformation of administrative work towards comprehensive electronic communication and collaboration creates opportunities for effectiveness and efficiency and thus also for sustainable development. So far, the AOR FMoD has created opportunities for promoting innovation mainly in the fields of cyber security and IT. Further national tools for promoting innovation need to be established, which can then also be used to promote ideas with potential for sustainability.

The field of action contributes to the achievement of Sustainable Development Goal 9, which aims at building resilient and sustainable infrastructures, promoting sustainable and inclusive industrialisation and supporting innovations for sustainability. An important point of reference for this aim is the infrastructure in the field of information and communication technologies.

Requirements and provisions that shape the objectives of this field of action are mainly the result of the German Sustainable Development Strategy and the requirement for climate-neutral organisation of the Federal Administration by 2030 as well as the Programme of Sustainability Measures, e.g. in order to avoid duty trips by means of video conferences. The Green IT Initiative of the Federal Government results in provisions in the area of information and communication technologies and IT procurement. In addition, there are other higher-level guidelines for electronic administration and information security as well as internal Bundeswehr provisions on innovation management.

In order to fulfil the provisions, the field of action "Digital Transformation and Innovation" focuses its sustainability efforts on sustainability targets in a total of five segments.

Facts and Figures

- The focus of the field of action is on the Bundeswehr IT system and thus on all information and communication technologies in the AOR FMoD. As the orientation of the IT service provider BWI GmbH is that of an in-house company, the former separation between the so-called „green IT“ operated by the military and the so-called „white IT“ operated by BWI GmbH is increasingly being given up. Instead, the Bundeswehr's IT system, which comprises all information and communication technologies of the Bundeswehr, is operated jointly by BWI GmbH and the IT management organisations of the Bundeswehr on a standardised digitalisation platform. The transfer of so-called stand-alone systems to the IT system of the Bundeswehr and the harmonisation of „white IT“ and „green IT“ (applications) will reduce the number of workplace computers and thus resources.
- The IT architecture of the Bundeswehr comprises, among other things, approximately 180,000 IT workstations, data centres and

12,000 kilometres of voice and data communication lines.

- The Bundeswehr has 176,000 IT workstations with commercially available hardware, such as computers and notebooks, as well as 19,000 smartphones and tablets.
- In general, all processes and administrative procedures in the AOR FMoD are affected by the shift towards electronic administrative work.
- The number of attacks on weak points of Bundeswehr IT systems has roughly doubled from 155,000 to 335,000 per year between the years 2017 and 2021. In the same period, the number of IT systems affected by malware has decreased by a factor of five from about 500 to approximately 100 per year.
- Innovation management is trained in various courses or modules, e.g. the National General/Admiral Staff Officer Course, seminars for senior officials and modules for planners in the Bundeswehr.

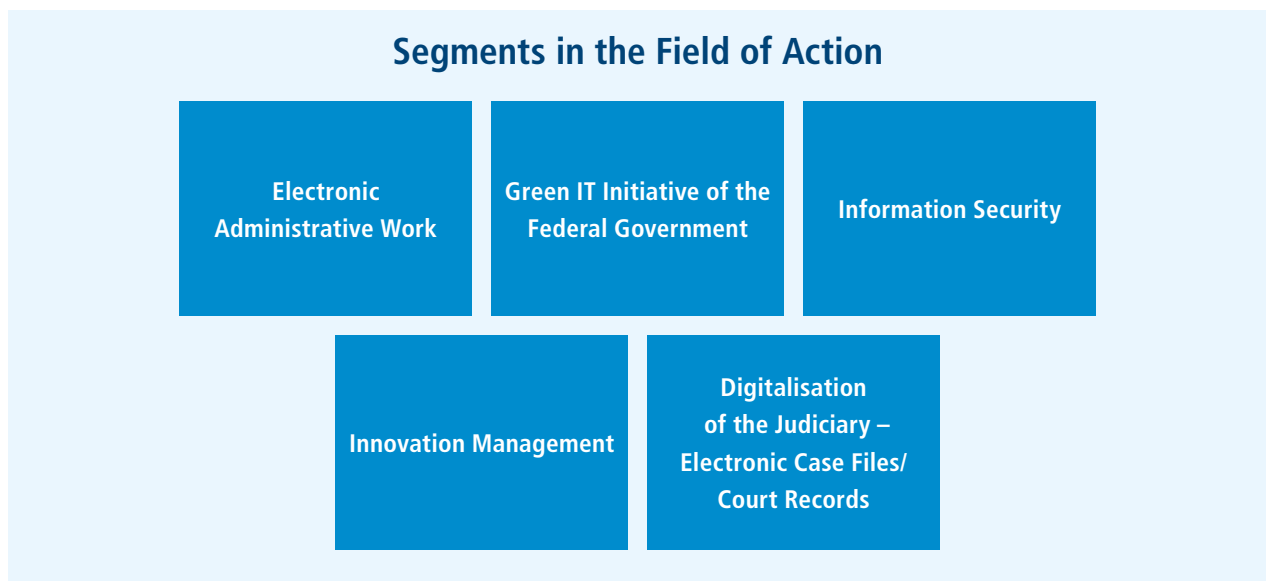


Figure 56: Overview of the segments in the field of action "Digital Transformation and Innovation"

Objectives and Measures per Segment

Electronic Administrative Work

„The potentials of digital transformation for greater sustainability are consistently exploited by comprehensive electronic administrative work in order to reduce the consumption of resources through modern collaborative and digital working methods.“

As a prerequisite for the comprehensive modernisation and digitalisation of staff and administrative activities, an IT infrastructure will be created that enables comprehensive, effective and efficient collaborative work and additionally contributes to sustainability. Thanks to the possibilities of technical flexibilisation and increasing agility in the working methods of daily work, capacities and resources that were previously used redundantly in administrative activities are used more efficiently.

As part of this process, systems with a focus on collaboration, workflow management, filing and administrative services are at the centre of attention and are increasingly being established in administrative work. In addition to supporting digital and virtual working methods, the focus is also shifting to the implementation of a mobile and digital workplace. Access to digital staff and administrative services and offerings as well as corresponding collaboration platforms will be created for as many members of the AOR FMoD as possible in the target state. Electronic support for processes and administrative procedures should be established with a maximum degree of continuity.

Electronic administrative work must meet modern organisational and technological requirements, but at the same time requires continuous optimisation of the underlying processes in order to be able to realise its full potential. At the same time, challenges in the

context of man, culture and technology are being considered.



Figure 57: Documents of the Bundeswehr School of Military Music in Hilden; Source: Bundeswehr/Tobias Koch

Green IT Initiative of the Federal Government

„As part of the Green IT Initiative of the Federal Government, a contribution has been made to reducing the energy consumption of information and communication technologies and sustainable IT procurement has been implemented.“

The Bundeswehr's contribution to the Green IT Initiative of the Federal Government and thus its potential contribution to ecological effects is particularly important due to the size of this organisation. In this context, the Green IT Initiative sets a common target of 350 gigawatt hours per year for all ministries of the Federal Government for energy consumption caused by IT operation. On the basis of the „Architectural Guideline“ and the „IT Procurement Strategy of the Federal Administration“, this Initiative defines requirements for sustainable IT procurement and assesses energy and resource efficiency in data processing centres according to the criteria of the Federal Government's "Blue Angel" ecolabel. The data obtained in this way show the operators potentials for savings. The increasing importance of climate action and environmental protection is reflected in the provisions of the Green IT Initiative and is continuously updated.

BWI GmbH plays a key role in the implementation throughout the AOR FMoD. It ensures low-energy operation of information and communication equipment, including data processing centres, taking into account the various requirements of security, energy efficiency and ergonomics. When procuring end devices, requirements such as minimum power consumption and the reduction of packaging material must be met. In addition, sustainability seals and/or eco-labels must be applied for information and communication equipment wherever possible. Further regulations exist for the re-use and marketing of waste equipment, the acquisition and collection of spare parts and recycling and disposal, which

are carried out by a certified service provider on behalf of BWI GmbH. The application of the „Blue Angel“ criteria will be implemented in the course of the planned establishment of a new and modern data processing centre network, taking into account potential security aspects.



Figure 58: Software Competence Centre;
Source: Bundeswehr/Martina Pump

Information Security

„The consumption of physical resources is minimised by ensuring information security in an optimum way in the AOR FMoD.“

Compliance with the basic values of confidentiality, availability and integrity is central to information security in the AOR FMoD. Information security in general, and especially in the area of the AOR FMoD, is constantly threatened by various influencing factors. If a threat finds a weak point, damage may occur that would jeopardise the basic values of Bundeswehr information security. In this context, it is not sufficient to look at normal routine operations for the Sustainability and Climate Action Strategy because restoring information security in particular would require a major effort with respect to personnel, materiel, energy and financial resources, and it is not possible to estimate potential savings due to damage prevention. Avoiding weak spots is particularly decisive for success. Considerably less funds may be required for preventive protective measures than for restoring information security after a cyberattack. On the other hand, the preventive protection of the IT systems of the Bundeswehr has a direct influence on their essential mission accomplishment. A plausible balance must therefore be achieved between the necessity of a backup data centre and the need to save energy. It must be noted that effective information security can prevent the release of sensitive data, the irreversible destruction of computers and systems and the decryption of data, the unintentional execution of an energy-intensive code or the illegal and wrongful use of the IT systems by attackers, e.g. to compute computationally intensive block chains for cryptocurrencies. In these cases, the result will also ensure information security and save resources in order to ensure sustainability. Both the Bundeswehr's IT operating and management

organisations (which are controlled by the major organisational element "Cyber and Information Domain Service" established in 2017) and BWI GmbH as the central IT service provider for the Bundeswehr⁴⁹ are geared to ensuring the protection and operation of the Bundeswehr IT system in accordance with uniform and comparable standards. These are constantly being further developed and refined in order to prevent damage and reduce the effort required for damage repair.

The aspect of information security must be implemented across all projects and departments in accordance with uniform standards – on the basis of the existing information security organization and the document and regulatory landscape. Activities in this field will be further expanded by a digitalisation platform and an information security cluster. Standardisation and re-using solutions will further reduce risks while also saving resources by avoiding duplication of effort and by eliminating incompatibilities.

⁴⁹ See „Data and Facts“ on the field of action "Digital Transformation and Innovation".

Innovation Management

„The systematic collection of ideas, including those on climate and sustainability, and an increased consideration of climate and sustainability aspects in the assessment of ideas as part of innovation management in the AOR FMoD have been achieved.“

Aspects of sustainability must be taken into account across all processes in the Bundeswehr and must not be implemented in one process only.

Innovation management in the AOR FMoD promotes ideas that contribute to the future and capability development of the Bundeswehr. Further possibilities for promoting innovation must be developed and existing ones need to be exploited in order to help accelerate the translation of ideas into innovations.

The integration of sustainability aspects into innovation management is intended to contribute to energy management and to the use of „green energy“. Innovation management has taken up the topic of energy management in the form of a „future development subject“. The relevant aspects are also taken into account in the operationalisation of the (further) future development subjects.

In addition, the importance of climate neutrality and sustainability is also considered in the assessment and implementation of ideas. Innovation competitions can be used to exploit new ideas on the topics of sustainability and energy.



Figure 59: Special Operations Forces Command: Reactive firing training; Source: Bundeswehr/Special Operations Forces Command



Figure 60: Digitalisation in the Bundeswehr; Source: Bundeswehr/Markus Dittrich

Digitalisation of the Judiciary – Introduction of Electronic Case Files and Court Records

„The shift to electronic records management by the offices of the disciplinary attorneys for the Armed Forces, the Office of the Disciplinary Judge Advocate General for the Bundeswehr and the disciplinary and complaints courts will lead to an increase in efficiency and to resource conservation.“

The law on the introduction of electronic files in the judiciary and on the further promotion of electronic legal transactions obliges the offices of the disciplinary attorneys for the Armed Forces, the Office of the Disciplinary Judge Advocate General for the Bundeswehr and the disciplinary and complaints courts to implement electronic records management from

1 January 2026. This has enormous savings potential for paper as a resource. The paper-based management of case files and court records will be replaced by an electronic records management solution, and synergy effects will be achieved through single-medium and seamless cooperation between several processing instances up to the Federal Administrative Court.

Challenges and Success Factors

A particular challenge in this field of action, too, is the competition between sustainability requirements and the fulfilment of military requirements or operationally-relevant and security-related requirements which together make up the military mission). Nevertheless, there is scope for greater consideration of sustainability-related aspects, e.g. in innovation management and this must increasingly be utilised in order to fulfil the relevant requirements and achieve objectives.

Another area of tension results from the fact that especially for sustainable procurement and for innovation promotion, additional financial resources must be provided and that displacement effects may be caused. Sufficient financial resources are an essential success factor for all activities.

Due to the cross-sectional character of the guiding principle of sustainability, with the aim of sustainable digitalisation in the AOR FMoD, a large number of different functional areas with a high degree of diversification are equally affected. As a result, many different processes must be thoroughly integrated in planning and implementation in order to achieve a lasting, sustainable transformation of the AOR FMoD.

Sustainability targets discussed in this chapter



6. Implementation

6.1 Coordination and Management

Coordination as well as Roles and Tasks

All ministries of the Federal Government orient their activities as well as their administrative practice towards sustainable development on the basis of the German Sustainable Development Strategy and the corresponding policy decision of the Federal Cabinet of 30 November 2022. The Ministry Coordinators for sustainable development are to work towards this goal, and they are the „central points of contact for questions relating to sustainable development“⁵⁰. In the Federal Ministry of Defence, the Commissioner for Sustainable Development assumes the role of the **Ministry Coordinator**⁵¹. He/she is the central institution for sustainability in the AOR FMoD and has the lead responsibility for coordinating internal and external communication measures with a view to creating comprehensive awareness in the field of sustainability.

The head of the subdivision for infrastructure, environmental protection and services, accompanied by the Commissioner for Sustainable Development, represents the Federal Ministry of Defence in the working group of the heads of subdivisions for sustainable development at the Federal Chancellery. Figure 61 shows the organisational allocation of all roles and tasks (governance model) for the management of all sustainability-related subjects.

The branch „Environmental Protection, Supervision under Public Law, Technical Environmental Protection, **Coordination of Sustainability and Climate Action**“ at the Federal Ministry of Defence is in charge, among other things, for coordinating the implementation of the

Programme of Sustainability Measures and the Sustainability and Climate Action Strategy as well as for monitoring them.

Sustainability coordinators at directorate-general and staff element level⁵² have been appointed to the directorates-general and staff elements of the Federal Ministry of Defence to ensure the subject-related coordination of sustainability implementation at the specialist branch level. These coordinators provide intensive support in terms of their effect in the functional area (via the points of contact and the specialist branches). The sustainability coordinators at directorate-general and staff element level at the Federal Ministry of Defence (coordinators) meet at the **sustainability coordination round table** on a regular basis⁵³.

Below the level of the coordinators, in the individual segments of the Sustainability and Climate Action Strategy, specialist branches act as points of contact to ensure coordinated implementation and/or processing of measures in the segments.

In accordance with the decentralised approach, the concrete implementation and control itself are carried out by the respective specialist branches responsible for the measures⁵⁴. This Strategy has provided a structured description of the contents of the topics „sustainability“ and „climate action“. Their organisational allocation is in line with the technical responsibilities.

50 Cf. 2021 German Sustainable Development Strategy: 378.

51 Cf. German Sustainable Development Strategy 2021: 90 and 378 for the tasks of the FMoD coordinator for sustainable development.

52 Cf. State Secretary Hoofe, paper on the appointment of sustainability coordinators at the directorate-general/staff element levels at the FMoD, dated 2 June 2021

53 Cf. Chapter 6.2.

54 In accordance with §7 of the Joint Rules of Procedure of the Federal Ministries

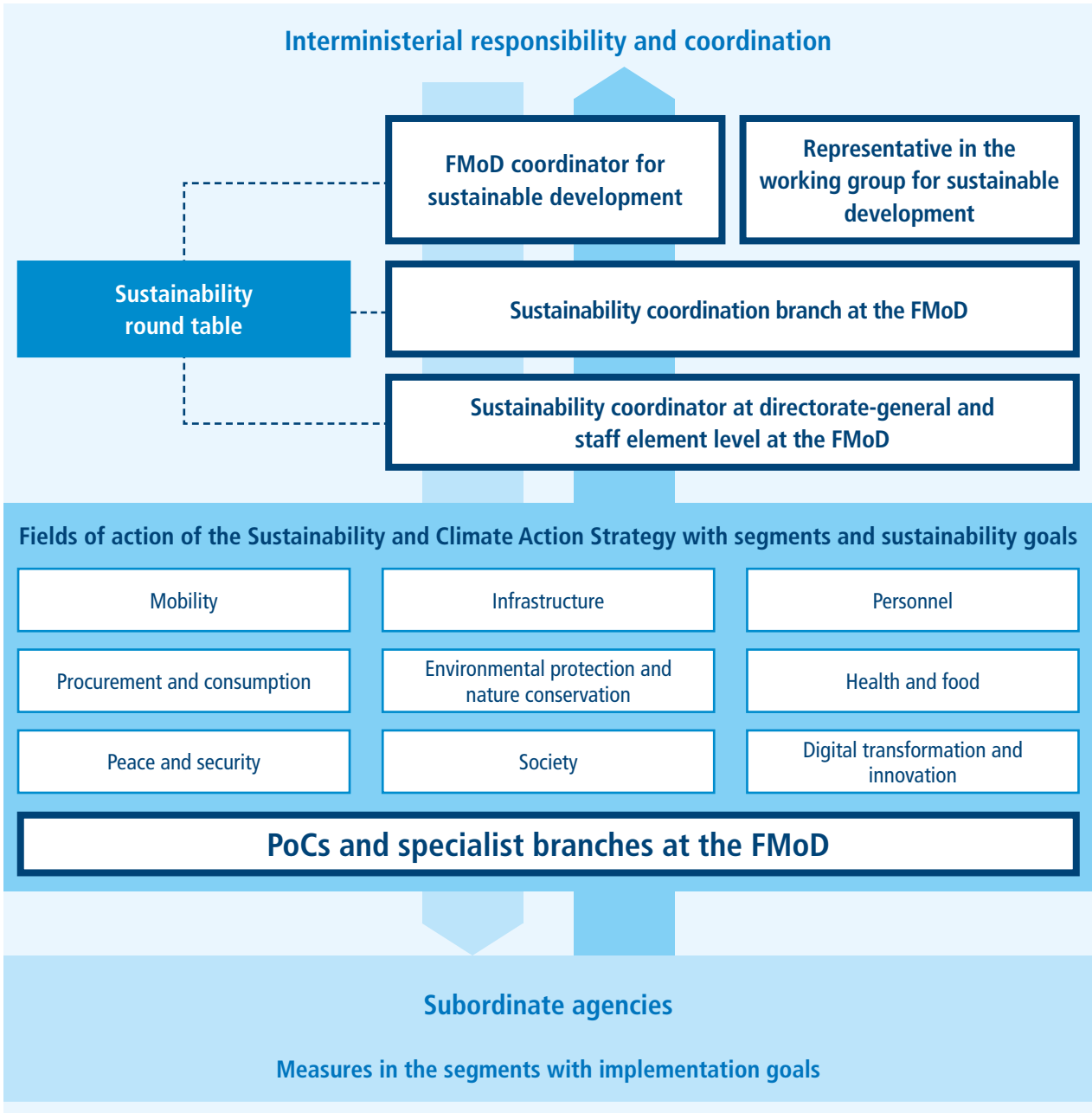


Figure 61: Internal governance model of the Federal Ministry of Defence

The specialist branches are thus responsible for the implementation of the measures in their area of expertise in accordance with the implementation goals, and they will, if necessary, involve their respective subordinate areas.

Accordingly, the Sustainability and Climate Action strategy is implemented and maintained in a decentralised manner along functional responsibilities. This decentralised approach establishes sustainability as a comprehensive principle of action throughout the AOR FMoD. It is the basis for a balanced application of this principle in all specialist areas and in almost all areas of the ministry.

Management

Achieving the objectives of the Sustainability and Climate Action Strategy is of overarching importance for the entire AOR FMoD and will in the future have an impact on many fields of action of the strategic target system of the Executive Group of the Federal Ministry of Defence.⁵⁵ Sustainability will thus be reflected in the future system of strategic objectives of the Federal Ministry of Defence's Executive Group. The responsibility for compliance with the sustainability development goals⁵⁶ as well as technical supervision of the implementation of measures lies with the competent specialist branches at the Federal Ministry of Defence.

To ensure the necessary control in accordance with the criteria of the sustainability targets, these specialist branches, or the competent subordinate agencies tasked by or in coordination with the specialist branches, must set implementation objectives for all measures in the segments of the Sustainability and Climate Action Strategy.

These objectives are geared to legal and other provisions such as federal government programmes and strategies. Where appropriate and useful, suitable indicators can support the personnel in charge of the measures to keep track of and continuously monitor these objectives.

Measures in the fields of sustainability and climate action which are of particularly relevance to the head of ministry or a major organisational element may become the subject of overall strategic management by the AOR FMoD and may be included in the relevant target agreements with the directorates-general and staffs of the ministry. Tracking of the target achievement in the context of the Sustainability and Climate Action Strategy envisages compatibility with the target system of the Federal Ministry of Defence's Executive Group in the future.

⁵⁵ The Ministry's Budget and Controlling Directorate is responsible for central controlling and for supporting the Federal Ministry of Defence's Executive Group in defining and operationalising strategic objectives and in assessing the success of the latter. This also includes responsibility for the strategic target system and the overall strategic management of the FMoD as well as, if necessary, the conclusion of target agreements with the ministerial directorates-general and staffs.

⁵⁶ Cf. Chapter 5.1 et seq. for the sustainability targets in the individual segments of the fields of action.

6.2 Coordination Tools

Various coordination tools are available to implement the strategy: The sustainability coordination round tables which take place at the Federal Ministry of Defence on a regular basis, an IT-based collaboration platform and regular reports.

Sustainability Round Table

The sustainability coordination round table ensures the flow of information between the Commissioner for Sustainable Development and/or the coordinating branch for sustainability and the coordinators of the directorates-generals and staffs at the Federal Ministry of Defence. Its aim is exchange, networking and content development of sustainable development. The sustainability coordination round tables are regularly used for subject-related further training.

This round table generally takes place at intervals in line with the meetings of the working group of the heads of subdivisions for sustainable development at the Federal Chancellery, so that the coordinators can be informed about the results of this working group and the state secretary committee for sustainable development in a timely manner.

The coordinators are responsible for forwarding information from the sustainability round table to the heads of the directorates-general or staffs and to further specialist branches.

IT-based Collaboration Platform

Another instrument for coordinating the Sustainability and Climate Action Strategy is an IT-based collaboration platform with different access areas for all members of the AOR FMoD. The structure of the strategy can also be found on this platform, which contributes to the rapid availability of relevant information.

On the one hand, the IT-based collaboration platform is used to collect data on the individual fields of action, segments and implementation objectives. This includes, among other things, relevant requirements and provisions, indicators, reporting obligations and bodies. On the other hand, progress in achieving the objectives will also be recorded via the platform in the future.

Reports

The Federal Ministry of Defence provides information on the progress of its sustainability and climate protection activities as part of external reports. Most of these reports, such as the equality report, are prepared by the competent specialist branches.

The „Environmental Protection, Supervision under Public Law, Technical Environmental Protection, Coordination of Sustainability and Climate Action“ branch coordinates the preparation of the sustainability report of the Federal Ministry of Defence and the Bundeswehr. The sustainability report is currently published every other year.

It reflects the progress of the implementation of sustainability activities. The relevant contributions are prepared by the specialist branches of the Federal Ministry of Defence.

7. Next Steps

The FMoD's first Sustainability and Climate Action Strategy provides a systematic overview of existing activities and structures in the field of sustainable development and combines them. With a view to the future, the Strategy sets the necessary framework for sustainability and climate action in the AOR FMoD and highlights areas of action that need to be addressed systematically, taking into account risks and opportunities.

At the same time, internal and external developments are to be followed closely in order to identify a possible need for further action.

This Strategy understands itself as an overarching strategy, which means that the individual bodies and/or fields of action/segments use it as a basis to prepare or adapt **conceptual strategies, concepts, guidelines or corresponding directives**. In these documents, ways of gradually achieving the implementation objectives mentioned in the Strategy must be identified and detailed. Concrete approaches such as strategies for more efficiency, sufficiency and consistency⁵⁷ must be included. In order to be measurable, the implementation objectives – where not yet possible – must be defined more precisely in terms of time and content (SMART principle⁵⁸). In view of limited resources, it is also necessary to classify them in terms of their contribution to effectiveness, urgency and/or other evaluation criteria.

The conceptual strategies, concepts, guidelines and corresponding directives will also provide an opportunity to incorporate further developments in the field of sustainability. These are e.g.

- the further development of the German Sustainability Strategy and the Programme of Sustainability Measures from 2024 onwards, which may involve an extension of the implementation objectives;
- the national and international effects of the "Zeitenwende", or turning point – triggered by Russia's unlawful war of aggression against Ukraine – which has special and varied effects on the Federal Ministry of Defence, e.g. the realisation of the Bundeswehr Special Fund and an even greater focus on national and collective defence, as well as the resulting increased demands with respect to materiel, personnel and capability-relevant infrastructure projects (maintenance and build-up).

Actual effects of sustainable development are generated by the **successive implementation of the optimisation measures newly identified or already being implemented** in Chapter 5, i.e. in the nine fields of action. Initial positive examples are available. For example, a „Guideline on sustainable procurement“ was developed and put into effect. A "Guide on sustainable procurement" was prepared and published to further support the actors concerned.

⁵⁷ Efficiency (in the sense of resource reduction), sufficiency (in the sense of frugality) and consistency (i.e. renewable energy, reusable material, circular economy).

⁵⁸ The SMART principle is used as a tool for the formulation of precise objectives. The acronym stands for specific, measurable, agreed, realistic and time-phased.

In addition, **tools supporting implementation** are helpful for the success of the complex activities. These include e.g.

- In order to highlight the scope of the content and the willingness to act, the implementation objectives identified in this Strategy **will be linked to the higher-level objectives of the AOR FMoD**. For this purpose, it is intended to establish sustainability and climate action objectives in the target system of the FMoD's Executive Group.
- Since sustainability is a highly cross-sectional and complex principle of action, its **integration in the structures and processes of the system** must be further **strengthened**. All in all, it is therefore necessary to consolidate and/or expand the roles in accordance with the internal governance model of the FMoD.
- Progress in the sustainable development of the AOR FMoD inevitably involves already known but presumably also hidden opportunities (e.g. increasing the attractiveness of the Bundeswehr as an employer) and risks (e.g. high initial resource requirement). It is crucial to not only identify them but to handle them in a proactive way, which in particular means avoiding or reducing risks (**risk management**).
- Professional coordination of implementation activities also requires an **efficient IT-based collaboration platform**. A corresponding paper is planned for the first half of 2024. Further potentials for the successful implementation of sustainability efforts may exist in the fields of communication, cultural development/participation, education, networking and stakeholder management, complexity management, technological and organisational innovations and an improved capacity for assessment and decision-making. These must be examined jointly with a view to an optimised approach.

8. Annex

8.1 List of Figures

Figure 1: Organisational structure	13	Figure 14: Building Energy Efficiency, Source: Federal Ministry of Defence	36
Figure 2: 17 Sustainable Development Goals; Source: United Nations, 2022.	15	Figure 15: Photovoltaic system on the roof of a Bundeswehr building; Source: Bundeswehr/Marcus Rott	38
Figure 3: Schematic structure of the Sustainability and Climate Action Strategy	18	Figure 16: Photovoltaic system in the Gao/Mali field camp; Source: Bundeswehr/Marc Vigansky	39
Figure 4: Sustainability fields of action (FoA)	19	Figure 17: Life Cycle Approach Building Information Modelling; Source: Federal Ministry of Defence	40
Figure 5: Overview of the segments in the field of action "Mobility"	23	Figure 18: A deep well on the premises of a Bundeswehr site; Source: Bundeswehr/Jenny Bartsch	41
Figure 6: Leopard 2A7V battle tank from 393 Tank Battalion; Source: Bundeswehr/Marc Dorow	24	Figure 19: Overview of the segments in the field of action "Personnel"	44
Figure 7: Refueling Sea Lynx shipboard helicopter Mk88A; Source: Bundeswehr/Marc Dorow	25	Figure 20: Compatibility of family life, nursing care and work; Source: Bundeswehr/Marc Dorow/Army press and information centre	45
Figure 8: Electric vehicle at a charging station in a Bundeswehr barracks; Source: BwFuhrparkService GmbH	26	Figure 21: Core dimensions of diversity; Source: Equal Opportunities and Diversity Staff Office in the Directorate-General for Personnel of the Federal Ministry of Defence	46
Figure 9: A sign with the inscription VTC room is attached to a door in the Federal Ministry of Defence in Berlin; Source: Bundeswehr/Jörg Volland	28	Figure 22: Soldier at her workplace; Source: Bundeswehr/Jonas Weber	47
Figure 10: TDY travellers; Source: Bundeswehr/Flickr	29	Figure 23: Gender equality; Source: Federal Ministry of Defence	48
Figure 11: Bundeswehr University Munich; Source: Bundeswehr/Stephan Ink	30	Figure 24: Overview of the segments in the field of action "Procurement and Consumption"	51
Figure 12: Mobility Management at the Federal Ministry of Defence; Source: Federal Environment Agency (amended)	31		
Figure 13: Overview of the segments in the field of action "Infrastructure"	35		

Figure 25: Sustainable procurement in the AOR FMoD; Source: Federal Office of Bundeswehr Equipment, Information Technology and In-Service Support	52	Figure 36: Structurally rich forest serving as a backdrop for Bundeswehr training; Source: Bundeswehr/Mario Bähr	65
Figure 26: Figure 26: Cooperation between members of the Bundeswehr. Source: Bundeswehr/Christian Zielonka	53	Figure 37: Tracked vehicle removing upgrowth; Source: Bundeswehr/Marcus Rott	66
Figure 27: Solar thermal containers from the energy camp for test purposes; Source: Bundeswehr	54	Figure 38: Process steps in the management cycle of the Bundeswehr environmental management system; Source: Bundeswehr, Federal Office of Bundeswehr Infrastructure, Environmental Protection and Services, Branch GS II 1	67
Figure 28: Paper with the eco-label "Blauer Engel" (Blue Angel); Source: Bundeswehr/PAO Aegean Sea	55	Figure 39: Professional disposal of personal protective equipment of a soldier; Source: Bundeswehr/Alexander Markus	68
Figure 29: Figure 29: New Bundeswehr furniture series; Source: Bundeswehr/Marcus Rott	56	Figure 40: Armoured howitzers 2000 perform the sharp firing during training and training exercise 2022 at the Bergen training area. Source: Bundeswehr/Mario Bähr	69
Figure 30: Solemn pledge ceremony at Bendlerblock to mark the day of the establishment of the Bundeswehr; Source: Bundeswehr/Torsten Kraatz	57	Figure 41: Overview of the segments in the field of action "Health and Food"	72
Figure 31: IT in the Bundeswehr; Source: Bundeswehr/Torsten Kraatz	58	Figure 42: Logo of occupational health management; Source: Directorate-General for Forces Policy, San 1 Branch, Federal Ministry of Defence	73
Figure 32: German Operational Sea Training 2017; Source: Bundeswehr/Sebastian Wilke	59	Figure 43: Scene during an image shoot on the subject of „Medical Service“; Source: Directorate-General for Forces Policy, San 1 Branch, Federal Ministry of Defence	74
Figure 33: Overview of the segments in the field of action "Environmental Protection and Nature Conservation"	62	Figure 44: Safety notice at the workplace; Source: Bundeswehr/Anne Weinrich	75
Figure 34: Groundwater treatment system; Source: Construction and real estate authority, Mecklenburg-Western Pomerania, Federal Construction Division	63	Figure 45: Pastry dish with sweet chestnuts; Source: Bundeswehr/Marcus Rott	76
Figure 35: Use of a double bubble curtain to reduce the acoustic pressure caused by underwater explosions; Source: Bundeswehr/Andrée Schlaeger	64	Figure 46: Overview of the segments in the field of action "Peace and Security"	79

Figure 47: Basic training in 232 Mountain Infantry Battalion; Source: Bundeswehr/Marc Dorow	80	Figure 57: Documents of the Bundeswehr School of Military Music in Hilden; Source: Bundeswehr/Tobias Koch	94
Figure 48: The Federal Government's Enable and Enhance Initiative provides supports in the form of equipment, training and infrastructure; Source: Bundeswehr/Jana Neumann	81	Figure 58: Software Competence Centre; Source: Bundeswehr/Martina Pump	95
Figure 49: Foot patrol in Gao, operation MINUSMA; Source: Bundeswehr/Christoph Liesmann	82	Figure 59: Special Operations Forces Command: Reactive firing training; Source: Bundeswehr/ Special Operations Forces Command	97
Figure 50: Destroying ammunition in Mali; Source: Bundeswehr/Sebastian Nothing	83	Figure 60: Digitalisation in the Bundeswehr; Source: Bundeswehr/Markus Dittrich	98
Figure 51: Training of local auxiliary personnel by Bundeswehr soldiers during the Ebola relief mission UNMEER in Liberia (West Africa) in December 2014; Source: Press and information Centre of the Bundeswehr Medical Service	84	Figure 61: Figure 61: Internal governance model of the Federal Ministry of Defence	101
Figure 52: Overview of the segments in the field of action "Society"	87		
Figure 53: Federal forestry information event; Source: Bundeswehr/Marcus Rott	88		
Figure 54: Sustainability Report 2022 of the Federal Ministry of Defence and the Bundeswehr; Source: Federal Office of Bundeswehr Infrastructure, Environmental Protection and Services (FOBwIEPS), Section DL I 4, FOBwIEPS Central Print Office	89		
Figure 55: CompassS Source: Directorate-General for Legal Affairs, III 1, Federal Ministry of Defence	90		
Figure 56: Overview of the segments in the field of action "Digital Transformation and Innovation"	93		

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