
Vital functions in society

What functional capabilities must society
maintain at all times?

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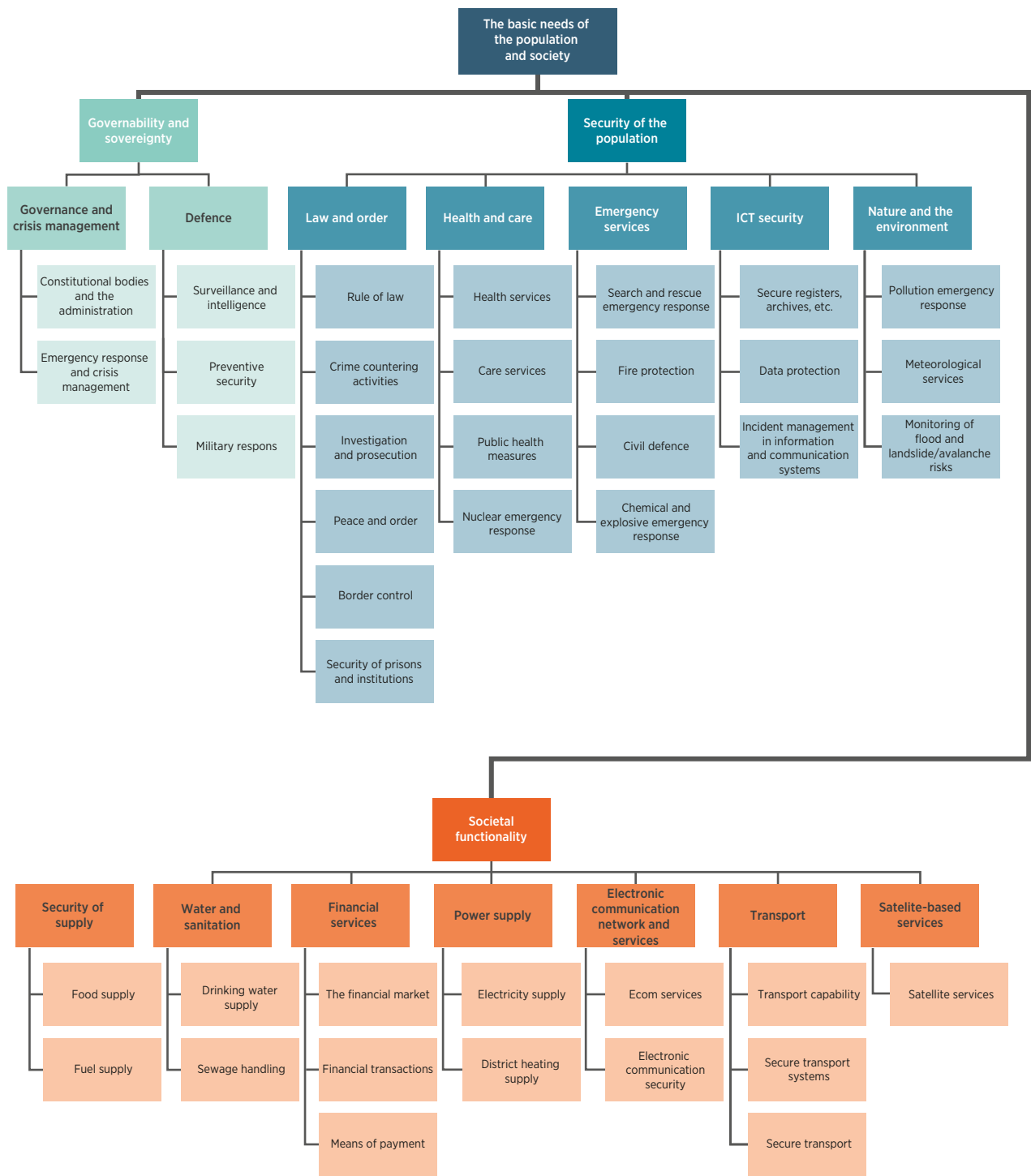


FIGURE 1. Summary of derivation of vital functions

CHAPTER

01

Introduction



INTRODUCTION

The Norwegian Directorate for Civil Protection published its report *Samfunnets kritiske funksjoner* [Vital functions in society] in December 2016. This is an abridged version designed for international readers.

Organisations responsible for functions vital to the security of society at a central, regional and local level – such as ministries, directorates and similar, county governors, municipalities and others – form the target group for the Norwegian report.

The purpose of this report is to identify which functions are critical and to define *which functional capacity* it is necessary to maintain at all times with the security of society in mind.

Clarification of this could provide a better foundation for targeted security work in society both across and within sectors.

1.1 BASIC PREMISES

The following criteria have been used as a basis:

- Restriction in terms of time: the term «vital societal function» is reserved for functions that society could not cope without for seven days or less without this threatening the safety and/or security of the population
- It is assumed that incidents will occur that involve a need for emergency response resources during the seven-day period

The methodical approach is **deductive**. The societal functions that are vital in order to meet the basic needs of the population and society are derived from a description of these needs. The societal functions are further specified by means of various «capabilities» with associated defined functional capabilities that indicate which services and supplies have to be maintained in order to meet needs.

1.2 BASIC NEEDS OF THE POPULATION AND SOCIETY

The term societal security is defined as such in the White Paper entitled *Risiko i et trygt samfunn* [Risk in a safe society] (2016-2017):

«Society's ability to protect itself against incidents that threaten basic values and functions and pose a risk to life and limb. Such incidents may be triggered by nature, involve manifestations of technical or human error or be deliberate actions.»

Protection of and – if necessary – rapid restoration of vital societal functions are key to societal resilience. Societal functions were defined as critical in the Blue Paper NOU 2006:6 if failure of these would have consequences that threaten the basic needs of the population and society. The basic needs were defined as «food, water, heat, security and suchlike».

The core of risk governance can be defined as **protection of the security and safety of the population.**

The term «security» does in this document involve *protection* against death, physical injury or illness, loss of democratic rights and personal integrity, and loss of or harm to the living environment, property or material assets.

The term «safety» involves access to necessary services and supplies that are so important that the absence of them could lead to serious unrest, concerns and problems on an everyday basis.

1.3

DERIVATION OF VITAL SOCIETAL FUNCTIONS

As a first step, the term vital societal function – as shown in Figure 2 – is broken down into three categories defined on the basis of **how** failure of these functions in society could affect the basic needs of society and the population:



FIGURE 2. Societal function categories

As a second step, these categories are broken down into vital societal functions. The vital societal functions are then described by means of capabilities, with associated defined critical functional capability.

The need for continuity in functions that are critical to societal security regardless of what happens, forms a starting point for the report. The report does not express an opinion on whether or not the functional capability of society in various respects is sufficient at present. Nor does this report touch upon the ability to deal with situations requiring far more than maintaining normal functional capability (e.g. war).

CHAPTER

02

Governability
and sovereignty



GOVERNABILITY AND SOVEREIGNTY

The category *Governability and sovereignty* includes functions that can be described as **basic framework conditions** to allow other societal functions to be safeguarded. Maintenance of territorial and governance-related integrity and ensuring continuity in governance activities and an ability to deal with extraordinary situations are key in this regard.

For the security of the population to be safeguarded, the authorities have to maintain control over Norwegian territory and be capable of operating independently of undue pressure from foreign states and other stakeholders: this is a basic prerequisite. Similarly fundamental is the fact that the authorities must have the ability to maintain normal governance activities and deal with extraordinary situations using the resources required.

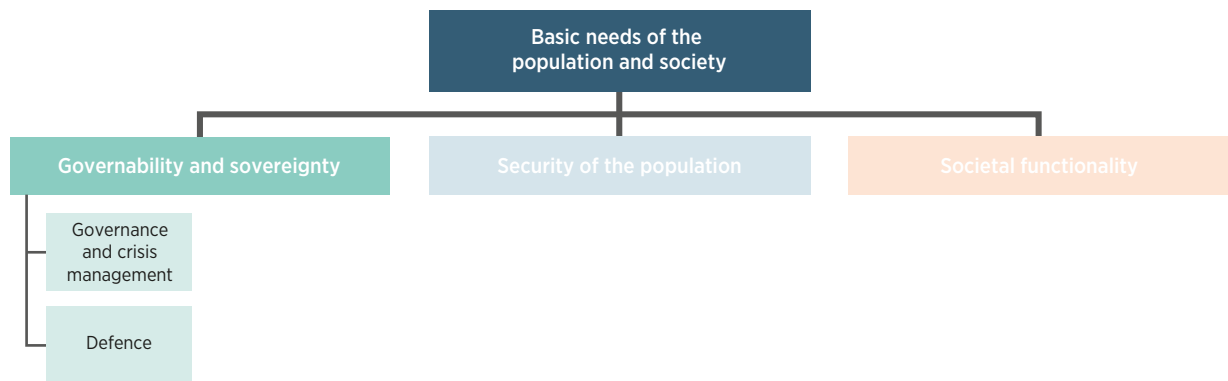


FIGURE 3. Societal functions in the Governability and sovereignty category

2.1 GOVERNANCE AND CRISIS MANAGEMENT

The societal function *Governance and crisis management* includes functions that are implemented by constitutional bodies such as the Government, Parliament and the Supreme Court, and by the public administration (in both the state and the municipal sector). This function includes an ability to maintain autonomy and necessary freedom of action, protection from physical and digital attacks and maintenance of operations under various forms of stress. Governance and leadership in extraordinary situations are also included.

The functional capability which must be maintained by society at all times within the field of *Governability and crisis management* is divided into the capabilities *Constitutional bodies and the administration* and *Emergency response and crisis management*.

2.1.1 CONSTITUTIONAL BODIES AND THE ADMINISTRATION

The ability to maintain constitutional functions and operations in priority parts of the administration.

This capability includes maintenance of constitutional bodies such as the Government, Parliament and the Supreme Court, as well as the parts of the administration that are necessary for daily governance and national security. This includes maintaining state autonomy and freedom of action as a prerequisite, including civil intelligence activities; see the description under the societal function Defence.

It includes both state and municipal administration. *Priority parts* means that administrative bodies have to define which tasks they must be capable of safeguarding at all times, and plan on the basis of this.

Safeguarding the security of personnel, information and objects pursuant to the Security Act is also included.

2.1.2 EMERGENCY RESPONSE AND CRISIS MANAGEMENT

The ability to maintain a national emergency response and deal with crises and other unwanted incidents.

Maintaining an emergency response in this respect means the ability of organisations to plan, allocate resources to and implement preplanned measures in the event of hazardous situations or accidents, with a view to managing or reducing harm. National emergency response is used here in the sense of emergency response at state level (ministries, directorates, county governors, etc.) and by municipal administrative bodies. It also includes emergency response from civilian Total defence stakeholders in peacetime and in war or war-like situations.

«Crisis» means an unwanted situation involving a high degree of uncertainty and potentially unacceptable consequences for individuals, organisations or states affected. «Crisis management» means all activities undertaken by an organisation to allow it – as far as possible – to manage and limit the immediate and long-term consequences of the situation occurring. The acute need for resources during a crisis cannot normally be covered by whatever the organisation normally has available. Therefore it may be necessary to re-prioritise, and possibly also to bring in extra resources.

Social emergency response is included in this. Alerting the population using siren systems and risk and crisis communication – i.e. the organisation's ability to provide the population with coordinated, targeted information prior to and in the event of crises – are also included.

2.2 DEFENCE

The societal function *Defence* is linked to the upholding of Norwegian independence and defence against foreign powers' potential interest in taking control of Norwegian territory or Norwegian resources or exerting pressure on Norwegian authorities with a view to reducing the freedom of action of the authorities. This societal function is largely linked to tasks in the defence sector but also includes civilian stakeholders, including activities linked to the surveillance of the activities of foreign powers in Norway.

The functional capability which must be maintained by society at all times in the field of *Defence* is described in terms of capabilities linked with surveillance and intelligence, prevention and military response.

2.2.1 SURVEILLANCE AND INTELLIGENCE

The ability to monitor foreign activity of significance to the sovereignty of the nation, as well as gathering, processing and analysing information about stakeholders that may pose a threat to Norwegian security interests.

This capability includes

- Surveillance of the activities of foreign powers (states, organisations) of significance for Norwegian sovereignty on land, at sea and in the air
- Surveillance of foreign activity threatening Norwegian security interests in the digital sphere
- Monitoring of the intelligence activities of foreign powers in Norway
- Foreign intelligence in order to gather, process and analyse information about foreign states, organisations or individuals and their intentions and capacity to pose a threat to national security interests

2.2.2 PREVENTIVE SECURITY

The ability to maintain preventive measures to eliminate or reduce risk of security-threatening activities.

This capability includes security of information, personnel and objects, and security governance and management with a view to counteracting intelligence, espionage and sabotage. The concept of information security includes the security of information systems and the security of the information in these systems, as well as information available in other formats.

The purpose of preventive security, on the basis of applicable laws and regulations, is to facilitate efficient counteraction of threats to the country's independence and safety and other vital national security interests.

2.2.3 MILITARY RESPONSE

The ability to avert and deal with episodes and crisis, and to defend Norwegian territory if necessary.

This capability includes:

- Averting and dealing with episodes and crises using national resources, including paving the way for the involvement of allies if necessary
- Maintenance of sovereignty and defence of Norwegian territory and the territory of alliance partners against serious threats, conspiracies and attacks within the scope of NATO's collective defences
- Participation in multinational crisis management, including peacekeeping operations
- Defence of digital resources
- Civilian society's support to the Armed Forces and allied military forces on Norwegian soil

CHAPTER

03

Security of the
population



SECURITY OF THE POPULATION

The category *Security of the population* is linked to protection against death, physical injury or illness, loss of democratic rights and personal integrity, and loss of or harm to the living environment, property or material assets. Failure of the societal functions included in this category would have a direct impact on society's ability to maintain the security of the population.

Given this background, five societal functions are defined within the scope of the category *Security of the population*: *Law and order*, *Health and care*, *Emergency services*, *ICT security in the civil sector* and *Nature and the environment*.

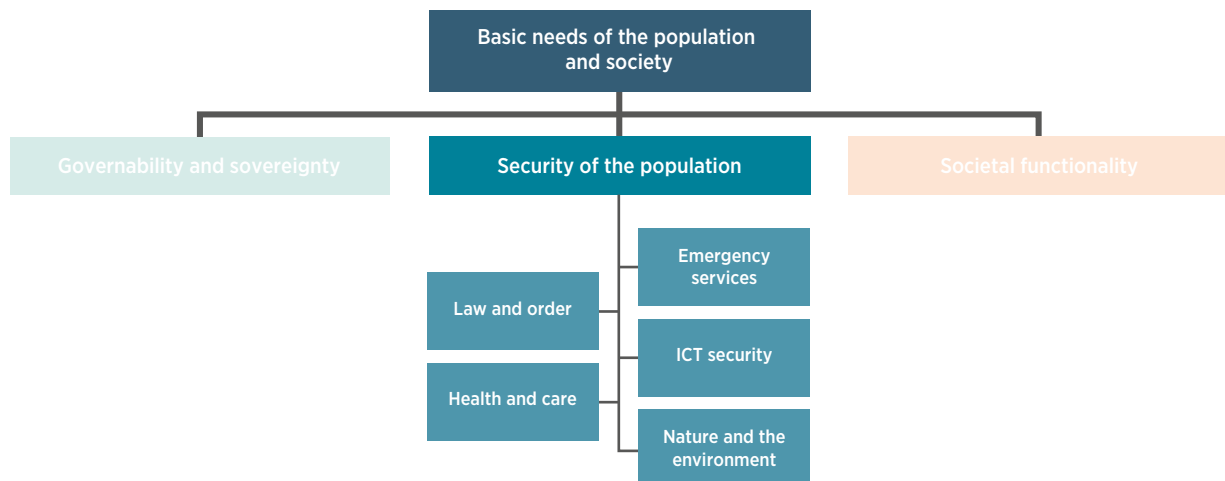


FIGURE 4. Societal functions in the category Security of the population

3.1 LAW AND ORDER

This function is based on the state's obligation to safeguard the rights and freedoms of its citizens and to protect them from physical abuses and abuses against property, the common good or legal activities. The functional capability which society must maintain at all times in respect of Law and order is described in capabilities linked with rule of law, crime countering activities, investigation and prosecution, peace and order, border control and security of prisons and institutions.

3.1.1 RULE OF LAW

The ability to protect against arbitrary, unauthorised or otherwise illegal infringements of the freedoms and rights of individuals.

As a basis, anything that does not breach applicable legal rules is legal. The courts play a crucial part in this capability. The police force, in its capacity as the power apparatus of the state, is also important; partly because the police have to observe human rights when exercising their power, and partly because the police must protect all legal activities in society and have enforcement authority. The prosecuting authorities are important to a corresponding extent, because they are responsible for bringing cases before the courts and for ensuring that investigations and any use of coercive measures take place in line with applicable legal principles.

3.1.2 CRIME COUNTERING ACTIVITIES

The ability to detect, avert and possibly stop serious criminal activities, including activities that may threaten the security of Norway or other countries.

The same amount of attention cannot be paid to all crimes (or public nuisances). Nevertheless, it must always be possible to deal with certain types of cases and situations if life and limb are under threat, for example. The ability to deal with these will be

critical from the perspective of societal security. To describe this, the word *serious* is linked with the descriptions of the capabilities. The responsibilities of the police cannot be regarded independently without taking into account the activities of the prosecuting authorities.

This capability also includes protection against criminal activities that may threaten the national security of Norway or other countries, including international cooperation for the prevention and combating of international terrorism.

3.1.3 INVESTIGATION AND PROSECUTION

The ability to pursue serious criminal offences in line with applicable regulations.

Crime countering activities cannot be regarded independently of investigation and prosecution. Investigation of crimes already committed may uncover other previous criminal activities and any planned future criminal activities. The police can use various coercive measures during investigation, including arrest and remanding people in custody. Remanding people in custody may be justified by the risk of re-offending, for example.

3.1.4 PEACE AND ORDER

The ability to intervene against behaviour that seriously disturbs the peace, prevents legal activities or threatens the general security of society.

The police must protect individuals, property and the common good and safeguard all legal activities. While the courts ultimately decide what is legal, the job of the police is to intervene in acute situations in which citizens' freedom and rights are under physical threat.

Terms such as «peace and order» or «order and security» are used to describe the job of the police linked with maintaining security for citizens, which falls outside the scope of fighting crime. The police must provide protection against anything that threatens public security in society, and may intervene with

SECURITY OF THE POPULATION

«public peace and order» in mind. This includes threatening behaviour in respect of the general public.

3.1.5 BORDER CONTROL

The ability to implement necessary border controls relating to individuals and goods.

This capability includes checking individuals at the external Schengen border, and at internal Schengen borders if these are introduced temporarily. Such implementation may take place if there is a serious threat to public order or internal security. This capability also includes the general checks on foreigners carried out by the police. It also includes customs control insofar as such controls are necessary for detecting or impeding criminal activities.

3.1.6 SECURITY OF PRISONS AND INSTITUTIONS

The ability to maintain levels of security that are satisfactory for society at prisons, detention centres and institutions that treat people who have been sentenced to undergo compulsory psychiatric treatment or compulsory care.

One of the purposes of prison sentences and detention is to protect society from new criminal activity. This is also the purpose of sentencing people who are not criminally accountable to undergo compulsory psychiatric treatment or compulsory care. Security at prisons, detention centres and institutions that treat or care for people who cannot be held criminally accountable is therefore of significance if it is to be possible to maintain the security of the population and society.

3.2

HEALTH AND CARE

The functional capability which must be maintained by society at all times in this field is described in capabilities linked with health services, care services, public health measures and nuclear emergency response.

3.2.1 HEALTH SERVICES

The ability to offer health services necessary in order to prevent death, permanent disability, serious injury or severe pain.

Health services include activities for the purposes of prevention, diagnosis, treatment, preservation of health or rehabilitation, and that are implemented by authorised health personnel. These activities will have varying degrees of criticality from a societal perspective, even though the majority of health services are of significance to the security of the population.

Health services that are critical in the sense that even short-term loss of them could threaten the basic needs of the population may include:

- Emergency medical services at and outside hospitals
- Investigation and treatment that cannot be postponed out of consideration for the patient
- Mental healthcare / psychiatric healthcare
- Maternity care
- Access to and provision of medications and medical consumables

3.2.2 CARE SERVICES

The ability to provide the necessary care to sick and needy people in the home and at institutions.

Care services include activities that aim to look after people who would otherwise be incapable of meeting their own needs due to illness or some other form of mental or physical impairment, for example.

3.2.3 PUBLIC HEALTH MEASURES

The ability to protect life and limb in the population by public health measures in the event of outbreak of illness and other incidents.

The aim of public health efforts is to protect life and limb in the population by preventing illness and injury. Public-health work includes communicable disease control, environmental health initiatives and food safety.

The primary elements of this capability are:

- Maintaining an overview of risk factors and reducing vulnerability to outbreaks and incidents
- Early detection of outbreaks/incidents, issuing alerts and identifying the type of pathogen/emission
- In the event of an outbreak/incident: establishing a view of the situation and assessing the consequences to the health of the population, providing information and implementing measures to reduce the consequences for the health of the population, clarifying the cause of the outbreak/emission and stopping it, carrying out public health surveys and follow-ups

3.2.4 NUCLEAR EMERGENCY RESPONSE

The ability to deal with nuclear incidents and ensure rapid implementation of measures to protect lives, health, the environment and other important community interests.

Nuclear incidents are defined as nuclear accidents and other incidents that may involve ionising radiation or the spread of radioactivity.

3.3

EMERGENCY SERVICES

The Search and rescue (SAR) services provide publicly organised immediate action involving a number of cooperating partners intended to rescue people from death or injury as a consequence of acute accidents or hazards, and that are not provided by bodies set up specifically for the purpose.

The societal function Emergency services includes protection of material assets along with reinforcement resources that can also be used in other contexts, as well as society's prevention of and emergency response to accidents linked with the handling of chemicals and explosives, in addition to the tasks formally linked with the SAR services.

Four capabilities are defined under the critical societal function Emergency services: *Search and rescue emergency response*, *Fire protection*, *Civil defence* and *Chemical and explosive emergency response*.

3.3.1 SEARCH AND RESCUE EMERGENCY RESPONSE

The ability to implement immediate action in order to rescue people from death or injury as a consequence of acute accidents or hazards.

The task of the search and rescue service is to increase the safety of life and limb for the population.

The emergency services are an integrated service, which means they are involved with all types of action linked with land, sea and air rescue operations. This means that the emergency services also include the work of the fire and rescue services for saving lives in connection with fires, road traffic accidents, etc.

SECURITY OF THE POPULATION

3.3.2 FIRE PROTECTION

The ability to avert material damage or limit the extent of damage in the event of accidents or hazards.

The main purpose of the fire and rescue service is to protect lives, health and the environment against fire and explosion, accidents involving hazardous substances and hazardous goods, and other acute accidents. Its primary purpose can be linked to the capability *Search and rescue emergency response*. However, the fire and rescue services must also have the ability to protect against and avert material damage or limit the extent of damage in the event of accidents.

3.3.3 CIVIL DEFENCE

The ability to provide the necessary reinforcements to the emergency response actors and others.

This capability includes the work of the Civil Defence in assisting the emergency response actors all over the country by providing personnel and equipment in order to prevent or limit damage.

The work of the Civil Defence is also linked with the Nuclear emergency response capability.

3.3.4 CHEMICAL AND EXPLOSIVE EMERGENCY RESPONSE

The ability to prevent and deal with incidents involving chemicals and explosives and to implement measures to protect lives, health, the environment and other important community interests.

This capability includes the prevention and handling of incidents involving chemicals and explosives.

Chemical incidents include the spread of chemicals (industrial chemicals, toxic smoke, chemical warfare agents, toxins, etc.) that may cause damage to health and/or damage to the environment and material assets, into the air, water, foods or soil. Explosive incidents include explosions caused by explosives, pyrotechnic items or home-made explosives, as well as highly flammable, pressurised or reactive substances.

Accidents involving toxic or flammable gases may have significant impact on lives, health and the economy. This capability also includes the ability to prevent, detect, avert and possibly reduce the consequences of incidents involving chemicals and explosives that may pose a threat to lives, health, the environment or material assets.

3.4

ICT SECURITY IN THE CIVIL SECTOR

The societal function *ICT security in the civil sector* includes the security of information critical to society which is stored in civilian databases, and also of systems, functions and services on which databases and registers are dependent in connection with the updating and/or publication of the information.

This function also includes the protection of analogue information in archives.

The functional capability in this field is described in three capabilities: *Secure registers, archives, etc.*, *Data protection* and *Incident management in information and communication systems*.

3.4.1 SECURE REGISTERS, ARCHIVES, ETC.

The ability to maintain sufficient accessibility, integrity and confidentiality in databases, systems, registers and archives necessary to maintain vital societal functions and/or the rights of individuals and companies.

This capability includes databases, systems, services, functions, registers and archives that are necessary for maintaining vital societal functions or that contain information on the rights and obligations of individuals or companies, including property, finance, concessions, certificates, etc.

«Sufficient» means that the security level is defined on the basis of a risk assessment which takes into account both the value of the information and the threats and hazards associated with the systems and the operation of the same.

3.4.2 DATA PROTECTION

The ability to ensure confidentiality and integrity of registers and archives containing confidential personal data.

This capability includes registers and archives that contain personal data that is to be considered confidential, irrespective of whether the registers themselves are to be considered critical to societal security.

Data protection is linked with the individual’s right to a private personal sphere which they themselves control and relates to the relationship between individuals and society. Individuals must feel secure that information of a personal nature is not accessible to unauthorised individuals.

3.4.3 INCIDENT MANAGEMENT IN INFORMATION AND COMMUNICATION SYSTEMS

The ability to detect information security incidents, limit damage and rapidly restore normal operation in registers and systems with vital societal functions and/or which include confidential personal data.

This capability is general in the sense that it includes all the systems included in the two previous capabilities described for this function. It is essential for every system owner to be capable of detecting unwanted incidents as soon as possible in order to limit damage and restore system functionality and security.

3.5

NATURE AND THE ENVIRONMENT

This societal function is linked to society's emergency response against acute contamination of the environment due to unwanted emissions of solids, liquids or gases to air, water or soil. It also includes meteorological services and monitoring and reporting of floods and landslides/avalanches.

Three capabilities are defined within this societal function: *Pollution emergency response*, *Meteorological services* and *Monitoring of flood and landslide/avalanche risks*.

3.5.1 POLLUTION EMERGENCY RESPONSE

The ability to prevent or limit harm to the environment as a consequence of acute pollution.

This capability includes private, municipal/inter-municipal and state emergency response to acute pollution on land and in Norwegian waters and on the Norwegian continental shelf, as well as the tugboat emergency response established along parts of the coast to ensure prevention of accidents involving ships at sea.

3.5.2 METEOROLOGICAL SERVICES

The ability to maintain priority meteorological services.

This capability includes the following services:

- Collection, processing and publication of meteorological data
- Preparation and distribution of alerts of significance to lives and safety
- Preparation of special meteorological calculations and services in connection with search and rescue operations, other critical operations and incidents posing a threat to safety
- Preparation and distribution of aeronautical meteorological data for civilian and military aviation

3.5.3 MONITORING OF FLOOD AND LANDSLIDE/AVALANCHE RISKS

The ability to maintain the necessary monitoring and reporting of flood and landslide/avalanche hazards.

This capability includes the established systems for monitoring and reporting of flooding in waterways of all sizes, as well as avalanches, slush avalanches, landslides and rock slides.

CHAPTER

04

Societal
functionality



SOCIETAL FUNCTIONALITY

The functions and capabilities included in this category have in common the fact that they are input factors for entities that are responsible for other critical functions and capabilities and for society in general, as well as serving the population directly. This category includes supplies and infrastructure-based services of various types.

The dependency of other societal functions on the functions in this category means that failure here will propagate in other parts of society, and as a result could also lead to reduced governability and impaired security for the population. For example, failure in the supply of electrical energy could have knock-on effects such as failure of water supply and sanitation, financial services, electronic communication, etc. and present the healthcare sector and central crisis management with significant challenges.

As well as causing failure in other societal functions, serious failure in the functions included in this category may trigger consequences in the form of unrest, concerns and problems on an everyday level, thereby affecting the safety of the population.

Of the physical items supplied to the population, food, water and fuel are particularly important. Within the individual sectors, there will also be other products that are important input factors and that must be safeguarded to ensure continuity of delivery from organisations with responsibility for vital societal functions.

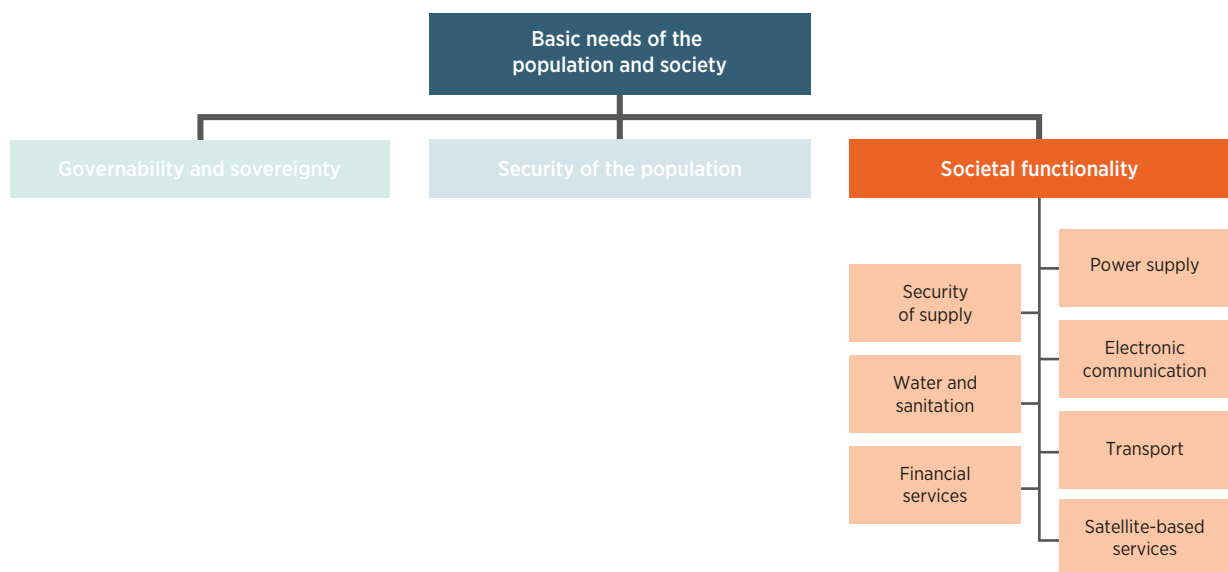


FIGURE 5. Societal functions in the category Societal functionality.

4.1

SECURITY OF SUPPLY

This societal function includes the supply of critical, necessary items to the population and organisations responsible for vital societal functions. The function includes the entire value chain, from production/import to delivery to end consumers. Logistics form a central element in the two capabilities *Food supply* and *Fuel supply*.

4.1.1 FOOD SUPPLY

The ability to guarantee the population's access to food so that an approximately normal diet can be maintained.

The ability to maintain this capability is linked with the production, import, distribution and sale of foods. Attempts must be made to maintain approximately normal performance in all parts of the value chain, even in the event of severe strain. At the same time, the systems must also be sufficiently flexible to allow readjustment if necessary. One measure of whether there is sufficient normality may be the absence of consumer's stockpiling from shops, or quite simply the fact that a normal range of products is available to consumers.

4.1.2 FUEL SUPPLY

The ability to ensure that organisations and private individuals have access to sufficient fuel.

This capability includes the supply of petroleum-based fuel and energy gases to organisations and consumers, adapted according to the market demand at any one time and irrespective of what may happen.

4.2

WATER AND SANITATION

Two capabilities are defined within the societal function *Water and sanitation: Drinking water supply* and *Sewage handling*.

4.2.1 DRINKING WATER SUPPLY

The ability to supply the population and organisations with vital societal functions with sufficient drinking water.

«Sufficient» normally means that the water supply should cover the prevailing demands from households and industry at all times. The water supply authorities must also have an emergency response capability in order to guarantee the supply of a minimum quantity of drinking water irrespective of any incidents that may occur. This quantity should be defined by the responsible authorities. This emergency response capability must also include situations in which water supplied via the water supply system has to be boiled if it is to be used as drinking water.

By definition, drinking water is not only water that is drunk, but all water produced at water treatment plants or taken from water sources and used in homes, for industry (including animal husbandry) or in society in general. The requirement is for the water to be «hygienically safe».

The drinking water sources must also normally be able to supply the fire and rescue services with water for putting out fires.

SOCIETAL FUNCTIONALITY

4.2.2 SEWAGE HANDLING

The ability to discharge wastewater and treat it sufficiently.

Wastewater includes domestic and industrial wastewater and stormwater that must be transported away and treated thoroughly before being released back into nature. Requirements for the treatment of wastewater are differentiated.

«Sufficient» treatment normally means that wastewater is treated in accordance with applicable regulations and licences. Assessments must also be carried out and measures must be implemented which ensure that the risk of contamination to the recipient is acceptable even in the event of unwanted incidents.

4.3 FINANCIAL SERVICES

Financial stability is a primary objective for the authorities' governance of the financial sector. This means that the financial system must be robust in the face of disruptions so that it is capable of channelling capital, making payments and redistributing risk in a satisfactory manner.

The financial system is made up of financial markets, financial institutes and a financial infrastructure.

The functional capability which must be maintained by society at all times in this field is described in capabilities linked with the financial market, financial transactions and means of payment.

4.3.1 THE FINANCIAL MARKET

The ability to maintain secure channelling of capital between stakeholders nationally and internationally.

This capability is linked to the authorities' ability to implement measures for maintaining functioning monetary and capital markets in situations where access to capital dries up.

4.3.2 FINANCIAL TRANSACTIONS

Ability to make payments and implement other financial transactions securely.

The payment systems are a prerequisite for the interaction between stakeholders in the financial system. Electronic transactions between accounts and between banks both nationally and internationally are the most important aspect in this context. The use of cash is reduced and is of little significance as regards to financial transactions between business stakeholders. However, cash may function in an emergency response situation.

4.3.3 MEANS OF PAYMENT

The ability to maintain the population's access to necessary means of payment.

Payment methods include cash and electronic payment instruments such as debit cards, direct debits and account payments. Other payment instruments such as cheques and remittances are of only marginal significance in Norway nowadays.

4.4

POWER SUPPLY

The societal function Power supply includes the systems and deliverables necessary to safeguard society's need for electricity for heating, domestic services, production, transport, etc., and district heating if such systems are provided.

Two capabilities are defined within the societal function *Power supply*: *Electricity supply* and *District heating*.

4.4.1 ELECTRICITY SUPPLY

The ability to guarantee end users access to sufficient electricity.

This capability includes the delivery of electricity to organisations and households in line with demand. Even though the delivery reliability of the Norwegian power system is generally very good, failures are unavoidable. Therefore, this capability also includes the ability to restore the power supply as quickly as possible in the event of a failure. If there are prolonged power outages in smaller or larger areas, the power supply must have systems for rationing energy so that organisations with vital societal functions in particular are safeguarded, minimising the harmful impact on society.

4.4.2 DISTRICT HEATING SUPPLY

The ability to guarantee consumers access to sufficient district heating where this is provided.

This capability includes the supply of district heating to organisations and households connected to such systems in line with the need applicable at any time. It also includes the ability to rapidly restore the heating supply in the event of a failure.

4.5

ELECTRONIC COMMUNICATION NETWORKS AND SERVICES

This societal function includes electronic communication via commercial networks and Nødnett [Tetra network], which is the state infrastructure for mobile communication for the emergency services and other emergency response stakeholders.

Two capabilities are defined within the societal function *Electronic communication networks and services*: *Ecom services* and *Electronic communication security*.

4.5.1 ECOM SERVICES

The ability to maintain access to electronic communication services.

This capability includes commercial networks and Nødnett. The ecom networks are vulnerable to the failure of the external power supply, cable rupture and logic errors. Therefore, this capability also includes the ability to restore access as quickly as possible in the event of a failure.

4.5.2 ELECTRONIC COMMUNICATION SECURITY

The ability to maintain confidentiality and integrity in electronic communication.

This capability is linked to electronic communication in commercial networks and Nødnett. Various subsystems and applications for electronic communication initially have different security levels with regard to the options for unauthorised access for eavesdropping on communications, for example. This capability assumes that the existing and accepted technical security level is to be maintained.

4.6

TRANSPORT

The societal function *Transport* is linked to society's responsibility for the functionality and security of the transport systems. Transport systems covered by this societal function are:

- The road transport system
- The aviation system
- The rail system
- The maritime transport system

Three capabilities are defined within the societal function *Transport*: *Transport capability*, *Secure transport systems* and *Secure transport*.

4.6.1 TRANSPORT CAPABILITY

The ability to maintain functionality in facilities and systems necessary to meet society's need for transport

This capability includes the ability to maintain facilities and systems necessary to guarantee sufficient transport capability in society:

- Control/traffic management systems and centres (including piloting services)
- Transport arteries
- Terminals
- Access to rolling stock as well, for railways

Sufficient transport capability means the necessary ability to convey goods and people in order to safeguard vital societal functions and meet the basic needs of the population.

This capability also includes the ability to organise transport in crises or in the event of unwanted incidents where access to modes of transport and transport capacity cannot be guaranteed by the market alone. In such situations, it may also be necessary to provide exemptions to the applicable regulations linked with the use and users of modes of transport.

4.6.2 SECURE TRANSPORT SYSTEMS

The ability to monitor infrastructure and manage traffic in order to maintain an acceptable safety level.

This capability includes the management and monitoring of all transport systems: on the road network, at airports and in Norwegian airspace, on railways, at ports and in sea-lanes. The degree of management and monitoring varies between the different systems and is significantly more rigid and extensive for aviation and the rail system than for shipping and road traffic. The risk acceptance levels also differ. Failure in the management and monitoring of the first two systems will involve an entirely unacceptable risk of accidents and result in traffic stoppages, while for the other two systems this will not be the case to the same extent.

This capability is linked with the maintenance of a safety level that is in line with the regulations of supervisory authorities, including safety management system requirements that may also involve risks that are not linked with regulated conditions.

4.6.3 SECURE TRANSPORT

The ability to maintain an acceptable level of safety in the case of transport with the potential for major accidents.

This capability includes safety within transport companies with the potential for major accidents: airlines, rail companies, shipping companies, public transport companies and freight transportation companies using heavy goods vehicles. «Acceptable safety level» means a safety level that is in line with the regulations of supervisory authorities, including safety management system requirements that may involve risks that are not linked with regulated conditions

4.7

SATELLITE-BASED SERVICES

This societal function consists of services with a broad range of possible uses, but they have in common the fact that they are supplied using satellites. Satellites may have payloads for Earth observation, navigation, communication or scientific surveys, or a combination of these.

One capability is defined for the societal function Satellite-based services: *Satellite services*.

4.7.1 SATELLITE SERVICES

The ability to maintain safety in the supply of satellite-based services to Norwegian territory.

This capability is linked to the work of Norwegian authorities within international organisations and via bilateral connections in order to safeguard Norwegian interests linked with positioning and navigation services, earth observation services and communication services. This capability also includes safeguarding of the continuity and safety of terrestrial functions for satellite services in Norwegian territory.

The criticality of the installations in Norwegian territory varies, but it is natural to view them as part of a complete whole in which it is important for all Norwegian stakeholders to safeguard their security-related obligations on a par with other network participants.

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