



NEEDS

Societal Security as Higher Education: The State of the Art in the Baltic Sea Region

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Co-funded by the
Erasmus+ Programme
of the European Union



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Intellectual Output 2 (IO2)
Report IO2 Task 2.1 & Task 2.2

26 February 2021 version to be published online

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Further information on NEEDS: <https://uit.no/project/needs>
ISBN: 978-91-985555-0-9

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About the NEEDS project and contributors to the current report

The 'Needs-based education and studies in Societal Security' (NEEDS) project addresses the skills gap and mismatch between higher education and the knowledge needs in this field, as well as the fact that there is a lack of structured transnational cooperation and dialogue between higher education institutions, practitioners, and experts in tackling these issues.

The project is co-funded by the EU Erasmus+ Strategic Partnership (project code 2020-1-SE01-KA203-078013) and runs from September 2020 through August 2023. It is led by the Council of the Baltic Sea States (CBSS) Secretariat, an intergovernmental regional organisation consisting of eleven Member States and the EU. The project partners represent a variety of higher education institutions, regional organisations and national authorities from Finland, Germany, Norway, Poland, Latvia and Sweden. The objective of NEEDS is to better prepare the next generation working in the field of Societal Security by boosting their educational experiences with the most relevant, field-specific and up-to-date knowledge and skills. This objective will be achieved through the co-creation of educational materials by cross-sectoral, multi-level and transnational teams, where the input for developing such material is collected directly from those working practically in the field.

The countries in the Baltic Sea Region (BSR) face several common Societal Security challenges due to their geographical proximity and functional interdependencies. The fact that neighbouring countries often provide support for one another when a crisis emerges is yet another important motivation for improving transnational cooperation. Even though NEEDS primarily focuses on the BSR, the results may also be relevant for other regions.

The NEEDS project will meet Societal Security challenges by 1) developing common learning materials for a short online course on Societal Security for the BSR, as well as 2) establishing a network of professionals and an interface for collaboration. Transnational and cross-sectoral teams will be at the centre of these efforts and will draw upon an innovative pedagogical approach. Nurturing strategic partnerships and cooperation will strengthen trust and deepen understanding between sectors and countries in the BSR, helping to improve common efforts and reduce the risk of conflict and misunderstanding.

This is the first in a series of reports regarding the NEEDS project and, consistent with Erasmus+ vocabulary, its Intellectual Output 2 (IO2). IO2 consists of five tasks, culminating in the forthcoming *Guidelines and Recommendations for Societal Security Education in the Baltic Sea Region*. The report at hand combines the following two introductory tasks:

Task 2.1: Mapping of existing degree (study) programmes in the field of Societal Security in the BSR – a comparative analysis

Task 2.2: Analysis of the concrete curricula used in the degree (study) programmes in the field of Societal Security in the BSR – a comparative analysis.

Based on the collaborative efforts of the project partners, the report was compiled by Christer Pursiainen and Dina Abdel-Fattah from UiT – The Arctic University of Norway. The authors are indebted to the project partners and other colleagues for their invaluable information and comments, particularly Guna Bazono, Roger Flage, Katie Goldie-Ryder, Kamrul Hossain, Eva Johansson, Karla

Jonsson, Björn Karlsson, Jürgen Krempin, Andrej Masloboev, Karl Modig, Hanna Iisakkila Rojas, Maksim Shishaev, Morten Sommer, Reidar Staupe-Delgado, Tim Sufin, Oksana Telak, Kaspars Vārpiņš, and Stephanie Young. We would also like to express our gratitude to those who responded anonymously to the small-scale questionnaire referred to in this report.

The report, finalised in February 2021, is designed to be a 'living document' and will be updated, based on potential future comments, feedback and new data, prior to being incorporated into the IO2 Final Report in December 2021.

List of acronyms

Bch	Bachelor
BSR	Baltic Sea Region
CBSS	Council of the Baltic Sea States
CENELEC	European Committee for Electrotechnical Standardization
Covid-19	Coronavirus disease 2019
DE	German (language)
DK	Danish (language)
ECTS	European Credit Transfer and Accumulation System
EE	Estonian (language)
EEA	European Economic Area
EN	English (language)
ETSI	European Telecommunications Standards Institute
EU	European Union
FI	Finnish (language)
HEI	Higher Education Institution
IO	Intellectual Output
IS	Icelandic (language)
ISO	International Organization for Standardization
LT	Lithuanian (language)
LV	Latvian (language)
MSc	Master of Science
NCM	Nordic Council of Ministers
NEEDS	Needs-based education and studies in Societal Security (project)
NO	Norwegian (language)
PL	Polish (language)
RU	Russian (language)
SE	Swedish (language)
SMS	Safety Management Systems
TC	Technical Committee

Executive summary

This report draws a concise picture of the state of the art of Societal Security as higher education in the Baltic Sea Region (BSR). The region is typically defined in terms of the following eleven Member States of the intergovernmental Council of the Baltic Sea States (CBSS): Denmark, Estonia, Finland, Germany, Iceland, Latvia, Lithuania, Norway, Poland, Russia, and Sweden.¹ Hosting several regional competent authority networks in the field of Societal Security, the CBSS provides a natural geographic reference point for the current analysis, even if not all of the respective countries are littoral states of the Baltic Sea as such. The region is also a mix of European Union (EU), European Economic Area (EEA) and non-EU countries.

The report starts with a rather comprehensive introduction to the concept of Societal Security, which has been chosen by the project as an umbrella concept to characterise the variety of activities related to non-military safety and security challenges in the region. The concept is nevertheless by no means self-explanatory and uncontested. Therefore, the different academic roots are identified in the current report, revealing the dual understanding of the concept, one focusing more on identity and the other on its functional and practice-oriented branches. The report also discusses the issue of whether Societal Security constitutes an academic discipline, given that it is an interdisciplinary and rather nebulous amalgam of different approaches and applications. While Societal Security contains many features that are typically associated with an academic discipline, the perception of whether it constitutes an academic discipline remains mixed and unclear. The report also looks at the use of the concept by standardisation bodies as well as national and regional research councils, where Societal Security has had some success. Furthermore, it is noted that there are efforts to establish the concept of Societal Security as a unifying English-language term for practical BSR competent authority collaboration in non-military safety and security issues.

Moving on to mapping the higher education Societal Security programmes, the report concentrates on the first and second levels of degree programmes (bachelor's and master's equivalent respectively), following the Bologna Process definitions. The most relevant degree programmes are identified in each country, concluding, however, that the picture remains rather fragmented and fuzzy, with the programmes organised under a variety of titles and labels under a range of disciplines. To make sense of this disunited representation of Societal Security in higher education in the BSR – with the very concept emerging in programme titles only rarely – the report takes a closer look at the second-level degree curricula. One can identify five conceptual and thematic areas in particular that seem to constitute the core of Societal Security degree programmes in different combinations and under different precise labels, namely: risk management, risk governance, crisis management, safety management, and resilience. It is noted that these concepts and their respective research objects all overlap with each other, which reflects a field that has emerged as a combination of different academic and disciplinary traditions. Another notable feature of most of the degree programmes is that they are quite tailorable, with a variety of different tracks and electives. Finally, some practical characteristics of the degree programmes are briefly discussed, including topics such as: facilitated internships, study formats and facilitated foreign student exchange. It is concluded that – conceptual difficulties notwithstanding – it is rather easy to identify good practices in the field of Societal Security. This provides an opportunity for further examination of the degree programmes and, in doing so, also enhances cross-border cooperation.

Given the increasing significance of the issues covered in Societal Security, as well as the growing importance of global, transnational and transborder cooperation regarding these issues, the general conclusion of the report is that it is of the utmost importance for higher education institutions and their

relevant degree programmes to keep up to date with developments in the neighbouring BSR countries and, to some extent, to make them comparable in order to accurately portray the dynamics of risks and crises. The fuzzy identity of Societal Security, and the fact that this concept is not widely used as a term in degree programme titles, is an obstacle for more coordinated development of the field as a higher education concept. Therefore, Societal Security scholars – whatever concepts they prefer to use to describe this field – should work towards a higher level of agreed-upon terminology consistency, in order to facilitate a standard and coherent framework for the field’s knowledge.

1. Introduction

The objective of the current report is to map the degree (or study) programmes in the Baltic Sea Region’s (BSR) Higher Education Institutions (HEI) in the field of Societal Security, identifying, describing and analysing the available degrees and their curricula from a comparative perspective.

The report is divided into two main sections. Since the report will lay the foundation for subsequent reports in the NEEDS project, Section 2 will include a rather lengthy introduction to the very concept of Societal Security. It focuses on what Societal Security means, what its specific characteristics and challenges are, and what it entails in terms of higher education. The subsequent Section 3 then provides detailed information about Societal Security higher education in the BSR, including a short overview of the typical curricula content. We conclude and summarise the main findings thereafter.

2. Setting the scope: What is Societal Security?

Rather than being an established academic discipline, Societal Security is a rather fragmented multidisciplinary/interdisciplinary field, whose identity and boundaries are not yet fully defined. As expressed in academic journals and degree programmes, as well as in several national and organisational reports, Societal Security is contested by and competing with several other concepts that have a similar or overlapping meaning. These include, inter alia, concepts such as civil defence, civil protection, civil security, crisis management, disaster risk management, disaster risk reduction, emergency management, homeland security, human security, internal security, resilience management, risk governance, risk management, safety and security management, and soft security (see Appendices 1 and 2).

This largely post-Cold War conceptual minefield of non-military, broadened security has emerged spontaneously from different national and organisational traditions and practices as well as concrete needs, duly reflecting the variety of national official languages and specialised international organisations.² As a post-Cold War concept, the traditional state-centred military security is not considered a part of Societal Security, even if the potential safety and security consequences of military crisis situations for societies fall within its scope. However, another concept, hybrid threats or hybrid warfare – referring to a malicious state or non-state actor’s aggression with a set of ‘near-war’ elements, such as attacks on critical infrastructure or the political stability of a country – is duly established in most countries as an essential and growing part of Societal Security³ (whatever umbrella term one uses for this field). This again contributes to making the conceptual and disciplinary situation rather complex, particularly in terms of preparing higher education curricula, as it tends to blur the line between Societal Security and traditional state security.

2.1 The academic and political roots of Societal Security

We start our conceptual discussion by distinguishing between two different but overlapping academic understandings of Societal Security. We then discuss the various geographic and policy contexts for Societal Security.

Two understandings of Societal Security

One should not overlook the fact that the very concept of Societal Security is somewhat contested, not only by other concepts but also from within, in terms of what one means when using it. Looking at the concept's roots, it draws on two academic traditions.⁴ The first, arising from social constructivist debates in the early 1990s, is sometimes called an identity-based use of the Societal Security concept (developed within the so-called Copenhagen School, most notably known for also developing the related concept of 'securitisation'). In this conceptualisation, Societal Security is a political science or sociological concept that refers to "the defence of a community against a perceived threat to its identity."⁵ Thus, the focus is not on viewing the concept of security from the point of view of traditional state security, but from the perspective of society at large, particularly with regard to threats against its identity. This is closely related to, or perhaps overlaps with, a later social constructivist concept that was developed in the early 2000s, namely ontological security; the latter discusses how societies and citizens who have adopted a national group identity strive for certainty about their own identity, and the continuity of their worldview constructed through it.⁶

Another understanding of the concept of Societal Security that developed later depicts it as a more practice-oriented and *functional* approach.⁷ This functional approach, the content of which will be discussed somewhat at length throughout the current report, was originally presented as a European equivalent of the United States post-9/11 concept of homeland security.⁸ The 'functional' attribute was largely dropped later and replaced by 'societal' to enhance the appeal of the concept.

This, in a sense, annoying and confusing dual use of the concept of Societal Security originated incidentally. When the matter became apparent to the developers of the concepts, the idea was that a functional version of the concept could very well gain exclusivity.⁹ However, both versions survived in the literature and continued to live their own lives. This confusion, added to the fact that the concept never became particularly well known in either understanding in the BSR, not to mention at European or global levels, has led to some confusion in the literature when discussing the array of safety and security challenges, and when trying to situate them under the umbrella of Societal Security.

Looking at three publications from 2016, 2018 and 2021 that deal with Societal Security in the BSR/Nordic countries reveals something about the extent of the debate, as well as some changes that have occurred over time. The edited volume titled *Baltic Sea Region: Hard and Soft Security Reconsidered*¹⁰ from 2016 shows that the overall spirit of the analyses is about traditional security, energy security and transport corridors rather than about Societal Security in any well-defined, holistic meaning. However, the concept of Societal Security is brought up in a few of the book's chapters that reflect the Swedish, and partly Norwegian, perspectives. It is argued that Societal Security is an emerging field of scholarship underpinning practices in the BSR. Thus, "the concept of Societal Security, and with a core of resilience, has developed as a guide for the policy developments for emergency management in many European nations." With regard to resilience, the emphasis is placed on "the functionality of society and on the values that lay the foundation for European societies rather than on the traditional emphasis on territorial concerns."¹¹

The edited volume titled *Societal Security in the Baltic Region*, which appeared two years later, is more to the point as it explicitly reflects the (non-)use of the concept in Belarus, Denmark, Estonia, Finland, Iceland, Latvia, Lithuania, Norway, Poland, Russia and Sweden.¹² Although Societal Security is used as an umbrella concept in the book, its meaning is an unclear mix of the above-mentioned identity-oriented and functional-oriented Societal Security concepts, possibly due to the largely International Relations disciplinary backgrounds of the authors of the respective country profiles, who are more familiar with the Copenhagen School, whereas some of the authors have a reference point more rooted in a functional understanding of the concept.

The concept of Societal Security becomes even more complicated if one looks at the country profiles in the above volume from a comparative perspective. The official Danish¹³ approach, according to the author of the respective chapter, hinges on understanding the role of a small and open society and its national security strategy in a time of global upheaval and turbulence. The Estonian,¹⁴ Finnish,¹⁵ and Icelandic¹⁶ approaches to Societal Security come closer to the functional understanding of the concept, but its applications present as versions of the concept of societal resilience. The Norwegian¹⁷ concept of *samfunnssikkerhet* is discussed in terms of identity-based Societal Security, although the parallel applications of societal safety and public security are discussed in a more functional sense of the terms. The Swedish¹⁸ narratives of Societal Security are described in terms of the older concept of total defence (1950-1990), which competes somewhat with the more current human security (1990-2017) and emergency preparedness (1994-2017) concepts.

In Latvia,¹⁹ the concept of Societal Security does not seem to be prevalent in official and public debates, which are instead dominated by the external Russian hard security threat, issues related to the status of the Russian language in Latvian society, and economic security. The Lithuanian²⁰ discourse is similarly overshadowed by the perceived national security threat caused by Russia. The concept of Societal Security therefore reflects the Copenhagen School meaning, where security is understood from the dual perspective of the state and society respectively. This is similarly found in Poland,²¹ where the Copenhagen School's Societal Security conceptualisation is used to understand and analyse not only traditional military security threats but also other related threats that the country faces, such as cyber and information security challenges and threats against the Polish identity.

In the Belarusian case, the concept of Societal Security has "neither an adequate translation into the Russian or Belarusian languages, nor any appropriate equivalents conveying the essence of the concept in the Belarusian political and academic discourse, which are still based on state-centric views."²² However, the respective author manages to draw a systematic picture of the internal and external threats to the country. Finally, with regard to Russia,²³ the concept of Societal Security has no real bearing on current official and academic debates. Instead, the related issues are examined from the perspective of national security doctrines, where external and internal threats coexist, but where the Copenhagen School's emphasis on identity is perceived as too vague and all-encompassing.

The 2021 edited volume *Nordic Societal Security. Convergence and Divergence*²⁴ focuses on a more limited geographic area, but still draws a rather fragmented picture of the concept of Societal Security. While duly recognising the existence of the identity-based understanding of the concept, the book purposely focuses on the functional understanding. In its in-depth historical reconstruction analysis, the authors argue that although it is not necessarily always explicitly referred to as Societal Security, the core components and strategies of functional Societal Security were first presented in Swedish and Norwegian government reports from the early 2000s onwards. From these two countries, the concept spread to Finland and Denmark. Iceland joined the path of Nordic countries later on via the Nordic

Council of Ministers (NCM), where Societal Security was presented as an appropriate concept for building up non-military security cooperation, at least on a programmatic level.

In Sweden,²⁵ it was about modernising the Cold War total defence concept via the concept of civil defence towards even more comprehensive Societal Security, particularly in its functional meaning. This understanding was formed in close research and training cooperation between the academia and policymakers under the auspices of the (current) Swedish Defence University from the late 1990s onwards.²⁶ However, compared to Norway's *samfunnssikkerhet*, the equivalent Swedish term "*samhällssäkerhet* in fact never cemented itself as the main umbrella term in the same way."²⁷ In Norway, it is claimed, Societal Security similarly stemmed from the total defence concept, but due to this country's military operations in Kosovo and later in Afghanistan, the civilian pillar of total defence, particularly preparedness, received less attention from the defence and security establishment, which "opened up a vacuum progressively filled by *samfunnssikkerhet*."²⁸

In Finland, the concept of Societal Security has never really been established in the Finnish language. Instead, the narrative²⁹ draws on a gradual development from the Cold War concept of 'total defence' to that of 'comprehensive security'. While the latter concept also had its heyday in international or at least Nordic security studies in the 1990s in terms of introducing 'new' non-military threats such as environmental issues,³⁰ in Finland the comprehensive security concept prevailed and has become the national, almost all-encompassing one. As it was further connected to the notion of vital societal functions in the 2000s, the actual content of comprehensive security has, however, evolved to become almost tantamount to Societal Security, or the more recent concept of resilience. On the other hand, it has been argued that the Finnish understanding of resilience is different – or more limited – when compared to its typical meaning, being mainly about a collective psychology, or even spiritual in nature.³¹

The Danish³² development has not been as conceptual. Instead, the Danish Defence and national security adopted new practices and tasks after the end of the Cold War, which morphed into more everyday practice around a broadened understanding of safety and security. Even if such concepts as resilience, for instance, have also been popularised in Denmark,³³ the country does not automatically follow the resilience practices of its Nordic neighbours, but has its own idiosyncrasies, illustrating the divergence of the Nordic approaches in spite of the basic similarities in their societies.

The above-mentioned 2021 volume indeed concludes that while Societal Security has coexisted with other similar concepts in the Nordic countries, it is more consistently and systematically used in Norway (*Samfunnssikkerhet* in Norwegian) than anywhere else. For the past twenty years, the Norwegian government has regularly prepared and published rather lengthy Societal Security Notifications for parliamentary discussions,³⁴ thereby not only legitimising the concept but also institutionalising it within the respective policy arenas as a summarising concept. Nonetheless, Societal Security has faced conceptual and definitional changes over time in Norway as well, in addition to clearly overlapping with many other concepts. The concept of preparedness, while also understood as part of Societal Security, is duly emphasised in the titles of respective policy documents and the names of the main sectoral authorities on national and local levels, alongside the concept of Societal Security. Also the concept of total defence has been increasingly expressed in the context of Societal Security.

Societal Security standardised?

The concept of Societal Security has had some success in the field of international standardisation, followed by successful lobbying especially by the Swedish and Norwegian representatives in the

respective bodies. This concerns its functional and more practice-oriented conceptualisation in particular. In this understanding, the concept found its authoritative definition within the International Organization for Standardization (ISO) in 2012:

“[Societal Security is] the protection of society from, and response to, incidents, emergencies and disasters caused by intentional and unintentional human acts, natural hazards, and technical failures.”³⁵

This definition captured the functional essence of the field in terms of adopting an all-hazards perspective, despite failing to recognise the recently popularised concept of resilience; rather, it focuses for the most part on protection and response. It was nevertheless able to overcome the English-language distinction between safety and security by including both unintentional/non-malicious and intentional/malicious hazards. It was therefore well suited to languages that do not make a distinction between safety and security in linguistic terms, but have only one common word for both. The 2012 definition was, however, withdrawn from the respective ISO terminology due to the merger of the organisation’s Technical Committee (TC) 223 ‘Societal Security’ with two other TCs in the same field for improved coordination purposes in 2015. The new committee is called ISO/TC 292 ‘Security and resilience’. This new TC does not include – either intentionally or by default – any definition of ‘Societal Security’ in its terminology.³⁶

In the European standardisation context, the European Committee of Standardization (CEN) has established, and retained, CEN/TC 391 ‘Societal and Citizen Security’. Its scope is the same as that covered by the aforementioned ISO 2012 definition, albeit expressed in a somewhat more comprehensive way. Societal and citizen security covers the whole spectrum of the crisis cycle, including aspects related to prevention, response, mitigation, continuity and recovery before, during and after a destabilising or disruptive event.³⁷ Currently, the TC 391 consists of three working groups: Healthcare Facilities, CBRNE (Chemical, Biological, Radiation, Nuclear, Explosives), and Crisis Management/Civil Protection. An all-hazards approach is adopted, including malicious and non-malicious hazards of different types or origins (e.g. natural, technological, human-induced, complex). As a whole, CEN’s scope (and that of its European ‘sister’ standardisation bodies CENELEC and ETSI) is broader in the safety and security field than this one TC’s work indicates, since there are several other specialised technical committees covering some other areas. These include, inter alia, TCs such as Services for Fire Safety and Security Systems; Cybersecurity and Data Protection; Steps to Measure and Set Targets for the Levels of Service to be Provided by, and the Resilience of, Transport Infrastructure; Environmental Management; Fire Safety in Buildings; Rescue Systems; Nuclear Energy; Nuclear Technologies and Radiological Protection; Terminologies in Crisis and Disaster Management.

The intergovernmental policy context

Several of the main Nordic national public research funding institutions use the concept of Societal Security to facilitate and coordinate collaboration in the respective field, coordinated by Nordforsk,³⁸ a regional research council under the NCM. The rationale is that there is a “need to build a common knowledge base to promote a shared understanding of the risks and threats that the Nordic societies may have to confront in the future”.³⁹ Societal Security is further justified via the notion that there is not only geographical proximity between the Nordic countries, but also a sense of cultural and societal similarity and community.

In its English-language version in the wider BSR, in some regional institutionalised *policy* settings the concept of Societal Security – and notably its functional meaning – has become, at least for the time

being, a kind of common denominator for intergovernmental safety and security cooperation. This might be partially due to the fact that none of the BSR countries have English as their official language. Thus, the holistic concept of Societal Security, one which combines a variety of safety and security fields, emphasises an all-hazards approach and is very suitable for that purpose. Furthermore, as a shared term it reflects the necessity of cooperative transnational activities. In May 2017, the CBSS-facilitated *Joint Position on Enhanced Cooperation in the Civil Protection Area of Directors General for Civil Protection in the BSR* stated that “the concept of ‘Societal Security’ should be a basis for developing a common Societal Security culture, as this concept is regionally and globally well standardized.”⁴⁰

There have been many efforts to define what this common BSR Societal Security ‘culture’ includes and entails, but it has remained fragmentary to some extent. Nonetheless, we can find some normative and prescriptive accounts tailored to BSR Societal Security,⁴¹ as well as more analytical accounts⁴² in pursuit of this continuing quest for a common understanding.

2.2 Is Societal Security a discipline?

Should one regard the concept of homeland security as a US equivalent of Societal Security in the Nordic/BSR (or wider European) context, one can find literature that depicts the former’s state of the art as an academic field. A 2011 analysis proposed that homeland security faced three challenges: (1) the development and implementation of a standardised curriculum with core functions and competencies that are inclusive of emergency management; (2) the evolution into a new academic discipline; and (3) the adoption of multidisciplinary or interdisciplinary approaches to teaching and learning.⁴³ These are basically the same challenges that Societal Security faces, albeit in much more fragmented geographic context.

In academic and higher education terms, one might argue that Societal Security (or whatever nomenclature is used) is a discipline in the making but is not quite there yet. It is tempting to believe that a more shared and perhaps more rigid disciplinary understanding would enable a better comparison of theories and methodologies. In empirical terms, a shared understanding would better facilitate the need for cumulative knowledge development. In more practical terms, this would help to justify allocations in university budgets and wider research funding programmes focusing on this field. Furthermore, being a widely accepted discipline would give more visibility and prestige to this line of research and education. If it bore more signs of a traditional discipline, it would be easier to communicate the scope of the concept within and outside the academic community.

On the other hand, the very idea of a discipline might carry a negative connotation that would artificially prevent the field from developing in keeping with its interdisciplinary spirit. While the term discipline originates from the Latin words *discipulus* (pupil) and *disciplina* (teaching), it is also often understood as something that is influenced by an unquestionable authority, such as ‘the disciples of Jesus’ or ‘military discipline’, which can convey an overly rigid impression of what the term should and should not encompass.⁴⁴

Nevertheless, most of the academic fields that are not (yet) recognised as genuine disciplines would welcome an upgrade to that title. Societal Security is by no means alone within academic fields struggling with this identity issue. This includes such rather recognised fields as ‘higher education’,⁴⁵ ‘strategic management’,⁴⁶ ‘human resource development’,⁴⁷ ‘service operations management’,⁴⁸ ‘supply chain management’,⁴⁹ ‘intellectual capital’,⁵⁰ ‘occupational studies’,⁵¹ ‘translation studies’,⁵² ‘knowledge management’,⁵³ ‘spatial epidemiology’,⁵⁴ to mention but a few. They all face similar issues

with regard to the ‘emerging discipline’ status of their field. Let us discuss Societal Security from this perspective of disciplinary cohesion and maturity.

Societal Security as a discipline?

The point at which an academic field such as Societal Security becomes a discipline is a complicated issue. The concept of a discipline is itself ambiguous, and since established disciplines are so different from each other, it is hard to come up with a concise definition that would fit all disciplines to the same degree.

Those who defend the rather hierarchical understanding of science claim that at the highest (or broadest) level, there are ‘sciences’ like natural and social sciences. These, in turn, can be divided into parent, root or reference ‘disciplines’ like mathematics or psychology, which in turn can be divided into ‘sub-disciplines’, like engineering or political psychology. Some of these can then be called ‘fields’ which, while relying on their parent disciplines, have to strive for their own identity. Some of these fields are more applied and may include cross-disciplinary perspectives to help distinguish their idiosyncratic identity from their parent discipline.⁵⁵

If one proceeds in a top-down manner in this hierarchy, the further down one places Societal Security, the less it resembles a field of study and education that shares some core issues, as it does not have any common parent science or parent discipline to start with. Thus, it would be easy to define risk and reliability engineering as a subdiscipline of engineering, which can in turn be understood as an applied discipline under natural or technological sciences, whereas crisis management is obviously a subdiscipline or just a field under social sciences, most notably the disciplines of political science, organisation studies or public policy.

On the other hand, some of the representatives of some rather specific fields within Societal Security seek to emphasise the scientific nature of some of its very subfields, terming them safety science⁵⁶ or risk analysis science,⁵⁷ for instance, clearly having a more or less shared identity within a certain epistemic community. One of the reasons for such science-based terminology seems to be related to the need for academic representatives of these specific studies to better understand who they are and what they are actually doing, including acquiring an image of status among the various fields in academia. Sometimes this identity search is motivated by a defensive stance against the challenges faced in other academic fields but also against laypeople, who may question the specific expertise needed to understand a specific topic. At the end of the day, these debates can obviously be rooted and deconstructed with regard to the ontological assumptions of a society and its current challenges at large.

However, literature exists that proposes at least some criteria for what constitutes an academic discipline.⁵⁸ One of the most cited works in this issue area (by Armin Krishnan 2009⁵⁹) includes six criteria that a discipline must fulfil, or at least satisfy to some extent. The latter means that not all disciplines have to fulfil these six criteria, but the more characteristics a discipline has, the more likely it will become a recognised academic discipline capable of reproducing itself and building upon a growing body of its own scholarship. We have organised these criteria in Table 1, where we consider such characteristics against our perceptions of the current state of Societal Security as a discipline.

To facilitate the assessment, we have added a scale representing ‘no evidence’, ‘some evidence’, ‘medium evidence’ and ‘solid evidence’, respectively, to the original scheme. In preparing the table, we used an online questionnaire to consult senior-level (at least PhD or equivalent expertise) academic

researchers and higher education teachers from within the BSR, as well as some from outside who have a higher education connection to the region, to balance our own personal opinions. Identifying such persons is inevitably somewhat random and biased because it is difficult to draw a line between those that are ‘within the field’ and those who are not, due to the absence of any clear-cut definition of the academic field and the fragmented way in which it is represented. About two-thirds of those we sent the anonymised questionnaire to (we allowed the questionnaire link to circulate further outside of our distribution list) responded, amounting to 38 respondents in all. In spite of the rather modest sample and the statistical reliability and validity problems of this simple, non-scientifically controlled questionnaire, the results provide if not evidence then at least orientation around the issue.

Table 1. Is ‘Societal Security’ an academic discipline?

Questionnaire results in % (n=38) ⁶⁰					
Criteria (Krishnan 2009) ⁶¹	No evidence	Some evidence	Medium evidence	Solid evidence	No response
1) Does ‘Societal Security’ constitute a particular object of research?	15.8	21.1	23.7	36.8	2.6
2) Does ‘Societal Security’ constitute a body of accumulated specialist knowledge referring to the object of research, which is specific to it and not generally shared with another discipline?	10.5	36.8	26.3	23.7	2.7
3) Does ‘Societal Security’ include theories and concepts that can organise the accumulated specialist knowledge effectively?	13.2	36.8	23.7	21.1	5.2
4) Does ‘Societal Security’ have specific terminologies, or a specific technical language adjusted to the research object?	15.8	42.1	15.8	21.1	5.2
5) Does ‘Societal Security’ have its own specific research methods according to the specific research requirements?	42.1	28.9	18.4	2.6	8.0
6) Does ‘Societal Security’ have some institutional manifestation in the form of subjects taught at universities or colleges, respective academic departments and professional associations connected to it?	10.5	23.7	31.6	27.3	6.9

As shown in Table 1, the results are in many ways mixed and open to various interpretations. Concerning the first criterion, ‘Does ‘Societal Security’ constitute a particular object of research?’, the majority (36.8% or 14/38 persons) thought that there is solid evidence to that effect. The free text section of the questionnaire gave rise to many interesting notions under this question. One general remark was that “the subject is wide and multidisciplinary, but nevertheless a particular object of research, when compared to very many other such objects of research.” Another, more specific remark was that “I have found that the term is unfamiliar to my native English-speaking colleagues.” One response was that Societal Security “takes a societal, often critical, typically sociological perspective”, and another that the concept is “still quite fuzzy.”

The authors of the current report would concur with the majority on this question. Societal Security (irrespective of the label under which it is placed in different contexts and national traditions) has been standardised in a way that reflects the academic research and educational focus of the concept. It is about a particular object of research, despite its identity and boundaries not being quite clear, and remains, to some extent, contested.

As to the second criterion, *'Does 'Societal Security' constitute a body of accumulated specialist knowledge referring to the object of research, which is specific to it and not generally shared with another discipline?'*, the majority (again 36.8 % or 14 respondents, albeit probably not exactly the same persons) would agree with the claim that there is 'some effect to that effect'. While there were several very interesting free-text notions, one could mention a statement that reflects the dilemma or perhaps promise of interdisciplinary research: "The knowledge tends to be shared with different disciplines. A researcher in the field also 'belongs' to other disciplines and connects his or her research to these disciplines."

Again, the authors of the current report would concur with the majority. While a multidisciplinary or sometimes interdisciplinary field, the community of Societal Security scholars and professionals have clearly formed an accumulated specialist knowledge on its object area, as expressed most particularly in the peer-reviewed journals most closely related to Societal Security.⁶² It is important to note that none of these journals actually include the term Societal Security in their title.

When it came to the third criterion, *'Does 'Societal Security' include theories and concepts that can organise the accumulated specialist knowledge effectively?'*, the majority (36.8 %/14 respondents) considered that there was 'some evidence' of this. One of the free-text responses expressed this aptly as follows: "Concepts, yes, very much so. Theories, not so much. At least not if compared to other fields of study or disciplines. The theories used are shared with other disciplines and not unique or special for the Societal Security field."

The authors of the current report can concur with the above comment. However, while there is no established, dominant theoretical school regarding Societal Security, themes and theoretical concepts exist that can be seen as being at the 'core' of the subject: risk management, risk governance, crisis management, resilience, and safety management. While any of these concepts could be claimed to constitute at least their own research programme (in a Lakatosian sense), all of these themes and concepts are to some extent contested. Yet, that is typical of almost any discipline or even research programmes. It also seems that while these conceptual-theoretical constructions of Societal Security were originally borrowed from other disciplines, such as organisation studies, or political science, reliability engineering, or environmental sciences, they have, over time, become increasingly 'owned' and modified by Societal Security studies. These themes and concepts therefore provide a basis for higher education degrees in Societal Security.

The fourth criterion was *'Does 'Societal Security' have specific terminologies, or a specific technical language adjusted to the research object?'* The majority (42.1 %/16 respondents) agreed that there is 'some evidence' to this effect, thus grading low. Several free-text comments noted that the risk terminology however could attest to the opposite.

Our own thinking is that while there is a specific terminology, it is often contested. This, however, as mentioned above, is the situation in almost any discipline. The main challenge is that there is not an agreed-upon label for the field itself, which makes it somewhat difficult to communicate even among professionals and dedicated academics in the same field.

The fifth criterion, *'Does 'Societal Security' have its own specific research methods according to the specific research requirements?'*, was clearly not supported, with the majority (42.1%/16 respondents) agreeing that the field is 'too fragmented and fuzzy'. One of the free-text answers noted that the field "uses social science research methods and probability-based calculations as other disciplines do."

The current authors similarly conclude that it is difficult to determine any specific methodologies or methods for social science-oriented Societal Security research. Research in this discipline typically utilises generic qualitative and sometimes quantitative social science methodologies, typically small-N case study methodology. However, in the more technical field of Societal Security – particularly risk analysis – specific quantitative, semi-quantitative and qualitative techniques or methodologies are utilised.

In terms of the last criterion, ‘Does ‘Societal Security’ have some institutional manifestation in the form of subjects taught at universities or colleges, respective academic departments and professional associations connected to it?’, while the majority (31.6%/12 respondents) were of the opinion that there is moderate evidence of this, almost a third (27.3%/10 respondents) considered that there was even solid evidence to this effect. The numerous free-text replies confirmed that Societal Security, albeit under different labels, belongs to the regular degree programmes of many universities in the BSR and beyond.

Indeed, we can conclude from the above discussion, and also based on our survey of relevant degree programmes presented below in Section 3, that there is firm evidence supporting the claim that, at least in some countries analysed in the current report, Societal Security can be deemed a discipline in its own right. Furthermore, there are a number of professional associations and conferences connected with the current field.

Should the discipline be called ‘Societal Security’?

On closer inspection, it seems that the above criteria for assessing disciplines do not necessarily serve as legitimate indicators of multi- and interdisciplinary fields such as Societal Security. However, if Societal Security were considered a separate field or even discipline, would the scholars and teachers accept this particular concept as an umbrella concept to the many issues it represents? We posed this question in our questionnaire. The results are shown in Table 2.

Table 2. Would you accept ‘Societal Security’ as an umbrella concept in your field or research discipline in higher education?

Question	Questionnaire results % of respondents (n=38) ⁶³
Would you accept ‘Societal Security’ as an umbrella concept in your field or research discipline in higher education?	Yes 52.6
	No 39.5
	No response 7.9

Table 2 reveals that a majority of respondents – senior researchers and higher education teachers in this field in the BSR – would accept the concept of Societal security, although also the clear ‘no’ received relatively high support. The opinions are therefore very divided in this issue. Additionally, we asked respondents to propose other alternatives for this kind of umbrella concept, with more or less the same content. While the sample is too small and random, and the results are too mixed in this context to draw any definitive conclusions and show any meaningful statistics, it became clear that concepts such as ‘Safety and Security’, ‘Risk and Crisis Management’, ‘Risk Management’, ‘Disaster Risk Management’, ‘Risk and Crisis Governance’, ‘Resilience Management’, and ‘Disaster Risk Reduction’ enjoy some support, though none of them being particularly dominating.

What kind of discipline?

If we duly consider that Societal Security is an academic discipline, what kind of discipline can it be construed as? A well-known traditional classification draws upon two dimensions,⁶⁴ where one dimension spans a continuum of disciplines that have reached the (Kuhnian) level of paradigms, that is, a discipline that specifies appropriate problems to be studied and appropriate methods to be used, compared to disciplines with no such paradigm development. The other continuum spans fields that are fundamental research fields, the so-called 'hard' sciences, and those that are applied, the so-called 'soft' sciences.

In this two-continuum matrix, Societal Security would be situated as a discipline a) characterised by a low level of paradigmatic developments, and b) a high degree of 'softness' in terms of its practical applicability. To add to Societal Security's disciplinary culture,⁶⁵ one might characterise it as fundamentally normative, where its task is not only to analyse its research subject but even – most importantly – to enhance societal safety and security in practice, producing scientific support for practical policymaking.

The challenge of multi- and interdisciplinarity

Multi- and interdisciplinarity became new buzzwords in the early 2000s and have increasingly been used as funding criteria for most major research funding programmes. Currently, multidisciplinary, and interdisciplinarity in particular, coexist somewhat uneasily with the traditional disciplines, potentially suggesting that the concept of post-disciplinarity will be developed in the longer term.⁶⁶

Societal Security relies to a considerable degree on multidisciplinary and interdisciplinary approaches, including elements most notably from political science, international relations, legal studies, sociology, psychology, public health studies and medical sciences, organisation studies, business studies, engineering, natural sciences, and the humanities. This situation has emerged rather naturally due to the fact that since its 'invention' Societal Security has been an amalgam of many disciplines, albeit in an uncoordinated manner. This characteristic, however, is widely perceived as a positive feature. There is a general normative claim in current research and pedagogical debates that the construction of knowledge requires a broader and more holistic approach, particularly in the expansion and deepening of complex studies. The purpose then is to create unified knowledge, or at least to transfer methods from one discipline to another.

In practice, the above purpose becomes a matter of degree. Multidisciplinary generally means the application of more than one discipline to an object of study while staying within the boundaries of each distinct discipline. Interdisciplinarity, in turn, typically entails analysing, synthesising and harmonising links between disciplines into a coordinated and coherent whole. A third concept is sometimes used, namely transdisciplinarity, which is supposed to go even further, integrating disciplinary approaches so that the final product transcends traditional boundaries.⁶⁷ In the latter case, one could indeed speak about an emerging or existing new discipline. A specific feature, however, is that this kind of discipline has not followed the same route as most classical or current academic disciplines, namely resulting from diversification of a basic disciplinary research tradition. Rather, transdisciplinarity is more concerned with blending existing disciplinary perspectives together and developing something new through synthesis.

As already has become clear, there is no self-explanatory solution as to the state of the art of Societal Security from this perspective. On the one hand, there is some support for the field for becoming more

like a traditional discipline, on the other hand, the demands for increasing interdisciplinarity may implicitly contradict this quest.

Besides the criteria for a discipline, as discussed above, there exists an understanding that a discipline should be understood as such not only by its own enthusiasts but also by representatives from other disciplines. Here, too, it is a question of the matter of degree. The concept of a 'reference discipline' is therefore sometimes used. A reference discipline is "a well-established, recognized academic domain that provides a theoretical and methodological foundation for other disciplines".⁶⁸ From this perspective, Societal Security seems to be mostly on the receiving end, borrowing theories and methodologies from more established disciplines, but not contributing much to interdisciplinary debates in its own right.

2.3 A working definition of Societal Security in higher education

We can conclude from the above discussion that while the concept of Societal Security is used both in academic and in intergovernmental policy contexts in the BSR and has enjoyed some success in terms of European and global standardisation as well as in some Nordic countries' national policies, the picture remains fragmented and fuzzy. Furthermore, the issue of whether it is, or even should be, a scientific field or discipline in its own right remains contested. The basic challenge is that there is no widely shared idea about what the concept entails, what issues are at stake, and what the related policies and approaches should be called. In these conditions, a mere academic decision to use Societal Security as an umbrella concept does not necessarily reflect a consensus within and between the respective research community, practitioners and countries in the BSR (and beyond).

However, in order to draw a bigger picture of this multidimensional field and its role and challenges in higher education, the NEEDS project is in the process of discussing and developing a common higher education understanding of Societal Security, using it as an umbrella concept for the variety of research activities and degree programmes in this field. Although we will incorporate some aspects from the identity-oriented Societal Security conceptualisation, we rely more on the functional-oriented concept of Societal Security. Thus, as a working definition,⁶⁹ and for the scope of the NEEDS project, Societal Security:

- Aims to secure and maintain critical societal values, functions and services (including trust, communication, critical infrastructure, health and medical, financial and economic, governance and civic services, law and order, education, democracy and human rights, national sovereignty, and environment) by focusing efforts on identifying, eliminating and reducing risks, threats, and vulnerabilities, and by promoting meaningful and resilient processes, decisions, strategies, structures, policies and measures.
- Is a responsibility of the individual as well as community and civic groups, national/regional/local governing organisations and authorities, and businesses and companies.
- Is not only local or national in origin, scope, or breadth; it demands transnational and cross-sectoral institutionalised cooperation, despite differences.

This broad working definition is purposefully inclusive and allows for much variation, while all of its individual elements are open to interpretation. In spite of its extensiveness, the definition functions as the widest common denominator for the concept of Societal Security in the BSR, particularly when, as discussed in the next section, the variety of higher education programmes include many but not always all of its elements.

To conclude this introductory section, we can suggest that regardless of what we call the field or discipline discussed above, its representatives would probably benefit from working towards a higher level of consistency in terminology. This would most likely be beneficial for being able to accumulate and assemble a coherent framework for the knowledge that is gained from theoretical and methodological studies, individual case studies, experiments, and higher education. It would also enhance the potential to communicate the research to practitioners as well as the wider public.

3. Societal Security as higher education

The definitional challenges discussed in this report are not limited to the very concept of Societal Security. When mapping Societal Security in higher education, we also need to clarify what we mean by the concepts of higher education institution (HEI) and the respective degree (study) programme. In this section, we therefore briefly discuss the Bologna Process to begin with, in order to define the boundaries of our focus on the so-called first (bachelor's equivalent) and second cycle (master's equivalent) degree programmes. After that, we map the most relevant degree programmes. This follows by analysing the second cycle degree curricula in particular, in order to identify some common features and characteristics of what constitutes Societal Security higher education. Finally, we pinpoint some central formal issues in these degree programmes, which would deserve more detailed treatment in subsequent work. Our geographic scope consists of the eleven BSR countries (or CBSS Member States), as explained above.

3.1 What is higher education?

All but one of the CBSS countries were among the 29 original signatories of the 1999 Bologna Declaration. In 2001, Russia joined this pan-European process,⁷⁰ which as of today comprises 48 countries. The Bologna Process was designed to establish the European Higher Education Area, and its fundamental and original aim was to increase the economic competitiveness of Europe against the United States and rising Asian powers via harmonising the European education system. Although it has yet to produce full harmonisation, the Bologna Process nevertheless provides some common measurements for comparing Societal Security higher education in the BSR.

What is an HEI?

The achievements of the Bologna Process should not be underestimated, particularly the European Credit Transfer and Accumulation System (ECTS), which can be used to compare education systems and degrees within its area. Nonetheless, the process has not managed to create a self-explanatory, clear-cut understanding of what a higher education institution (HEI) is, or what constitutes higher education in general, apart from defining these concepts at a very fundamental level. According to the 2018 definition,⁷¹ an HEI is *any* institution providing services in the field of higher and/or tertiary education, as defined by *national* law. The respective higher education qualification is consequently *any* degree, diploma or other certificate issued by a competent authority attesting to the successful completion of a higher education programme.

This ambiguity is the obvious result of a process that started by emphasising the impossible combination of the concepts of 'harmonisation', 'diversity' and 'autonomy' in pan-European higher education.⁷² One should not be too critical, however. This kind of language is ostensibly the only way to reach any kind of agreement in a complex multi-national context, where the lowest common denominator compromise is of paramount importance in moving things forward. At the same time, this came at a price. The original purpose of standardisation, harmonisation and approximation was undermined since the

Bologna Process states that countries can always prioritise their nation-state-level traditions and special interests. Despite some of the shortcomings of the Bologna Process, however, there is no other higher education evaluation scheme that allows for easy comparisons, especially in a contested field such as Societal Security.

Our task is also challenging due to the rather recent trend of increasing vocational/professional/polytechnical/applied science HEIs and their overlaps with traditional research universities. National systems follow a certain logic of their own and there is currently no unambiguous, shared vocabulary and degree recognition rules in the Bologna Process when it comes to these new types of HEI degrees in multinational contexts. In Finland, for instance, an applied science university master's of 120 ECTS is not regarded, *academically*, as high as a research university 120 ECTS MSc, and therefore does not automatically guarantee eligibility for further PhD studies in research universities. In some other countries, for instance in Norway, such applied university degrees are fully comparable in their academic face value when compared with equivalent ECTS research university degrees.

What is a Societal Security degree programme?

Following the Bologna Process vocabulary, we define a degree programme as a “prescribed study programme leading to a formal qualification awarded by a higher education institution.”⁷³ Under this definition, the current report considers the *first and second cycles* of higher education degrees, which are as follows:

“The first cycle leads to a qualification (in many countries labelled ‘bachelor’) which is obtained after successful completion of a study programme with 180-240 ECTS credits. Programmes of the first cycle typically last three years. The second cycle leads to a qualification (in many countries labelled ‘master’) which is obtained after successful completion of a study programme with 60-120 ECTS credits.”⁷⁴

In 2003, doctoral studies were included in the Bologna structure and are referred to as the *third cycle*. In the current report, we do not include Societal Security education at this level. Nor do we include so-called *short cycle* degree programmes, leading to a qualification that is recognised as being at a lower level than a qualification at the end of the first cycle.⁷⁵ The former third cycle level does not really constitute any specific Societal Security degree programme in any country, and the latter short cycle level basically includes some vocational continuing education courses.

3.2 Mapping the most relevant degree programmes

Let us turn to mapping the relevant degree programmes. Besides confining our purview to first cycle and second cycle programmes, what are our other criteria of inclusion, or rather exclusion, in such a fuzzy field as Societal Security? First, we have excluded some types of degree programmes that nevertheless deal with safety and/or security. These include distinct military officer/national defence studies, police education, border guard education, air or maritime pilot education, in addition to other similar vocational education. These rather traditional degrees in any country would easily double or triple our subjects of mapping.

However, in some BSR countries – particularly in Estonia, Latvia, Lithuania, Poland, and to some extent Russia – fire or rescue higher education degrees are the main representatives of Societal Security (or civil protection) in higher education; and rescue/civil protection education as such, when discussed at a broad level, is closely connected to the core areas of Societal Security. Therefore, in countries where

this type of education represents a major part of what could be included in the realm of Societal Security, we have incorporated this type of vocational education in our mapping.

We have also excluded from our mapping many academic disciplines or degree programmes that can be considered highly specialised fields of Societal Security education. These include, inter alia, degrees in such areas or topics as cybersecurity, health sciences and public health, (most) environmental studies, international security studies, and so forth. However, again, in some BSR countries – particularly in the non-Nordic countries – where Societal Security degree programmes proper are few or completely lacking, we have nevertheless included such examples in our consideration for illustrative purposes.

All in all, we primarily focus our mapping on what could be called ‘holistic’ degree programmes that are clearly associated with Societal Security, under this or another label. Even so, the discipline remains a fragmented collection of a variety of social science, engineering, environmental, business and other study programmes. We start with concise country profiles, then proceed by listing the most relevant first- and second-degree programmes in the BSR respectively. This mapping is not claimed to be final but rather selective, however based on our best knowledge and perception of the state of the art.

Short country profiles

We can find degree programmes related to Societal Security in almost all BSR countries. However, only rarely is this specific term included in the degree title. The field nevertheless has its own professors and associate professors, again under different titles, and even in smaller countries such degree programmes may have dozens of graduates annually. Overall in the BSR, several hundred safety and security professionals are educated annually under different labels.

That said, in terms of higher education, Societal Security is a very fragmented field, characterised by various national traditions, several disciplinary directions, and different curricula, which makes the degrees difficult to compare with each other. Undoubtedly, this also hampers the development of a common Societal Security culture and understanding in the BSR region. Before providing a detailed review of the identified degree programmes, we briefly summarise in Table 3 the overall state of the art of Societal Security higher education in each BSR country.

Table 3. Short BSR country profiles of higher education in Societal Security

Country	Short profile
Denmark	In Denmark, Societal Security is not an established label in higher education. However, one can find a few degree programmes which, although not using the term, can be located under that label. One first cycle degree in social sciences and two second cycle level degree programmes in social sciences and engineering respectively are identified below.
Estonia	In Estonia, Societal Security is not an established label in higher education. However, one first and one second cycle environmental management degree are identified below that are loosely connected to Societal Security. One second cycle level vocational degree programme via its different track variations is clearly about Societal Security.
Finland	In Finland, Societal Security is not an established label in higher education but relatively widely understood in the respective academic community. Related degree programmes under other labels have appeared rather recently, however, emerging in different disciplinary variations. Three first cycle and three second cycle degree programmes are identified below that stand out as Societal Security higher education, representing social sciences, business studies and engineering.
Germany	In Germany, Societal Security is not an established label in higher education. However, one can find a few degree programmes which, although not using the concept of Societal Security, can be situated under that label. Regarding the first cycle level, one can identify at

	least two programmes that are engineering applications of this type of education. Regarding the second cycle level, at least three degree programmes can be found, two of which represent social sciences, and one engineering.
Iceland	In Iceland, there are no Societal Security degree programmes as such, and the concept is not used in higher education. Related issues are, however, discussed and studied as separate courses within some degree programmes in engineering, health studies, business studies, other social sciences, and so forth. This is illustrated with one first cycle and one second cycle degree programme below, both being rather generic engineering studies, with some elements of safety or risk and reliability engineering.
Latvia	In Latvia, Societal Security is not an established label in higher education. Regarding the first cycle level, one can, however, find two degree programmes in safety engineering. Regarding the second cycle level, there are no relevant degree programmes identified below, although some specialised degrees exist that focus on some particular safety or security perspective. This situation is illustrated with one second cycle degree programme, specialising in occupational protection and that includes some features related to Societal Security.
Lithuania	In Lithuania, Societal Security is not an established label in higher education. Regarding the first cycle level, one can identify two degree programmes, one focusing on engineering and the other being a more vocationally-oriented fire and rescue degree. Regarding the second cycle level, one can find four degree programmes that are about Societal Security proper, though from different disciplinary perspectives.
Norway	In Norway, Societal Security (<i>samfunnssikkerhet</i> , which means both safety and security) is an established field or discipline in higher education at both the first cycle and second cycle levels, following a deliberate government policy. It exists in different disciplinary variations, however, and under many more specific labels. The supply and variation of these types of degree programmes is increasing rather rapidly. At least three first cycle and eight second cycle level degree programmes are identified below that most notably can be seen as applications of Societal Security higher education, and which represent social sciences, safety engineering, or a mix of these fields or disciplines.
Poland	In Poland, Societal Security is not an established label in higher education. However, with regard to vocational studies connected to rescue service education, one can find both first cycle and second cycle degree programmes, where typical issues related to Societal Security proper are taught. One first cycle and one second cycle degree programme, both having a vocational/engineering focus, have been identified below.
Russia (North-Western Federal District)	In the Russian Federation, Societal Security is not an established label in higher education. There is a standardised system of civil engineering higher education, with degree programmes in safety and security. Social science programmes also exist, connected to environmental safety and sustainability. Mapping the relevant degrees in the North-Western Federal District, eight first cycle degree programmes can easily be found that deal with safety engineering and environmental safety. Regarding the second cycle, six degree programmes that can be seen as applications of Societal Security in higher education were identified, representing engineering, environmental science, law and/or administrative sciences.
Sweden	In Sweden, Societal Security is not an established degree label in higher education. However, it is very well known in academic circles. It exists under several other labels in different disciplinary variations. Regarding the first cycle level, one can identify three relevant degree programmes, all with a strong social/political science focus. Regarding the second cycle level, one can find more variation. At least seven clearly relevant degree programmes were found, representing social sciences, environmental studies and engineering applications of Societal Security (and safety).

First cycle degrees (bachelor's equivalent)

Here we refer to what were above defined as first cycle degree programmes. Typically, these degree programmes lead to a qualification equivalent to a bachelor's degree, although they might be labelled in a variety of ways. A non-exhaustive list of such programmes in the BSR is presented in Table 4.

Table 4. Selected first cycle degree programmes in Societal Security

HEI	Degree label*	ECTS	Duration	Language**	Main disciplinary focus
Denmark					
University College Copenhagen	Bachelor in Catastrophe and Risk Management		3.5	DK	Social sciences
Estonia					
University of Tallinn	Environmental management****	180	3	EE	Natural/social/environmental sciences
Finland					
Laurea University of Applied Sciences	Bachelor's Degree Programme in Safety, Security and Risk Management (Bachelor of Business Management, BBA)	210	3.5	EN	Social/business sciences
South-Eastern Finland University of Applied Sciences	Security Education, Polytechnic Degree in Business Administration	210	3.5	FI	Social/business sciences
Emergency Service Academy	Rescue Leadership	240	4	FI	Mixed/vocational
Germany					
Hamburg University of Applied Sciences	Rescue Engineering Bachelor of Engineering B.Eng.)	210	3.5	DE	Engineering
Magdeburg-Stendal University of Applied Sciences	Safety and Hazard Defence, Bachelor of Science	210	3.5	DE	Engineering
Iceland					
University of Iceland	Civil and Environmental Engineering (Bch.)****	180	3	IS	Engineering, only some individual courses focused on risk/reliability engineering
Latvia					
Riga Technical University	Safety Engineering	160	4	LV	Engineering
Fire Safety and Civil Protection College	Fire Safety and Firefighting; Qualification: Fire Safety and Civil Protection Technician	***	3-3.5	LV	Engineering, vocational
Lithuania					
Vilnius Gediminas Technical University	Security Systems Engineering (Bch.)	***	4	LT	Safety engineering
Vilnius Gediminas Technical University	Fire Protection (Bch.)	***	4	LT	Engineering/vocational
Norway					
UiT The Arctic University of Norway	Societal Security and Environment – Bachelor	180	3	NO	Social sciences
UiT The Arctic University of Norway	International Preparedness – Bachelor	180	3 Part-time	NO	Social sciences
UiS University of Stavanger	City Planning and Societal Security	180	3	NO	Mixed social sciences/engineering

Poland					
The Main School of Fire Service	Safety Engineer	240	4	PL	Two tracks: a) Fire Engineer b) Engineer
Russia (North-Western Federal District)					
The Northern Arctic Federal University named after M.V. Lomonosov, Archangelsk	Technological Safety/ Emergency Protection	240	4	RU	Engineering
The Northern Arctic Federal University named after M.V. Lomonosov, Archangelsk	Technological Safety/ Safety of Technological Processes and Production	240	4	RU	Engineering
Murmansk State Technical University (MSTU)	Technological safety/ Environmental protection; Protection in emergency situations	240	4	RU	Engineering
Murmansk Arctic State University (MASU)	Environmental safety and nature management	240	4	RU	Social sciences/Environmental science
Saint Petersburg State University of Architecture and Civil Engineering (SPbGASU)	Technological safety	240	4	RU	Engineering
Saint Petersburg University of State Fire Service of Emercom of Russia	Technological safety (focus on 'Fire safety'), Bachelor	***	4	RU	Engineering
Saint Petersburg University of State Fire Service of Emercom of Russia	Fire Safety, Specialist	***	5	RU	Engineering
Saint Petersburg University of State Fire Service of Emercom of Russia	Economic Security, Specialist****	***	5	RU	Engineering
Sweden					
Mid Sweden University	Risk and Crisis Management Programme, Bachelor	180	3	SE	Social sciences
University of Karlstad	Environment and Safety	180	3	SE	Social sciences
Swedish Defence University	Political Science with a Focus on Crisis Management and Security - Bachelor's Programme	180	3	SE	Social sciences

* English translation if the degree label is in another language

** EN refers to the fact that the *official* teaching and degree language is English

*** Information on ECTS not available on the HEI's website

**** Only very loosely connected to Societal Security or highly specialised

Second cycle degrees (master's equivalent)

A second cycle degree is more appropriate for crystallising the core elements of higher education in Societal Security. Second cycle degree programmes are typically more concise, avoiding generic courses and focusing instead on a few key areas. A second cycle degree requires a first cycle degree – in the same or a related field – and leads to a degree equivalent to a master's degree, although the degree might be labelled differently depending on the discipline. To illustrate the current state of affairs in the BSR (and beyond), Table 5 below presents a variety of second cycle degree programmes, some of which represent Societal Security proper from a holistic perspective, whereas others are only rather loosely connected to the concept of Societal Security.

Table 5. Selected second cycle degree programmes in Societal Security

HEI	Degree label*	ECTS	Duration	Language**	Main disciplinary focus
Denmark					
University of Copenhagen	M.Sc. in Security Risk Management	120	2	EN	Social Sciences
University of Aalborg	Risk and Safety Management, Master	120	2	EN	Engineering
Estonia					
The Estonian Academy of Security Sciences	Master of Internal (Homeland) Security	120	2 Distance	EE	Four tracks: a) Crisis Management b) Internal (Homeland) Security c) Policing d) Agency-specific
University of Tallinn	Environmental Management, M.Sc.****	120	2	EE	Natural sciences
Finland					
Laurea University of Applied Sciences	Master of Business Administration	90	1.5-2.5	FI	Social (business and organisation) sciences
Tampere University	Master of Security and Safety Management	120	2	EN	Two tracks: a) Safety Management and Engineering b) Security Governance (social science-oriented)
University of Jyväskylä	Security and Strategic Analysis – Master	120	2	FI	Social (information) sciences, focus on intelligence studies
Germany					
Rheinische Friedrich-Wilhelms-Universität Bonn	Master of Disaster Management and Risk Governance	120	3 Part-time/ mixed (experience-based)	DE	Social sciences/natural and technological sciences
Carl Remigius Medical School	Crisis and Emergency Management, M.Sc.	90	2	DE	Social sciences
Magdeburg-Stendal University of Applied Sciences	Safety and Hazard Defence, M.Sc.	90	1.5	DE	Engineering

Iceland					
University of Iceland	Civil Engineering, M.Sc.	120	3	IS	Engineering, only some individual courses focusing on risk/reliability engineering (e.g. earthquake focus)
Latvia					
Riga Technical University	Labour (Occupational) Protection – Master****	60	2	LV	Social sciences
Lithuania					
The General Jonas Žemaitis Military Academy of Lithuania	Public Security and Defence, Master of Public Security	120	2	LT	Social sciences
Vilnius Gediminas Technical University	Safety Engineering	90	1,5	LT	Engineering
Klaipėda University	Ecology and Environmental Studies, Master	120	2	LT	Social/environmental sciences
Mykolas Romeris University (MRU)/ Public Security Academy	Emergency Management	120	2	LT	Social sciences/public administration
Norway					
UiT The Arctic University of Norway	Societal Security – Master	120	2	NO	Social sciences
UiT The Arctic University of Norway	Technology and Safety in the High North – Master	120	2	EN	Three engineering tracks: a) Risk and Reliability b) Nautical Science c) Automation
UiS University of Stavanger	Societal Security – Master	120	2	NO	Two tracks: a) Societal Security (social science-oriented) b) Technological Societal Security
UiS University of Stavanger	Master in Risk Analysis	120	2	EN	Two tracks: a) Engineering Risk Analysis and Management b) Social science-oriented Risk Analysis and Governance
UiS University of Stavanger	Experience-based Master in Risk Management and Security/ Safety Leadership	90	1.5 Part-time flexible	NO	Social sciences
Norwegian University of Technology and Science (NTNU, Trondheim)	Reliability, Availability, Maintainability and Safety (RAMS), Master	120	2	NO	Engineering
Norwegian University of Technology and Science (NTNU, Trondheim)	M.Sc. in Safety, Health and Environment	120	2	NO	Engineering
Nord University, Bodø	Preparedness and Crisis Leadership	90	2.5 Part-time	NO	Social sciences

Poland					
The Main School of Fire Service	M.Sc. or Master of Fire Engineering	90	1.5 Stationary and distance alternatives	PL	Two tracks: a) Civil engineering b) Fire engineering
Russia (North-Western Federal District)					
The Northern Arctic Federal University, named after M.V. Lomonosov, Archangelsk	Environmental Risks Management in the Arctic	120	2	EN	Safety and environmental engineering, law
Murmansk State Technical University (MSTU)	Technological safety/ Environmental safety of water bodies in the Arctic	***	2	RU	Engineering
Saint Petersburg State University of Architecture and Civil Engineering (SPbGASU)	Technological safety	***	2	RU	Engineering
Saint Petersburg University of State Fire Service of Emercom of Russia	Technological Safety (Fire Safety), Master	***	2	RU	Engineering
Saint Petersburg University of State Fire Service of Emercom of Russia	Legal aspects of Life Support Safety, Master	***	Distance	RU	Law
Saint Petersburg University of State Fire Service of Emercom of Russia	State and Municipal Administration (profile: material and technical safety), Master	***	Distance	RU	Administrative sciences, law
Sweden					
Lund University	Disaster Risk Management and Climate Change Adaptation - Master's Programme	120	2	EN	Social sciences
Lund University	M.Sc. in Risk Management and Safety Engineering	120	2	SE	Engineering
Lund University	Master's Programme in Human Factors and System Safety (for professionals)	60	1	EN	Social sciences

Lund University	International Master Programme in Environmental Studies and Sustainability Science	120	2	EN	Social sciences
University of Karlstad	Risk Management in Society	120	2	SE	Social sciences
Swedish Defence University	Master's Programme in Politics, Security and War: M.Sc. in Political Science/M.Sc. in War Studies	120	2	EN	Social sciences, two tracks: a) Political Science with a focus on Crisis Management and Security b) War Studies
Swedish Defence University	Leadership and Management for Defence, Crisis Management and Security - Master's Program	120	2	SE	Social sciences

* English translation if the degree label is in another language

** EN refers to the fact that the official teaching and degree language is English

*** Information on ECTS not available on the HEI's website

**** Only loosely connected to Societal Security and/or highly specialised

Table 5 is, however, not self-explanatory when it comes to determining which of the degree programmes represent Societal Security as a holistic discipline, and what constitutes the scope of the degrees. We therefore discuss below in some detail the curricula of these programmes, in order to identify the core courses and areas of study.

3.3 Curricula: What is taught and learned, and how?

Curriculum (or curricula) does not have a shared meaning and functions in higher education.⁷⁶ For our rather descriptive purposes, we can nonetheless define it simply as “a set of courses constituting an area of specialization.”⁷⁷ Looking at curricula from a comparative perspective helps us to understand what is meant by Societal Security (or by differently labelled versions of the degree programmes), what kind of issues are taught and learned, and how the studies are organised.

What are the core areas?

Table 6 summarises the basic elements of each curriculum in terms of the most relevant selected *second cycle* degree programmes, already presented in Table 5. Furthermore, we include in our mapping only the mandatory courses, which can be understood as the core of the respective degree curricula.

As Table 6 shows, there are some countries/HEIs where we can find degree programmes that provide more specific or professional/vocational degrees, whereas some HEIs could be seen as offering Societal Security degrees proper, due to the holistic focus in their course repertoire.

Table 6. Mandatory curricula in selected Societal Security second cycle degree programmes

HEI	Degree label*	Alternative tracks	Mandatory Courses (ECTS**)
Denmark			
University of Copenhagen	M.Sc. in Security Risk Management		Security Studies (7.5) Organisation and Risk (7.5) Political Risk Analysis (7.5) Knowledge Production and Evaluation (7.5) Security Risk Management (7.5) Master's Thesis Seminar and Master's Thesis (30)
Aalborg University	Risk and Safety Management, Master		Industry Standards and Legislation (15) Systems Engineering (5) Applied Statistics and Probability Theory (5) Risk Analysis (5) Risk Analysis and Management (15) Risk Management (5) Decision Making (5) Operational Risk Management in Projects (15) Simulation of Emergencies (5) Emergency Management (5) Master's Thesis (30)
Estonia			
The Estonian Academy of Security Sciences	Master of Internal (Homeland) Security (distance)	The common part	Strategic Management (8) Research Methodology and Research Seminar (8) Academic Writing and Research Seminar (6) Data Analysis (5) Legal Regulation of Internal Security (5) Cyber Security, Privacy and Data Protection (5) Internal Security Policy Development and Cooperation (5) Hostile Influence, Psychological Defence and Media Communication (4) Security Theories and Their Research Applications (5) Security and Hybrid Threats and a Broad Approach to National Security Master's Thesis (30)
		Crisis Management	Crisis Communication and Psychology (5) Crisis regulation and management (7) Risk management and business continuity (5) Emergency preparedness (4)
		Internal Security	Knowledge management in security (2) Organized Crime and Money Laundering (4) Border Security and Migration Management (5) Law of the Sea in Conflict (4) Terrorism and International Missions (6)
		Policing	Knowledge Management in Security (2) Criminal Analysis (2) Organized Crime and Money Laundering (4) Border Security and Migration Management (5) Current Problems of Criminal and Penal Policy (3) Police Management and Location in the System of Government (5)
		Agency-specific orientation	(21 specialised ECTS, subjects not defined)
Finland			
Laurea University of Applied Sciences	Master of Business Administration		Individual and Organisational Safety/Security Behaviour (5) Business Continuity (5) Strategic Leadership (5) International Security Leadership (5) Cybersecurity Leadership (5) Emerging Technologies in Security/Safety Leadership (5) Master's Thesis (30)
Tampere University	Master of Administrative Sciences	Safety Management and Engineering	Safety Management and Engineering (20) Systems RAMS Engineering (5) Systems Reliability Centred Maintenance (5) Information Security Management (5) Safety Engineering (5) Enterprise HSEQ management (5)

			<p>Safety and Risk Analysis (5) Master's Thesis Seminar (5) Master's Thesis (30)</p>
		Security Governance (social science-oriented)	<p>Security Governance (20) Societal Security: Contemporary Challenges (5) Governance of Security (5) Approaches to International Security Studies (5) Current Themes in International Security (5) Global and EU Security Governance (5) Crisis Management and Leadership (5) Master's Thesis Seminar (5) Master's Thesis (30)</p>
University of Jyväskylä	Security and Strategic Analysis – Master		<p>(Security and Leadership, incl.:) Concept of Security (5) Crisis, Conflicts, and Security (5) History of organisational and business leadership (5) (Strategic Intelligence, incl.:) Basics of Intelligence (5) Intelligence Analysis (5) Intelligence Products and Governance by Knowledge (5) Methodologies (5 + 5) Master's Thesis Seminar (5) Master's Thesis (30)</p>
Germany			
Rheinische Friedrich-Wilhelms-Universität Bonn	Master of Disaster Management and Risk Governance (part-time/mixed)		<p>Basics and Terms of Disaster Risk Reduction and Disaster Management (5) Social Science Basics and Methods (5) Natural Sciences and Engineering Basics and Methods Specialization (5) Risk Analysis and Risk Communication (5) Selected Concepts and Measures of Disaster Risk Reduction (5) Public Health, Medical and Psychosocial Prevention and Emergency Aid (5) Risk and Crisis Communication (5) Dealing with Special Risks (5) Disaster Management Leadership (5) Crisis and Security Management with Staff Exercise (10) Master's Thesis (30)</p>
Carl Remigius Medical School	Crisis and Emergency Management, M.Sc.		<p>Scientific Methodology (5) Emergency Medicine: Triage & Life Support in Operations (5) Mission & Emergency Care (5) Crisis Management & Medical Hazard Defense (5) Operational Planning (5) Coordination (5) Personnel Management in Crisis and Emergency Management (5) Legal Aspects in Crisis and Emergency Management (5) Intercultural Action & Ad Hoc Qualification of Emergency Services (10) Applied Scientific Methodology in The Context of Crisis and Emergency Management (5) Digital & Analog Corporate Security (5) Emergency Medicine in the Context of Staff Work (5) Extended Ability to Act Abroad (5) Thesis and Colloquium (20)</p>
Magdeburg-Stendal University of Applied Sciences	Safety and Hazard Defence, M.Sc.	Fire Protection	<p>Further Mathematics and Probabilistics Safety Research and Practice Heating Technology Risk Prevention and Emergency Provision Extension of Structural Fire Protection Fire and Explosion Protection in Industry</p>
		Industrial Safety	<p>Further Mathematics and Probabilistics Safety Research and Practice Fluid and Heating Technology Industrial Safety Plant Safety Law</p>

Latvia			
Riga Technical University	Labour (Occupational) Protection – Master****		Basics of Labour Protection Law (3) Labour Protection and Safety (5) Basics of Occupational Health and Occupational Medicine (3) Business Economics (3) Business Management (2) Work Psychology and Ergonomics (2) Environmental Protection (2)
Lithuania			
The General Jonas Žemaitis Military Academy of Lithuania	Public Security and Defence, Master of Public Security		Contemporary Society Studies (8) National Security and Prevention of National Security Threats (8) Scientific Research Methodology (7) Statistical Analysis in Scientific Research (7) Civic Education Studies (6) Intelligence Studies (6) Strategic Communication (6) Modern Military Conflict Studies (8) Terrorism Studies (6) Information Security Studies (6) War and Peace Studies (8) Master's Thesis Seminar (6) Master's Thesis (30)
Vilnius Gediminas Technical University	Safety Engineering, Master		Master Graduation Thesis 1 (3) Computer Aided Design (9) Fundamentals of Research and Innovation (3) Burning Processes and Fire Simulation (9) Master Graduation Thesis 2 (3) Safety and Management of Salvage Operations (with course work) (9) Safety in Production Processes (9) Forecasting Fires and Accidents and Risk Management (with course work) (9) Master Graduation Thesis (24) Management of Occupational Stress (6)
Klaipėda University	Ecology and Environmental Studies, Master		Environmental Risk Assessment and Management (6) Marine and Coastal Management (6) Statistical Methods in Sea Ecology (6) Management of Aquatic Ecosystems and Living Resources (6) Biodiversity and Ecosystem Functioning (6) Application of GIS and Spatial Analysis Methods in Marine and Coastal Research Studies (6) Methodology of Scientific Work, Project Preparation, Scientific Communication (6) Legal Regulation of Environmental Protection in the European Union (6) Research Work (6) Blue Biotechnology (6) Blue Economy (6) Research Work (6) Master's Thesis (30)
Mykolas Romeris University (MRU)/ Public Security Academy	Emergency Management, Master Part-time		Research Methodology (6) Emergency Management Theory (6) Security policy (6) Comparative Analysis of Public Administration (6) Master's Thesis (6) Legal Regulation Of Emergency Management (6) Comparative Analysis Of Civil Service (6) Information Crisis Management (6) Master's Thesis I (6) Risk Management (6) Public Sector Reform Policy (6) Crisis Psychology and Conflict Resolution (6) Master's Thesis II (12)
Norway			
UiT The Arctic University of Norway	Societal Security – Master		Quantitative methodologies (10) Qualitative methodologies (10) Crisis Management (10)

			Risk Assessment and management (10) Resilience (10) Safety Management and Accident Investigation (10) Master's Thesis (30)
UiT The Arctic University of Norway	Technology and Safety in the High North – Master		Reliability Engineering (10) Stochastic Processes (10) Safety Management and Accident Investigation (10) Advanced Techniques for Risk and Reliability (10) Cold Climate Engineering (10) Master's Thesis (30)
UiS University of Stavanger	Societal Security – Master	Specialisation in Societal Security	Philosophy of Science and Research Methods (10) Social Science Research Methods (10) Risk and Societal Security (10) Crisis Management (10) Infrastructure and Vulnerability (10) Risk-based Management (10) Master's Thesis Seminar (0) Master's Thesis (30)
		Specialisation in Technological Societal Security	Numerical Modelling (10) Risk and Societal Security (10) Crisis Management (10) Infrastructure and Vulnerability (10) Risk-based Management (10) Technical Security Systems (10) Master's Thesis Seminar (0) Master's Thesis (30)
UiS University of Stavanger	Master in Risk Analysis	Risk Analysis and Governance, International Master's degree Programme	Philosophy of Science and Research Methods or Probability and Statistics (10) Foundations of Risk Analysis and Governance (10) Risk, Society and Governance (10) Risk Management, Communication and Policy (10) Risk Assessment and Decisions (10) Selected Topics in Risk Management or Reliability (10) Master's Thesis (30)
		Engineering Risk Analysis and Management	
UiS University of Stavanger	Experience-based Master in Risk Management and Security/ Safety Leadership		Risk, Security/Safety and Vulnerability (20) Master's Thesis (30)
Norwegian University of Technology and Science NTNU, Trondheim	Reliability, Availability, Maintainability and Safety (RAMS), Master		Safety and Reliability Analysis (7.5) Maintenance Management (7.5) Risk Management in Projects (7.5) RAMS Engineering and Data Analytics (7.5) Elements of Model Engineering (7.5) Risk Analysis (7.5) Methods and Tools in Safety Management (7.5) Industrial Systems Engineering (7.5) Applied Statistics (7.5) Experts in Teamwork courses (7.5) Reliability, Availability, Maintainability and Safety, Specialization Project (15) Data Driven Prognostics and Predictive Maintenance (7.5) Design and Reliability Analysis of Digitalized Safety Systems (7.5) Safe Operation and Maintenance (7.5) Dependability and Performance Design (7.5) Master's Thesis (30)
Norwegian University of Technology and Science NTNU, Trondheim	M.Sc. in Safety, Health and Environment		Programming and Numerics (7.5) Working Environment (7.5) Environmental Management and Corporate Strategy (7.5) Safety Management (7.5) Methods and Tools in Safety Management (7.5) Health, Safety and Environment, Specialization Project (7.5) Health, Environment and Safety, Specialization Course (7.5) Master's Thesis (30)
Nord University, Bodø	Preparedness and Crisis Leadership, Master		Leadership of Change and Crisis (7.5) Preparedness Organisations and Crisis Management (7.5) Strategic Media Management (7.5)

			Preparedness and Crisis Leadership (7.5) Digital Preparedness (7.5) Applied Methods (7.5) Master's Thesis (7.5)
Poland			
The Main School of Fire Service	Safety Engineering and Civil Protection Faculty – Master		Foreign Language Course Principles of Running a Business Selected Issues from Philosophy and Ethics Methods and Techniques of Human Resource Management Cooperation with the Media in the Activities of the State Fire Service Methodology of Scientific Research in Safety Engineering Mathematical Decision Descriptive Statistics Information Management Application of Modern Techniques in Safety Engineering Modelling of Fires Analysis of the Effects of the Explosion Contemporary Problems of Environmental Engineering Management of the Operation of Rescue and Firefighting Equipment Reliability and Safety of Structures Spatial Information Systems Managing Rescue Operations Operational Preparation in Civil Protection Contemporary Terrorist Threats Risk Analysis in Safety Engineering Master's Seminar Master's Thesis
Russia (North-Western Federal District)			
The Northern Arctic Federal University, named after M.V. Lomonosov, Archangelsk	Environmental Risks Management in the Arctic		Basic Module (5) Mathematical and Instrumental Methods in Ecology and Environmental Management (15) Environmental Law (10) Environmental Monitoring (15) Environmental Management and Nature Protection (15) Risk Management (15) Clean Production Technologies (15) Master's Thesis (30)
Murmansk State Technical University (MSTU)	Technological safety/ Environmental safety of water bodies in the Arctic		Methodology of Scientific Knowledge Foreign Language Calculation and Design of Security Systems Risk Management System Analysis and Modelling of Processes in the Technological Sphere Security Expertise
Saint Petersburg State University of Architecture and Civil Engineering (SPbGASU)	Technological Safety (Fire Safety), Master		Information Technology in the Field of Safety/Security Economics and Safety Management Risk Management Systems Analysis and Modelling Safety Expertise Safety Monitoring Calculation and Design of Safety Systems Physicochemical Foundations of Natural and Anthropogenic Processes in the Technological Sphere Geo-Ecology and Earth Science Organizational Foundations of Technological Safety Sphere Seismic Safety Safety Management of Natural and Technical Systems Risk Management Technologies Safety Management Systems for Technological Facilities Safety Monitoring of Facilities Design of Safety Management Systems Monitoring and Waste Management in Megacities
Sweden			
Lund University	Disaster Risk Management and Climate Change		Societal Resilience (7.5) Foundations for Risk Assessment and Management (7.5) Capacity Development (7.5)

	Adaptation - Master's Programme		Direction and Coordination in Disaster Management (7.5) Risk-Based Land Use Planning (7.5) Climate Smart Risk Reduction (7.5) Preparedness and Planning (7.5) Risk Perception, Communication and Human Behaviour (7.5) Humanitarian Logistics (7.5) Research Methodologies (7.5) Master's Thesis (30)
Lund University	M.Sc. in Risk Management and Safety Engineering		People, Technology, Organization and Risk Management (7.5) Fundamentals of Risk Analysis and Management (7.5) Risk Analysis in Security (7.5) Statistical Methods for Safety Analysis (7.5) Risk Analysis for Health and the Environment (7.5) Risk Management Process (15) Master's Thesis (30)
Lund University	M.Sc. in Human Factors and System Safety (for professionals)		The New View of Human Factors and System Safety (10) The Sociology of Safety and Accidents (10) Accountability and Learning from Failure (10) Methods in Safety Science (15) Master's Thesis (15)
Lund University	International Master Programme in Environmental Studies and Sustainability Science		Earth Systems Science (10) Social Theory and Sustainability (10) Sustainability Science (10) Governance of Sustainability (7.5) Urban and Rural Systems and Sustainability (10) Economy and Sustainability (7.5) Knowledge to Action (5) Master's Thesis (30)
University of Karlstad	Risk Management in Society		Introduction to Risk Management in Society (7.5) Personal Safety I: Injury Analysis and Risk Assessment (7.5) Management of Natural Disasters 1 (7.5) Personal Safety II: Injury Prevention and Safety Promotion Work (7.5) Management of Natural Disasters 2 (7.5) Theory Formation in Risk Management (7.5) Quantitative Scientific Method (7.5) Qualitative Scientific Method (7.5) Master's Thesis (30)
Swedish Defence University	Master's Programme in Politics, Security and War	Political Science with a focus on Crisis Management and Security	Politics, Security and Crisis (15) Methods (15) Master's Thesis (30)
		War Studies	The Study of War and Conflict (15) Methods (15) Master's Thesis (30)
Swedish Defence University	Leadership and Management for Defence, Crisis Management and Security - Master's Programme		Leadership in Stressful Conditions - Theoretical Foundations (7.5) Management Science - Theoretical Foundations (7.5) Individual Perspectives on Leading (7.5) Qualitative And Quantitative Methods With Theory Of Science (7.5) Organizational Perspectives on Leadership (7.5) Inter-Organizational Perspectives on Leadership (7.5) Synthesis - From Individual to Social System (7.5) Advanced Course in Qualitative and Quantitative Methods with Theory of Science (7.5) Master's Thesis (30)

* English translation if the degree label is in another language

** When available on the website of the respective degree programme

A key observation is that although all the main concepts related to Societal Security have their own scholarly roots, they essentially look at the same phenomenon from different perspectives. This, while having positive consequences, at the same time means that there is overlap, and perhaps an implicit contradiction between courses. This is not easy to resolve administratively, nor without any major cross-disciplinary debate.

Looking at the degree programmes above, a few mandatory course subjects stand out as seemingly common across various degree programmes, which will be discussed below in general terms.⁷⁸ In particular, concepts and research areas related to risk management, crisis management, safety management, and resilience seem to be consistently offered across various degree programmes. One could say that these core courses represent specifically social science and engineering perspectives.

Risk management

As seen in Table 6 above, 'risk' is the concept that appears in most second cycle Societal Security degree programmes. The concept of risk, in its various applications and representations, is a well-established multidisciplinary but still rather engineering-oriented academic subject, informed by numerous peer-reviewed journals and textbooks.⁷⁹ In terms of the ISO 31000 Risk Management standard, the umbrella concept is risk management, whose main component is risk assessment, which is in turn divided into risk identification, risk analysis, and risk evaluation.⁸⁰ A somewhat rival conceptualisation of risk is offered by the Society of Risk Analysis, where the umbrella concept is instead risk analysis, understood as "a distinct science covering risk assessment, perception, communication, management, governance and policy in the context of risks of concern to individuals, public- and private-sector organizations, and society at a local, regional, national, or global level".⁸¹ While the former definition is well-established in more practical and organisational applications of risk, the latter represents the definition often used by the academic community. This conceptual and partially methodological disagreement is to some extent harmful and unnecessary, but the basic understanding remains more or less the same. The study of risk is predominantly focused on risk analysis, prevention and mitigation, using quantitative, semi-quantitative and qualitative techniques and methods.

Risk governance

The above technological or management approach to risk, however, is challenged by the broader risk governance⁸² approach. This approach can be understood as a constructivist-normative school within Societal Security, with roots in both older risk society discourse and European studies multilevel governance discourse. Risk society discourse, going back to the early 1990s, emphasises *world risk society* as a new phase of humanity. The current mega-risks and the resulting global crises are, in one way or another, artificial and human-induced, and yet they are also amorphous in that no one is responsible for them. Nor is there any clear target group or place for their occurrence. These new and emerging risks are the result of organised irresponsibility, an extensive phenomenon that has become part of our daily lives.⁸³ Issues such as climate change, global financial crises, global terrorism,⁸⁴ and most recently Covid-19, are proof of the existence of this kind of world risk society.⁸⁵

The risk governance school follows these lines and therefore draws on this 'tragedy of the commons' understanding, but also emphasises that risks are actually not unambiguous since they are always related to conflicting perceptions, values and interests. Risks must therefore be seen as socially constructed and often politicised discourses, which are typically underpinned by a strategy of change. These circumstances therefore require a multi-level risk governance system based on horizontal communication and the search for common solutions based on the widest possible cooperation between international organisations, as well as governmental and non-governmental actors. In a globalised world, such risks become systemic risks where complex and unpredictable dependencies and interdependencies lead to cross-sectoral and transboundary cascading effects.⁸⁶

Crisis management

As seen in Table 6 above, crisis management can be found, in different variations and under different labels, in the mandatory curricula in most second cycle Societal Security degree programmes. These courses are typically more social science-oriented, even though the concept also includes many technological elements.

As a whole, crisis management is a broad multidisciplinary field, typically understood as being at the core of Societal Security. While there is no one theory of crisis management, the field has a few must-read classics.⁸⁷ These classics typically pay greater attention to risk rather than materialised crises, but several recent textbooks, particularly in the fields of public policy and political decision-making, focus more on crises in terms of managing them from a more holistic perspective.⁸⁸

For higher education purposes, Societal Security is often discussed in terms of the crisis management cycle.⁸⁹ To this end, the cycle consists of at least three phases: pre-crisis, during-crisis and post-crisis. Thus, if a crisis can be understood as a time-limited phenomenon, and as a deviation from the normal state of affairs, from the cycle perspective crisis management cannot. It also covers the normal state of affairs before and after the crisis. The concept is not only temporal in nature but also phase-dependent, with different elements and emphases at play during the prevention, preparedness, response, and recovery phases of a crisis. Currently, also post-crisis learning has become a recognised part of crisis management. This holistic approach in turn means that crisis management, like the recently popularised concept of resilience (see below), tends to become an umbrella concept for Societal Security education as a whole.

Safety management

Safety management or many of its elements, as seen in Table 6, is another common topic in second cycle degree compulsory curricula. Simply put, safety management is an organisational function which ensures that all safety risks have been identified, assessed and satisfactorily mitigated.⁹⁰

Safety management as a field of study hosts some of the most comprehensive and renowned theoretical schools within Societal Security. A strong tendency is to emphasise why things go wrong in complex systems.⁹¹ Another orientation, differentiating between Safety I and Safety II, claims that the former presumes that “things go wrong because of identifiable failures or malfunctions of specific components: technology, procedures, the human workers and the organisations in which they are embedded.” Safety II, instead, “assumes that everyday performance variability provides the adaptations that are needed to respond to varying conditions, and hence is the reason why things go right.”⁹² The latter is therefore more about adaptive capabilities than pre-emptive efforts.

As is clear from the above definition, risk analysis is an essential element of safety management, as well as other fields such as reliability engineering. If the Safety II elements are added to safety management, it essentially overlaps with the concept of resilience. Another issue connected to safety management is accident investigation,⁹³ which can also be seen as an element of crisis management in terms of post-crisis learning, perhaps with the difference of a smaller event scale. In a way, safety management, via safety management systems (SMS), connects proactive risk management with reactive accident or incident investigation,⁹⁴ with the aim of making an organisation, procedure or system safer.

Resilience

Lastly, we must point out that the concept of resilience has rapidly become the new catchword in a number of academic fields (see Appendix 3) and an established part of the political jargon related to Societal Security. In the discussions reviewed in Section 2 above, we see that the concept is frequently used within Societal Security debates as a central element of it or even as the very same concept. Although resilience is still an up-and-coming curriculum item, we have already found that some universities in the BSR use the term explicitly in the labels for degree programmes and individual courses. In particular, in the second cycle elective/optional courses (not reflected in Table 6), resilience as a study object in some form or another can easily be found. One can expect it to become a mainstream concept in mandatory degree courses within some years, even if this is not always the case yet.

In academic terms, resilience is increasingly used as a theoretical research paradigm in political science, sociology, economics, psychology, organisation studies, business studies, ecological studies, engineering, and so forth. Consequently, the concept has entered higher education degree programmes in many variations. Practical and political applications of resilience are apparent in fields such as disaster risk management, safety management, environmental protection, climate change adaptation, critical infrastructure policies, business continuity, spatial development, urban planning, public management, health policies, national security, and psychology, to name a few.

Currently, one can distinguish a number of resilience domains that have developed their own approaches, and thus have their own ontological, epistemological and normative assumptions, and their respective methodologies. While these can represent different 'resilience schools', we also find that within these domains there may exist fiercely societal/community resilience; organisational resilience; technological/engineering resilience; team resilience; psychological resilience; economic/regional resilience; and ecological/environmental resilience. Considering the span of disciplines in the aforementioned list, the field is quite interdisciplinary, which provides an opportunity for cross-domain comparison and learning.

In contrast to risk management but in concert with the broad idea of crisis management, the concept of resilience covers the before-the-event, during-the-event and after-the-event phases.⁹⁵ In so doing, it overlaps considerably with the concepts of risk management, crisis management and safety management, however. While it is also an overall umbrella concept like crisis management, resilience perhaps differs from the latter in that the research on resilience includes a clear impetus for measuring the resilience of systems, especially their adaptive and recovery ability.

Tailorability and free-choice courses

Most of the degree programmes presented above are to some extent tailorable. Programmes themselves might be tailored in terms of two or more tracks, while sharing some basic courses. In some cases, the tracks follow a rather clear social sciences versus engineering/technological division. In other cases, the tracks follow more professional orientations, such as different tracks for generic crisis managers, rescue officers, police, and so on.

Many of the degree programmes also include electives – courses that students are free to choose providing they accumulate a certain predefined number of ECTS. Such electives often have to be taken during one semester. Again, we find several variations of what this means in precise terms. In some cases, the electives constitute an explicitly defined list of courses from which the student must earn a

certain number of ECTS. These are in one way or another courses closely related to the subject matter but that typically provide a more specialised or in-depth perspective. Examples include courses on decision-making, specific risks or emergencies, the international or global dimensions of risks such as global climate change adaptation, pandemic studies, terrorism, and so forth. Another way in which electives are offered entails there being no ready-made list of possible elective courses, although some recommendations may be given. In the most liberal systems, a student can choose almost any course in any faculty, and sometimes at any university in that particular country or abroad, as long as they can justify to the degree programme board that the course is related to the field and/or their professional ambition. This might include courses within other fields (e.g. sociology, psychology or business studies), or specific methodology courses or techniques (e.g. statistics, in-depth quantitative methods), and so forth.

Internships

Facilitated internships, typically ranging from a few months to a semester, and quantified as ECTS, are rather typical in applied science universities and profession-oriented HEIs. They are often part of the compulsory package that the student has to complete. Yet one can also find facilitated internships in some research universities. An internship entails working in the respective industry or public administration or service within the respective field. In some cases, this practical experience is accompanied by the obligation to prepare a report on the lessons learned. This system presupposes effort, not only on the part of the student, but also on the part of the respective HEI, particularly via a well-designed programme and a good network with industry and public administration.

As a special case, in one of our selected cases above, the HEI had managed to negotiate a half-year salary-based employment contract with the respective industry for all students *after* their graduation.

Study formats

Most of the above-presented degree programmes are typical full-time classroom-based studies. However, due to Covid-19 in 2020/21, digitised learning formats have temporarily replaced classroom studies in most countries. This experience will most probably lead to some institutionalised, digitised solutions becoming mainstream in the years to come, to complement, or even replace, the traditional physical classroom. The online course that will be developed as part of the NEEDS project can help to address this emerging need. However, even with increasing digitisation, courses that are related to fields like fire safety or other similar engineering fields that may demand material experiments in laboratories will still require a degree of physical attendance.

In most countries, special degree programmes exist for individuals already active or employed in safety or security professions. Such programmes are typically distance/in-service/part-time based. These programmes often allow for very specific interests to be tailored into the individual study plan. In some HEIs, this type of education is available for students without any previous professional experience or previous studies in the field.

When it comes to more specific study formats, we can find many applications beyond typical lectures and seminars. These may include, not only team or individual homework but full-fledged projects and internships, as mentioned above. One degree programme, identified above, includes 3x15 ECTS 'projects' in its compulsory programme in addition to a master's thesis, which represents a large individually-tailored independent workload. Another typical study format is participation in some kind

of crisis management exercise, often full-scale exercises with practitioners or sometimes HEI-organised tabletop exercises for the students only.

While these notions reflect educational concepts such as ‘learning with understanding’, ‘active learning’,⁹⁶ or ‘student-centred classrooms’,⁹⁷ in which students explicitly share the responsibility for effective learning alongside instructors, it is not possible to carefully evaluate the characteristics of these approaches on the basis of the level of data in the current investigation (mostly based on internet sources).

As to the master’s thesis writing, it seems that professional/vocational or applied universities often have and encourage close cooperation with industry, and many applied HEIs facilitate this cooperation. This as such is a very positive feature that is not as visible in research universities. This is perhaps due to the challenges in a traditional academic system of integrating problem-solving research tasks from outside, as research-based faculties are typically of the opinion that creating the research problem is an essential part of the research process and cannot be outsourced. However, this close cooperation model with industry or authorities in terms of thesis writing could be developed into a win-win solution, for both industry/authorities and academia alike.

Exchange programmes

Many degree programmes, particularly at the second cycle level and especially in the Nordic countries, include a facilitated exchange semester with foreign universities. This is typically organised in connection with elective courses, which constitute one semester and a respective number of ECTS. Facilitation in this case may include pre-agreed exchange contracts with certain foreign universities or even dedicated courses at the foreign university, which function as elective options. In EU/EEA countries, exchange programmes are often conducted through Erasmus+ or other similar programmes. The arrangements are supposed to be made between faculties/departments and not at the central university administration level.

It is striking that in the field of Societal Security, the respective HEIs in the BSR typically do not fully take advantage of this basically free (for the degree programmes) student (or staff) exchange option. The reasons for this may include a lack of knowledge and collaborative relations between the respective degree programmes, the incompatibility of the degree, and obvious language barriers. As seen in Tables 3 and 4, only a few degree programmes are taught in English, which would arguably be a necessary precondition for cross-border exchange both in terms of sending and receiving exchange students.

However, since many HEIs provide some courses in English, this opens up possibilities for at least one-semester exchanges. Given also that Scandinavian languages (Swedish, Norwegian, Danish) are closely related, and people typically understand each other, this makes exchanges between these countries easier, even if courses are not taught in the native languages.

4. Conclusions

We have drawn a general, albeit selective picture of the state of the art of Societal Security as higher education in the BSR. We started with a rather comprehensive introduction (Section 2) to the concept, noting that it has two roots, one related to identity or ontological security studies and the other to a more functional and practice-oriented approach, focused on enhancing issues such as the resilience of society and public crisis management.

We also discussed Societal Security in terms of whether it constitutes an academic discipline in its own right. While we found many features that are typically associated with an academic discipline, the picture remains mixed and unclear. One issue is that Societal Security is characterised by the multi- and interdisciplinary debate, since it is based on mainly borrowing from other disciplines rather than developing its own theories and methodologies. The discipline's boundaries therefore remain unclear. The fact that there is still not an agreed-upon label for this discipline further contributes to Societal Security's fuzzy identity.

In more practical policy terms, we were able to identify, at least in the BSR, some interest in using the concept of Societal Security, via its English definition, as an umbrella concept for activities within safety and security. The lead partner of the NEEDS project, the CBSS Secretariat, has been facilitating the BSR Civil Protection Network for the past two decades, which is comprised of authorities in this field from its eleven Member States. It was mentioned above that in 2017, the *Directors General for Civil Protection in the BSR*⁹⁸ called for 'a common Societal Security culture' with the aim of building common attitudes towards Societal Security threats and a shared understanding of prevention, preparedness and response, as well as recovery processes in connection with disasters. Already earlier, the concept of Societal Security seems to have been adopted by national and regional research funding programmes as well as, to some extent, by European and international standardisation bodies.

In completing this conceptual discussion, we also formulated our working definition of Societal Security. While taking on board some elements of the former, our working definition is more on the functional side, looking at the different ways of managing risks, crises and disasters in an increasingly complex and interconnected world.

Moving on to mapping the higher education Societal Security programmes (Section 3), we defined our task as concentrating on first and second cycle degree programmes (bachelor's and master's equivalents respectively), following the Bologna Process definitions. While our focus was on 'holistic' programmes in this field, thus excluding some vocational or highly specialised applications of Societal Security education, we made an effort to identify the most relevant programmes in each country. While the disciplinary picture, including programmes in social sciences, engineering, environmental studies, business studies, and so forth, remains fragmented and blurry, we were able to find relevant degree programmes in all countries. Typical Societal Security issues are mostly represented in engineering studies in terms of programmes or courses on risk and reliability engineering, but we were also able to identify Societal Security degrees with a clear social science orientation, albeit mostly only in the Nordic countries.

In order to make sense of this fragmented representation of Societal Security in higher education in the BSR, with the term itself rarely emerging in programme titles, we took a closer look at second cycle curricula. We were able to identify five thematic areas in particular that to us seem to constitute the core of Societal Security degree programmes: risk management; risk society and risk governance; crisis management; safety management; and resilience. It was noted that these concepts and their respective research objects partially overlap, which reflects a field that has fused together as an uneasy combination of different academic traditions. Another notable feature of most degree programmes is that they are tailorable to a considerable extent, with a variety of different tracks and electives.

We also took a look at the practical characteristics of the degree programmes, and briefly discussed issues such as facilitated internships, study formats and facilitated foreign exchange. It can be concluded that Societal Security is a rather practical and flexible field of study in the BSR, where one can rather

easily identify good practices, which also provides an opportunity to further assess the degree programmes and, in so doing, to enhance cross-border cooperation.

If a goal in the BSR is to create a shared Societal Security culture, where are we in terms of higher education? HEIs obviously play a crucial role in educating the next generation of Societal Security professionals. Most of the current academics and professionals in the field of Societal Security have an academic background in more traditional social sciences, engineering, or other disciplines, predating the recognition of Societal Security (under any label) as an academic field or even an emerging discipline in its own right. They have largely learned Societal Security-related concepts and methodologies via their own experience and self-education, rather than via formal mechanisms. Only recently can we identify the emergence of professionals in some countries who have received education focusing on such issues as crises, risks, resilience, safety and security – in the meaning of functional Societal Security – clearly via their degree programmes. Given the increasing importance of these issues, as well as the growing significance of global, transnational and transborder cooperation regarding them, it is of the utmost importance for HEIs and their Societal Security degree programmes to be up to date on the state of the art in this field more generally and, to some extent, comparable with their counterparts in other countries, duly reflecting the transboundary dynamics of risks and crises.

The fuzzy identity of Societal Security and the fact that the concept is actually not widely used in the degree programme titles is an obstacle to the coordinated development of the field or discipline of Societal Security as a higher education concept. Therefore, Societal Security experts should work towards a higher level of consistency in the use of terminology, in order to be able to accumulate and assemble the knowledge into a coherent structure. To work towards this goal, we recommend a systematic increase in cross-border staff and student exchanges, the exchange of good practices and lessons learnt, organising workshops, summer schools and exercises, and keeping an eye on each other's Societal Security degree programmes and curricula to further develop and approximate Societal Security education in the BSR. These identified gaps are some of the elements that the NEEDS project is serving to address.

Appendices

Table 7. Selected definitions of Societal Security & similar/overlapping concepts (Appendix 1)

Concept	Definition (examples)
Societal Security	Protection of society from, and response to, incidents, emergencies and disasters caused by intentional and unintentional human acts, natural hazards, and technical failures. ⁹⁹
Civil defence	The system of protective measures and emergency relief activities conducted by civilians in case of hostile attack, sabotage, or natural disaster. ¹⁰⁰
Civil protection	Measures taken and systems implemented to preserve the lives and health of citizens, their properties and their environment from undesired events. ¹⁰¹
Civil security	Law enforcement, crime fighting and counter terrorism (e.g. activities of police and forensics, customs and border control) and 'first responder' tasks (e.g. firefighting, ambulance/health emergency), as well as the protection of critical infrastructure and utilities. ¹⁰²
Crisis management	Holistic management process that identifies potential impacts that threaten an organisation and that provides a framework for building resilience, with the capability of an effective response that safeguards the interests of its key stakeholders, reputation, brand, and value-creating activities – as well as effectively restoring operational capabilities. ¹⁰³
Disaster risk management	The systematic process of using administrative directives, organisations, and operational skills and capacities to implement strategies, policies and improved coping capacities in order to lessen the adverse impacts of hazards and the possibility of disaster. ¹⁰⁴
Disaster risk reduction	The concept and practice of reducing disaster risks through systematic efforts to analyse and manage the causal factors of disasters, including through reduced exposure to hazards, lessened vulnerability of people and property, wise management of land and the environment, and improved preparedness for adverse events. ¹⁰⁵
Emergency management	The organisation and management of resources and responsibilities for addressing all aspects of emergencies, particularly preparedness, response and initial recovery steps. ¹⁰⁶
Homeland security	Efforts to ensure a homeland that is safe, secure, and resilient against terrorism and other hazards. ¹⁰⁷
Human security	The right of people to live in freedom and dignity, free from poverty and despair. All individuals, particularly vulnerable people, are entitled to freedom from fear and freedom from want, with an equal opportunity to enjoy all their rights and fully develop their human potential. ¹⁰⁸
Internal security	Fighting and preventing serious and organised crime, terrorism and cybercrime, in strengthening the management of our [EU] external borders and in building resilience to natural and human-induced disasters. ¹⁰⁹
Resilience	The ability of a system, community or society exposed to hazards to resist, absorb, accommodate, adapt to, transform and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions through risk management. ¹¹⁰
Risk governance	Risk governance "looks at the complex web of actors, rules, conventions, processes and mechanisms concerned with how relevant risk information is collected, analysed, communicated and how management decisions are taken". ¹¹¹ Governance refers to the actions, processes, traditions and institutions by which authority is exercised and decisions are taken and implemented. Risk governance applies the principles of good governance to the identification, assessment, management and communication of risks. ¹¹²
Risk management	Coordinated activities to direct and control an organisation with regard to risk. ¹¹³
Safety management	Safety management is an organisational function, which ensures that all safety risks have been identified, assessed and satisfactorily mitigated. ¹¹⁴
Soft security	Freedom from non-military threats, challenges, and risks, such as environmental, economic, societal, information and other problems. ¹¹⁵



Figure 1. ‘Cloud’ search of the concepts in Appendix 1 (Appendix 2)
 Prepared with wordart.com Internet programme. Note that this is not a statistically reliable result.

'Resilience' in Web of Science

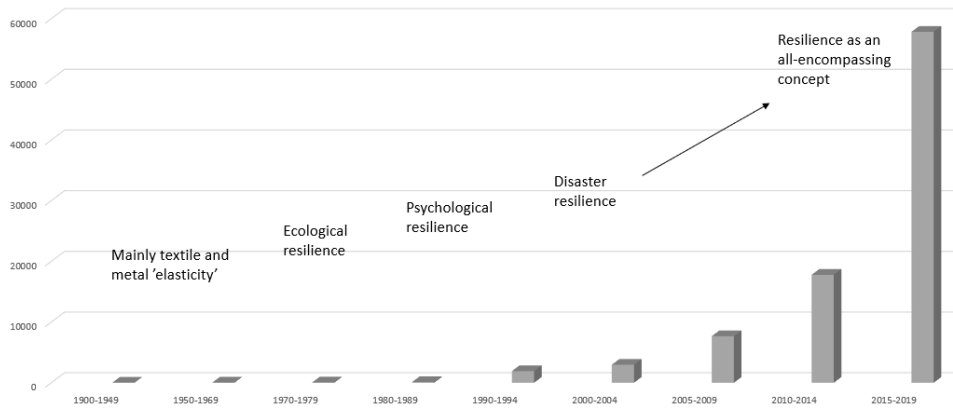


Figure 2. 'Resilience' in Web of Science titles (Appendix 3)

Endnotes and references

¹ While the political level is truly intergovernmental between the respective foreign ministries, in more practical ‘low politics’ collaborative context, such as the thematic expert groups of competent authorities, Germany is typically represented by its northernmost *Länder* and Russia by the North-Western Federal District. See <https://cbss.org/>.

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⁷² For a short summary analysis, see Pursiainen & Medvedev (2005), op. cit. pp. 16-26.

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⁷⁷ Merriam-Webster (n.d.). [Online] Available at: <https://www.merriam-webster.com/dictionary/curriculum>.

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Co-funded by the
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