# Executive Summary

This study addresses the main threats facing the State of Israel in terms of damage to human life and property in the event of an earthquake. The updated reference scenario for which the State of Israel is preparing itself, reflecting an average of strong earthquakes, estimates damage at the level of 7,000 deaths, 8,600 serious injuries, and 170,000 people left homeless. This contrasts with countries that are well prepared for earthquakes, such as Japan, the United States, and Chile, where a strong earthquake may end without loss of human life.

The goals of the study are to identify, map, and conceptualize the regulatory framework for Israel’s preparedness for earthquakes and to assess this framework with reference to formal and actual regulation.

National preparedness for earthquakes includes numerous spheres of preparedness: geology, research and technology, education and science, economics, land uses, existing buildings, infrastructures and transportations, preparedness of local authorities, preparedness in the private sector, search and rescue, functional continuity of the economy, recovery, and so forth. A common division of the spheres of preparedness is based on stages: *prevention* (mitigation[[1]](#footnote-1)), *preparedness for response*, *response*, and *recovery*.

A mapping of the Israeli preparedness system highlights its complexity. The process identified 109 governmental agencies that are highly relevant to preparedness for earthquakes, not including the local authorities. Preparedness also relates to numerous fields of knowledge, including: risk assessment and management, preparedness for disasters, structural and infrastructure engineering, financing, insurance and financial and economic aspects, business management, geology, legal aspects, urban planning, medicine and emergency medicine, rescue, welfare and relief, and cooperation between government, citizens, and businesses.

There is no “off-the-shelf” methodology readily available for the assessment of such a complex system. Accordingly, we developed a purpose-built methodology known as the Regulatory Systems Assessment (RSA), based on general principles for evaluating regulation and on specific principles for evaluating regulation systems as found in the professional and academic literature. These principles include: the mapping of regulation and relevant agencies, analysis of actual activities and local characteristics, a focus on gaps between optimal versus actual circumstances, assessment by reference to criteria and standards, the exercising of discretion by the research team, and the integration of experts and stakeholders in the assessment process.

More specifically, the *Regulatory Systems Assessment* methodology developed in this study is based on a three-stage process that includes mapping the existing situation, mapping the desirable situation, and analyzing the gaps between the two. The methodology also integrates the opinion of experts and stakeholders in the analytical process. It is important to note that since the study constitutes a horizontal review of an extremely broad subject, the methodological goal is to identify the key gaps at a high level of accuracy, but not necessarily at an exhaustive level. It is also important to stress that the gaps themselves are defined differently by different officials and stakeholders. Accordingly, a further goal of the study is to create an essentially agreed-upon picture of the situation.

The implementation of the methodology in the context of preparedness for earthquakes in Israel yielded several significant research deliverables:

1. Comprehensive mapping of the agencies involved in preparedness for earthquakes, including the regulatory relations between these agencies. The map of agencies and organizations with the authority and obligations to cope with earthquakes and emergencies comprises 109 agencies, including headquarter agencies, subordinate agencies, authorities, and organizations.

2. Comprehensive mapping of regulation relevant to preparedness for earthquakes, according to agencies and spheres of activity, including attention to the type of regulation. For the purpose of this mapping we created *an information base for mapping the regulatory system concerning preparedness for earthquakes*. This information base pools all the laws, government resolutions, and regulations, as well as a small number of procedures collected during the research relating to preparedness for earthquakes. In total, the database contains 55 laws, 10 regulations, and 44 relevant government resolutions.

3. Criteria for optimum preparedness for earthquakes. A compilation of 197 criteria divided according to the preparedness themes.

4. Analysis of the gaps between the desirable and actual situation in terms of Israel’s preparedness for earthquakes. The analysis covers all stages of preparedness: prevention (mitigation), preparedness for response, response, and recovery, and focuses on 15 key spheres. The analysis is based on the aforementioned mappings, the compilation of criteria, academic and professional literature, the opinions of those involved in this field in Israel, as given in individual interviews and joint workshops, and analysis by the research team. The analysis identified 46 key gaps.

5. Interactive information base – agencies-spheres-regulation. The information base connects agencies involved in the subject, spheres of activity, and existing regulation. The base clarifies which agencies are involved in which activities and to examine the powers at their disposal.

6. Legal analysis of the existing regulatory system. This section addresses the legal gaps in the regulatory system for coping with earthquakes as identified during the research process, and emphasizes the legal dimension of the gaps between the desirable and actual situation. A total of 16 legal gaps are described.

7. Discussion and concluding analysis of the gaps, raising key aspects that emerge from the gaps.

The analysis of the gaps covers the four periods of preparedness: prevention (mitigation), preparedness for response, response, and recovery. As noted, however, the analysis focused on 16 spheres and raised 46 gaps. Experts and stakeholders discussed these gaps in a workshop and ranked them according to the following criteria: Consensus on the existence of the gap, the importance of the gap, and the urgency of addressing the gap. The results of the ranking showed a high level of general Consensus regarding the existence of the identified gaps and, in most cases, reflected a high level of importance and urgency. The methodology proved effective in locating significant gaps for an expansive and complex issue.

A general analysis of the gaps showed that **attention to spheres in the response and preparedness for response stages is much more advanced than in the prevention and recovery stages**. For the first two spheres, there is an integrated national body with knowledge and capabilities (the National Emergency Management Authority – NEMA), as well as executive agencies with capabilities and relevant experience. By contrast, the prevention (mitigation) stage lacks basic components for effective action, including: the imposition of responsibility on a government agency to promote the subject of strengthening private residential buildings, and intensive integration and leadership, including leadership in the sphere of risk management and in the engineering sphere, in order to promote effective mitigation based on mapping, prioritization, and the use of modern strengthening technologies, together with a reasonable pace of implementation. This gap is illustrated by the fact that the NEMA has dozens of professional workers, whereas the Steering Committee for Preparedness for Earthquakes has just one professional worker. The sphere of prevention effectively lacks an operative agency with powers and capabilities as well as practical expertise, as distinct from a steering committee, in order to lead the subject on the systemic and professional level. **Since the mitigation stage is the most important stage in terms of reducing the scope of injuries, the ramifications of these systemic weakness are the following: in the event of a serious earthquake**, while rescue teams, volunteers, and relatives work to save individuals, **hundreds or thousands of people can be expected to die due to ineffective prevention**.

**The gap is not necessarily a budgetary one, but rather a lack of investment in the lead mechanism**. Hundreds of millions of shekels have been budgeted for mitigation processes, but in the absence of intensive integration and leadership based on advanced risk management and engineering expertise, these budgets are not used optimally, or not all. This reality may be related to a tendency to avoid further expanding the governmental system, but in this instance the weakness of the relevant government system leads to a much greater economic inefficiency.

Specifically speaking, the analysis of the gaps in the *prevention stage* identified inadequate preparedness presenting a risk to the lives of thousands of people; the failure to impose responsibility on a governmental agency for advancing the issue of the reinforcing of residential buildings, constituting an obstacle to saving lives and, in our opinion, representing a failure in governmental operations; an urgent need to strengthen the integration of prevention (mitigation); a horizontal and systemic need for engineering expertise; and an unclear level of preparedness in infrastructure facilities and hazmat facilities.

The analysis of the gaps in the *preparation for response and response stages* reflected the presence of important preparedness components for response. The main gaps are: the improvement of existing capabilities, particularly in the local authorities; improving the manner in which the complex system of distinct agencies works together; and addressing various legal defects and clarifying powers and hierarchies between different agencies. The gap between the local authorities is particularly evident; some authorities have a very low level of preparedness, and there is a need for more effective systemic attention to this aspect. There are also a series of gaps relating to the activities of volunteers in emergencies and their organization in emergency preparedness.

The analysis of gaps in the recovery stage identifies defective preparedness in the sphere of recovery and significant gaps in the economic and insurance aspect.

The Regulatory Systems Assessment methodology proved effective in indicating important and significant gaps that were agreed on by the stakeholders and experts from different agencies. The presentation of the situation regarding gaps may help decision makers in the field to clarify whether gaps identified as important and urgent are not receiving due attention.

It is exactly 90 years since the last severe earthquake struck Israel, killing at least 285 people; 90 years before that, another severe earthquake killed 5,000-7,000 people, accounting for two or three percent of the population of the country. In this ninetieth year in the cycle, we present our report to the steering committee and the relevant agencies in the hope that it will help the many efforts being made in this field. It is clear to us that these agencies face difficulties and constraints in advancing the issue. However, **the lack of investment in a central mitigation mechanism and the ongoing neglect of the issue of private residential buildings at high risk constitute a systemic failure on the national level**. This failure must be addressed immediately by increasing the government’s integrating and leadership capability in the sphere of prevention (mitigation). This should be based on advanced risk management methodologies and advanced engineering solutions, including intensive attention to the subject of private residential buildings at high risk.

# A. Introduction

A severe earthquake in Israel is inevitable. Without proper preparedness, such an earthquake is liable to cause extensive damage of life, person, and property, as well as to national economic and social functioning over a protracted period, on a scale that exceeds any serious event the State of Israel has experienced since its establishment.

One of the state’s primary tasks is to minimize the risks inherent in natural disasters, including earthquakes, through legislation, regulation, and the adoption of policy tools. The “regulatory landscape” and the policy means adopted in practice in this context are often multidimensional and complex; they include overlapping or contradictory institutional levels, legal norms, and policy tools. In light of this complexity, gaps can often be seen between declared goals and actual implementation. Moreover, in modern democracies regulatory power itself is decentralized and rests in part with private or hybrid agencies.[[2]](#footnote-2)[[3]](#footnote-3)

The assessment of the national regulatory and policy system is a complex task entailing multidimensional analysis relating to an intricate set of objectives and goals. The reality of “networked governance” and the importance of this reality in building national resilience highlights the complexity of the assessment, since preparedness includes combination, cooperation, and coordination between government ministries, subordinate agencies, stakeholders from all sectors, and the public in all the stages of the disaster cycle,[[4]](#footnote-4) all of which are vitally important for enhancing community resilience.[[5]](#footnote-5)

The usual methodology employed to assess regulation, known as Regulatory Impact Assessment, is suitable for examining individual arrangements, but not for the purposes of horizontal and systemic assessment. Moreover, an extensive review of the literature showed that there is no ready-made methodology available for this task. Accordingly, we developed a purpose-built methodology for the assessment of a horizontal system, which we have named the Regulatory Systems Assessment. The goal of this methodology is to present an overall picture of the state of preparedness in order to expose gaps between the desirable and actual situation in policy and to identify problems and weaknesses in the regulatory system through an integrated analysis of the findings. The methodology is based on a combination of the principles of methodologies for Regulatory Impact Assessment (RIA) and the principles of systemic assessments we located in the professional and academic literature. The methodology combines several facets. It combines analysis of regulation with analysis of actual policy. It also combines analysis by the research team and input from the “expert opinions” among those involved in the field and experts in Israel.

The implementation of this methodology exposed a multifaceted and complex issue, including numerous gaps between the desirable and actual situation. Through implementation, we produced various deliverables relating to the mapping of the “actual” situation, the mapping of the “desirable” situation, and an analysis of the gap between the two. Our findings are numerous and we made every effort to use them as the basis for a coherent picture that will prove helpful to the relevant decision makers.

In the shadow of this imminent danger, we hope that this study will help Israel’s preparedness for an earthquake on the national, community, and individual level, with particular emphasis on the interaction between these different levels and between the different institutions. Moreover, we hope that this study will contribute to the improvement of the “theory of assessment of the impact of regulation” in Israel, providing a methodological foundation for the implementation of systemic assessments, including the involvement of stakeholders in the analytical process, in the context of coping with natural disasters and in other policy spheres.

The study was implemented in the framework of the Minerva Center for the Rule of Law under Extreme Conditions at the University of Haifa, in cooperation with researchers from the Department of Geography and the School of Public Policy at the Hebrew University. The chief researchers form a multidisciplinary group, bringing expertise in law, economics, planning, public policy, and geography.

Lastly, we would like to express our sincere appreciation to the Interministerial Steering Committee for Preparedness for Earthquakes, which approved the funding for the study. This is an unusual study in that it indicates gaps in the preparedness of the system the committee is responsible for examining. Studies of this type are unusual in the Israeli public system, despite the fact that they offer great potential for improving systemic functioning. The approval of this study reflects the exceptional commitment of the Steering Committee to improving the preparedness of the State of Israel for earthquakes.

# B. Research Goals and Relevant Background

## B.1 Research Goals and Research Deliverables

The research goals are:

1. To identify, map, and conceptualize the regulatory framework in Israel concerning earthquakes (prevention – mitigation, preparedness, response, and recovery), including attention to normative and institutional aspects.

2. To assess the regulatory framework and the policy actually adopted by means of *systemic assessment*. To this end, a purpose-built methodology was developed as part of the study called the *Regulatory Systems Assessment*. This methodology is based on the methodology of *Regulatory Impact Assessment* and on principles for assessing regulatory systems. In this assessment, special emphasis was put on processes of participation of stakeholders and experts in the field. These processes included two workshops for stakeholders and experts and 30 individual interviews with 22 interviewees[[6]](#footnote-6) at the core of activity in this field.

The research deliverables include:

1. Comprehensive mapping of the agencies involved in preparedness for earthquakes, including the regulatory relations between these agencies. The mapping is discussed in section E.1 and the map of agencies and organizations holding powers and obligations in addressing earthquakes and emergencies is presented in Appendix A. This map comprises 109 agencies, including headquarter agencies and subordinate agencies.

2. Comprehensive mapping of regulation relevant to preparedness for earthquakes, according to agencies and spheres of activity, including attention to the type of regulation. For the purpose of this mapping we created an *information base for mapping the regulatory system concerning preparedness for earthquakes*. This information base pools all the laws, government resolutions, and regulations, as well as a small number of procedures collected during the research relating to preparedness for earthquakes. In total, the information base contains 55 laws, 10 regulations, and 44 relevant government resolutions. The database is discussed in section E.1 and is presented in full in Appendix B.

3. Criteria for optimum preparedness for earthquakes according to the preparedness spheres. The compilation of criteria includes 257 criteria discussed in section E.2 and presents in full in Appendix C.

4. Innovative purpose-built methodology for analyzing gaps in policy and regulation for complex and broad policy issues. The methodology integrates the opinions of experts in the assessment process. As noted, the methodology was developed by the research team for the assessment of earthquakes in Israel and is discussed in section D.

5. Analysis of the gaps between the desirable and actual situation in terms of Israel’s preparedness for earthquakes. The analysis covers all stages of preparedness: prevention (mitigation), preparedness for response, response, and recovery, and focuses on 15 spheres. The analysis is based on the above-mentioned mappings, the compilation of criteria, academic and professional literature, the opinions of those involved in this field in Israel (as given in individual interviews and joint workshops) and analysis by the research team. The analysis identified 46 key gaps and is discussed in section F.

6. Presenting the gaps in the various preparedness times based on the table of spheres of general and detailed activity in section F.5.

7. Legal analysis of the existing regulatory system. This section addresses the legal gaps in the regulatory system for coping with earthquakes as identified during the research process, and emphasizes the legal dimension of the gaps between the desirable and actual situation. A total of 16 legal gaps are described. The analysis is presented in section G.

8. Discussion and concluding analysis of the gaps, raising key aspects that emerge from the gaps. This discussion is presented in section H.

## B.2 The Danger

A severe earthquake in Israel is inevitable. Without proper preparedness, such an earthquake is liable to cause extensive damage of life, person, and property, as well as to national economic and social functioning over a protracted period.

The usual working assumption is that a severe earthquake will occur in Israel in the near future. According to Dr. Rami Hofstetter, head of the Seismology Division in the Geophysical Institute of Israel, an earthquake with a magnitude of 6 on the Richter scale occurs on average in Israel every 80 years.[[7]](#footnote-7) This year, 2017, marks the end of a 90-year cycle since the last severe earthquake in the country, which occurred 90 years after the previous severe earthquake. A serious earthquake occurred in 1927 and was felt in Jerusalem, leading to 130 fatalities, 450 injuries, and the collapse or damage of 300 buildings. Ninety years earlier, in 1837, a severe earthquake struck the Galilee, completely destroying Safed and Tiberias. Between 5,000 and 7,000 people were killed, between two and three percent of the population of the country at the time. Other strong earthquakes that destroyed entire cities, particularly along the Jordan Valley, are known to us from historical and archeological evidence.[[8]](#footnote-8)

The updated reference scenario[[9]](#footnote-9) for which the State of Israel prepares[[10]](#footnote-10) estimates the following injuries and damage:

• 28,600 buildings severely damaged or destroyed – loss of at least 45 percent of the value of the building.

• 290,000 buildings with slight or moderate damage on a scope of 5-20 percent of the value of the building.

• 7,000 fatalities.

• 8,600 moderate and serious injuries.

• 37,000 light injuries.

• 9,500 people trapped (survivors extracted from ruins by others or by themselves).

• 170,000 people displaced (homeless).

• Damages in excess of NIS 90 billion.[[11]](#footnote-11)

In terms of fatalities, the disaster will be equivalent to three Yom Kippur Wars occurring simultaneously over just a few minutes and affecting the entire population. In terms of damage to buildings and infrastructures, and the number of people left homeless, the scenario depicts an unprecedented disaster in which two percent of the population lose their homes instantaneously.

## B.3 General Characteristics of National Preparedness for Earthquakes

National preparedness for earthquakes includes numerous spheres of preparedness. The following is a thematic breakdown prepared by the California Seismic Safety Commission:[[12]](#footnote-12)

• *Geological sphere ­*– primarily geological knowledge about earthquakes that can be used to improve the resistance of existing and new buildings.

• *Research and technology sphere* – primarily various methods for reducing risks and protecting the public against earthquakes.

• *Education and information sphere* – providing knowledge for decision makers, professionals, and the general public so that they can take effective decisions to reduce the damages of earthquakes and in order to encourage effective actions.

• *The economic sphere* – primarily the development and integration of economic considerations in planning, building, and strengthening in order to include damages causes by natural disasters, such as damage to property, to public functioning, and to privately-owned facilities, including infrastructures.

• *The land uses sphere* – primarily the development and inculcation of knowledge about risks from earthquakes in land use policy.

• *The existing buildings sphere* – in order to reduce the risk of injury to person and property.

• *The new buildings sphere* - in order to reduce the risk of injury to person and property.

• *The infrastructures and transportation sphere* – promoting the preparedness of these systems, including systems for water, sewage, natural gas, communications, electricity; and in the transportation sphere – bridges, roads, railroads, airports, and seaports.

• *The private sector preparedness sphere* – promoting enhanced awareness of economic ramifications, prevention (mitigation) alternatives, and the need for preparedness actions by business owners and corporate decision makers.

• *The emergency response sphere* – promoting an effective response by the relevant agencies from the governmental, business, and third sectors, including effective cooperation between them.

• *The recovery sphere* – promoting effective and rapid recovery in the short and long term.

A further division of the spheres of preparedness is based on the phase of preparedness. A common division dating back to the 1980s, and used by the US Federal Emergency Management Agency (FEMA), distinguishes between four phases of preparedness that apply to all types of disasters, including civil defense:[[13]](#footnote-13)[[14]](#footnote-14)

• ***Prevention (mitigation)*** *–* primarily any ongoing action to reduce long-term risk to person and property from a disaster incident. In other words, mitigation includes preventative actions to reduce long-term risks, such as strengthening buildings, strengthening internal components in buildings, and strengthening infrastructure facilities of various types and warning and alert systems. Mitigation actions can save lives and reduce economic damages on an enormous scale, both for property owners and for the government. Mitigation can also protect critical public and community facilities, reduce exposure to legal liability toward victims, and reduce the impact on the community.

• ***Preparedness*** – primarily programs and preparations to save life and property during the response stage.

• ***Response*** – actions immediately after the occurrence of a disaster to provide assistance in an emergency, save lives, reduce damage to property, and shorten the recovery time.

• ***Recovery*** – primarily actions promoting a return to normal or enhanced functioning after a disaster.

## B.4 The Complexity of the Issue

The issue of preparedness for a natural disaster, and particularly preparedness for earthquakes, belongs to a category of problems referred to in academic literature in the field of public policy as “wicked problems.”[[15]](#footnote-15) One reason for this is that the issue crosses systems, both on the level of governmental power and in terms of the numerous fields of knowledge on which it touches. The following are some of the characteristics that mark the complexity of the issue, including characteristics specific to the Israeli context:

• The mapping of agencies with a high degree of relevance to preparedness in the field identified 109 such agencies (see details in Appendix D).

• The fields of knowledge include, among others: risk assessment and management, preparedness for disasters, structural and infrastructure engineering, financing, insurance and financial and economic aspects, business management, geology, legal aspects, urban planning, medicine and emergency medicine, rescue, welfare and relief, and cooperation between government, citizens, and businesses.

• Uncertainty regarding the date, location, type, and severity of the damage.

• Uncertainty regarding the specifications and scope of government aid required in the event of a severe earthquake.

A direct consequence of the complexity noted above is the complex “regulatory landscape,” which includes overlapping institutional levels and legal norms, and even legal and institutional gaps. Moreover, in modern democracies regulatory power itself is decentralized and rests in part with private or hybrid agencies.[[16]](#footnote-16) As research shows regarding “new governance,”[[17]](#footnote-17) the reality of work in networks of public, private, and not-for-profit institutions for preparedness for disasters, and the importance of effective management of work, are emphasized in literature in the field of disasters.[[18]](#footnote-18) Governance through networks is essential in coping with earthquakes, since the dynamics of emergencies require a response outside existing institutional arrangements for routine periods – arrangements that lack the capacity to provide a full and optimal response in an emergency.[[19]](#footnote-19)

The complexity of the regulatory landscape is reflected in our mapping, which identified 55 laws, 10 regulations, and 44 government resolutions relevant to this subject. The scope and complexity of the issue present a significant challenge in terms of efforts to improve the country’s state of preparedness. These efforts should include the creation of involvement, coordination, and cooperation within the complex network of governmental agencies, stakeholders from all sectors (government, private, and third sector) and the public in all stages of the disaster.[[20]](#footnote-20) Strengthening these aspects is critical to creating resilient communities.[[21]](#footnote-21)

## B.5 The Structure of the Report

This section presents the goals of the study and important background information. Section C presents a series of principles for the assessment of regulation and regulatory systems, with an emphasis on preparedness for disasters and earthquakes. Section D presents a methodology for the assessment of regulatory systems – a purpose-built methodology developed as part of the study. Section E presents the results of the mapping stages of the study. Section F presents the results of the analyses of gaps. Section G presents a legal analysis of the gaps found. Section H presents a discussion of the gaps found. Section I is the concluding section.

# C. The Regulatory Systems Assessment: State of Knowledge Review

## C.1 The Need to Develop an Assessment Methodology

The regulatory map of preparedness for earthquakes is convoluted and complex. As detailed in section E, our mapping includes 109 agencies, 55 laws, and 10 regulations. We have also identified 44 relevant government resolutions (see details in Appendix B). This complexity presents a challenge for those who wish to assess existing regulation and policy. Our review of the literature in the field of the assessment of regulation and policy shows that there is no ready-made methodology available for this task. That being said, many principles exist that can be used to promote the development of a methodology for the horizontal assessment of regulation.

## C.2 Principles for the Assessment of Regulation and Legal Frameworks for Reducing Risks in Disaster Areas

Since the 1990s, many countries have made a concerted effort to improve government regulation and ensure that it is “smarter.”[[22]](#footnote-22) Reforms to improve regulation have sought to improve quality and efficiency through institutionalization. A key tool in these reforms is Regulatory Impact Assessment (RIA).[[23]](#footnote-23) RIAs are usually undertaken by government players and include, as a vital component, an analysis of the ramifications of proposed or existing regulation for various sectors. The way in which policy uses the above-mentioned tool is one of the three indicators used by the OECD to assess a country’s regulatory policy.[[24]](#footnote-24) The way in which this tool is used is also one of the four key indicators employed by organizations to examine regulatory management systems.[[25]](#footnote-25) Today, most of the OECD countries have adopted RIA in one form or another.[[26]](#footnote-26)

While the detailed procedure and content of assessment vary from one country to another, all assessments rely on an evidence-based approach to the assessment of policy alternatives.[[27]](#footnote-27) The assessments require governmental agencies to define specific problems and to analyze different types of regulatory solutions. Accordingly, assessments are generally used to assess individual policy programs or narrow regulatory means, as distinct from general and multifaceted reforms.[[28]](#footnote-28) The Wile House guide for regulatory agencies on the subject of the implementation of RIAs includes three basic components: a declaration regarding the need for regulatory action; the identification of diverse and appropriate regulatory approaches; and an assessment of the costs and benefits of the proposed regulation and its alternatives.[[29]](#footnote-29) The Israeli government’s guide for assessment proposes the following five stages: description of the situation and policy objectives; examination of risk management; consultation with stakeholders and experts; analysis, comparison of alternatives, and selection; implementation, monitoring, and reporting to the public.[[30]](#footnote-30)

As noted, this methodology was designed for the assessment of a singular regulatory tool and is used to examine both an existing regulatory tool as well as a tool under consideration. Accordingly, as the first step in developing a methodology for the horizontal assessment of regulation, we reviewed the literature regarding general criteria for the examination of regulation. We examined professional and academic literature in the field of the regulation assessment—specifically regulation assessment for disaster preparedness. Table 1 details the principles we found.

Table 1. General Principles for the Assessment of Regulation

|  |  |
| --- | --- |
| **Principles** | **Source** |
| 1. Clear policy goals | )OECD 2005) |
| 2. Effectiveness in securing these goals. | )OECD 2005) |
| 3. Solid empirical basis. | )OECD 2005) |
| 4. Benefits justifying the costs. | )OECD 2005) |
| 5. Attention to economic, environmental, and social aspects. | )OECD 2005) |
| 6. Monitoring and assessing progress relative to the objectives established. | (SSC, 2007) |
| 7. Regular assessment by reference to policy alternatives and by reference to clear policy goals. | (SSC, 2007) |
| 8. Coordination between different sectors and different levels of government. | (UNDP & IFRC, 2014) |
| 9. Attention to distributive impacts on society. | (OECD, 2005) |
| 10. Reducing costs and market distortions. | )OECD 2005) |
| 11. Promoting innovation through market incentives and target-based approaches. | )OECD 2005) |
| 12. Solid legal basis. | )OECD 2005) |
| 13. Clear, simple, and user friendly. | )OECD 2005) |
| 14. Adapted to competition, commerce, and investment on the national and international levels. | )OECD 2005) |
| 15. Consistency with existing regulation and policy. | )OECD 2005) |
| 16. Attention to cultural diversity, age, gender, and vulnerable populations. | (ISDR, 2005). |
| 17. Actively promote community participation. | (ISDR, 2005). |

We also collected and consolidated a list of criteria for examining legal frameworks for the reduction of risks from disasters, as detailed in Table 2. An important source for these criteria was the special report on this subject published by the United Nations Development Program (UNDP) and the International Federation of Red Cross and Red Crescent Societies (IFRC). This report analyzes legal frameworks for preparedness for disasters in dozens of countries around the world, and also proposes a method for the optimum adaptation of the legal framework to the profile of each country. The following sub-section presents this method.

Table 2. Criteria for Examining Legal Frameworks for Reducing Risks from Disaster Events

|  |  |
| --- | --- |
| **Principles** | **Source** |
| 1. Establish responsibility, reporting obligation, control, and accountability (including legal sanctions) for relevant players. | (UNDP & IFRC, 2014) |
| 2. Include institutional powers. | (UNDP & IFRC, 2014) |
| 3. Promote the integration of mechanisms to reduce risks from disasters in the relevant sectors. | (UNDP & IFRC, 2014) |
| 4. Suitability for the risk and governance profile of Israel according to the appropriate matrix between the profile of the country and the desired character of the law (see explanation below). | (UNDP & IFRC, 2014) |
| 5. Allocate resources. | (UNDP & IFRC, 2014) |
| 6. Purpose-built budgets will be devoted to the reduction of risks from disasters within legal regulations for the management of disaster risks. | (UNDP & IFRC, 2014) |
| 7. Coordination between different sectors and levels of government. | (UNDP & IFRC, 2014) |
| 8. Clearly connected to basic rights and constitutional rights. | (UNDP & IFRC, 2014) |
| 9. Appropriate for the country’s existing legal and institutional structure. | (UNDP & IFRC, 2014) |
| 10. Sustainable in the framework of existing resources and governmental capabilities on the national and local levels. | (UNDP & IFRC, 2014) |
| 11. Adapted to policy and programs. | (UNDP & IFRC, 2014) |
| 12. Enable participation by the community, the civil population, and vulnerable populations. | (UNDP & IFRC, 2014) |
| 13. Criteria for reducing risks from disasters will be integrated in the principles for environmental management and in environmental impact assessments. | (UNDP & IFRC, 2014) |
| 14. Implementation of the UN recommendations and requirements for preparedness for disasters, in addition to the assessment of existing policy and infrastructures by reference to UN standards. | (ISDR, 2005) |
| 15. In most cases, a single agency serves as the national focus responsible for nurturing a cross-society approach to the reduction of risks from disasters and for leading and directing policy. This agency will be responsible for several aspects detailed in the following rows: | (UNDP & IFRC, 2014) |
| 16. Coordination between research, policy, legal efforts, and different sectors and stakeholders. | (UNDP & IFRC, 2014); (NRC, 2003); (SSC, 2007) |
| 17. Determining a comprehensive national strategy detailing the reduction of risks from relevant disasters; describing programs and regional objectives for different disasters; establishing standards for the reduction of risks from disasters; and requiring relevant organizations and agencies to meet these standards. | (SSC, 2007) |
| 18. Assessment, updating, and monitoring of risks from disaster, vulnerability, and community resilience throughout the country. | (SPUR, 2012); (ISDR, 2005); (TRI, 2012) |
| 19. Defining measurable indicators for defining progress in risk management and the implementation process. | (ISDR, 2005) |
| 20. Establishment of warning systems. | (ISDR, 2005) |
| 21. Providing information for the public after safety from disasters. | (ISDR, 2005) |
| 21. Regular examination of implementation and progress in reducing risks from disasters. | (UNDP & IFRC, 2014) |

We drew on these two detailed lists of principles in the process system assessment as general criteria for the assessment process. In specific terms, we used some of the legal principles, and particularly the imposition of responsibility on the central national body, in defining specific desirable situations by reference to which we examined the existing situation and the gaps between the two, if any.

## C.3 Typology for Adapting a Legal Framework to the Country Profile

The United Nations Development Program (UNDP) and the International Federation of Red Cross and Red Crescent Societies (IFRC) published a report on legal frameworks for reducing risks from natural disasters, based on empirical experience from dozens of countries around the world.[[31]](#footnote-31) The report proposes a framework for adapting legal models to the country profile; the legal models are proposed as starting points for formulating optimal laws which are more specifically adapted to the relevant country.

The typology is based on a distinction between ***sectoral laws***, such as building laws, planning laws, environmental management laws relating to local government, and ***purpose-built laws for managing risks from natural disasters***. Sectoral laws may include significant components of preparedness for natural disasters and the reduction of risks that directly influence the level of governance in the country in the field of natural disaster risk management. Accordingly, a key component in the legal system for managing risks from natural disasters is the balance between the level of governance found in purpose-built laws for the management of risks from natural disasters and the level of governance found in the relevant sectoral laws. This balance depends largely on the capabilities and resources present in the government system for effective and sustainable implementation.

The framework for determining the type of law comprises two key variables across two axes. Each variable may have three values, thus creating a three-by-three matrix (see figure 1). The axes are:

• Extent of exposure to natural disasters.

• Extent of the existing governance for reducing risks from natural disasters through sectoral laws.

The nine squares in the matrix are filled by four legal models. As noted, these legal models are proposed as a starting point for the consolidation of a national legislative process that naturally requires adaptations. The following is a description of the four types:

• Type 1 law: law regulating readiness and response. This is the “leanest” of the four types of laws, focusing on the emergency response to natural disasters, though it may also include components of immediate readiness, early warning, and recovery. It does not focus on managing or reducing risks in advance, nor on the process of reconstruction in the recovery phase. This type is characteristic of countries that have not managed to update their legal system in order to prioritize the management of risks from disasters, such as Iraq, Madagascar, and Nepal.

• Type 2 law: general law for the management of risks from disasters: This type of law covers the entire spectrum of actions for risk management, including prevention, preparedness, and response, but does not focus directly on reducing risks. It establishes national institutions for the management of risks from natural disasters and also addresses issues on the local level, whether by establishing institutions or by defining responsibility. Although the law includes components for reducing risks from disasters, this is not its focus and it does not directly discuss sectoral mechanisms for reducing risks. It also does not regulate diverse associated spheres, such as funding for the reduction of risks, mapping risks, and mechanisms for education to the reduction of risks. The law is characteristic of many countries in Latin America and the Caribbean that suffer from significant exposure to natural disasters.

• Type 3 law: law for the management of risks from natural disasters prioritizing the reduction of risks in a detailed manner. This type of law covers the entire spectrum of actions for risk management, including prevention, preparedness, and response. In addition, it clearly prioritizes risk reduction. It specifies the local institutional structures and/or their fields of responsibility, and generally covers additional relevant spheres, such as financing, assessment and mapping of risks, warning systems, education to risk reduction, and a commitment to inter-sector cooperation. This type characterizes relatively modern laws enacted in recent years, such as that adopted in Mexico in 2012.

• Type 4 law: law for the management of risks from natural disasters prioritizing risk reduction in general and connecting existing sectoral laws. This type of law is one part of a cluster of laws, and serves as a bridge promoting broad and coordinated risk management. A risk management law prioritizes risk reduction but does not include details on implementation, since this aspect is covered by other laws. These laws may include, for example, specific disaster laws, laws for the management of natural resources, building laws, and local government laws. Laws of this type are found mainly in countries that have developed a high capability of governance for preparedness for natural disasters over a period of decades, such as Japan and New Zealand. In these cases, the law connects to existing governance structures, adding to them and drawing them together.

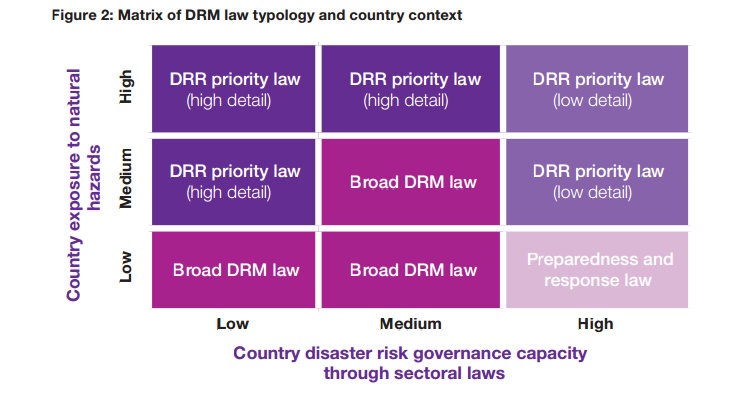
The rationale for the adaptation of the legal models to the country profile is based on the following principles:

• Countries at high exposure to natural disasters usually require laws for the management of risks from such disasters that delineate the prioritization of risk reduction in order to reduce serious damages and the socioeconomic ramifications of disasters. This type of law depends on the national context. For example, in a country with high exposure and high governance in the various sectors, a law will be required that prioritizes risks reduction with a low level of detail – *type 4*. The reason for this is that the major part of implementation will occur in the sectors themselves and by local government in accordance with their powers. However, in the case of a country with a low level of governance in the various sectors, a law will be required that prioritizes risk reduction to a high standard of detail – *type 3*. In this instance, the law and the institutions it defines must create national leadership for risk reduction that will implement a larger portion of risk management on the national and local levels, and cover a broader range of issues, such as mapping risks, planning land uses, education for risk reduction, and so forth.

• Countries at intermediate exposure to natural disasters usually require a system of governance for natural disaster risks; however, as mentioned, different types of risk management laws may be appropriate. For a country with a high level of capability in sectoral governance, a general risk management law creating national institutions for this field will be sufficient – *type 2*. This law need not address the actual modalities for risk reduction in detail, insofar as these are or will be implemented in the framework of the various sectors and in local government. Conversely, it is reasonable to assume that a country with an intermediate or low level of capability in governance in the various sectors and in local government will require a law prioritizing risk management on a high level of detail – *type 3*, since risk reduction will not take place through other channels.

• Countries at low exposure to natural disasters usually require a law for the management of natural disaster risks to cope with disasters that affect the country intermittently. Countries with a low capability of governance in the various sectors and in local government will benefit from a general law for the management of risks from natural disasters – *type 2*. Conversely, countries with a high capability of governance in the management of risk disasters will only require a law addressing preparedness and response on a detailed level.

Figure 1:



Source: UNDP & IFRC (2014)

## C.4 Principles for the Assessment of Regulation Systems

As already noted, while RIA is suitable for the evaluation of individual policy tools, it is not suitable for the horizontal assessment of regulation systems. Wide and comprehensive problems usually require a systemic analysis tool in order to secure effective solutions.[[32]](#footnote-32) For example, the World Health Organization has a guide for using “systemic thinking” to understand the structure and behavior of health systems—the foundation for identifying ways to strengthen the system in a given country.[[33]](#footnote-33) There is extensive academic and professional literature discussing indicators for reforms in regulation.[[34]](#footnote-34) Alongside attempts by academic institutions to assess regulatory systems,[[35]](#footnote-35) organizations such as the OECD and the World Bank regularly undertake systemic assessments in various countries.

According to the World Bank’s guide for assessing the regulation of infrastructure systems, a regulatory system is defined as “a combination of institutions, laws, and processes granting the government control”[[36]](#footnote-36) over actions and decisions within the framework of a given sector. The guide emphasizes the importance of assessing a regulatory system beyond the level of “the formal and dedicated regulatory entity,” since such a dedicated entity may have limited power in the legal field and in actual action. Accordingly, a high-quality assessment requires the examination of the actions of diverse agencies and organizations, as well as of legal and procedural documents.[[37]](#footnote-37) This is undoubtedly a challenge in terms of the scope of collection of information and the complexity of analysis, but such assessments are particularly important. Although there is often broad consensus regarding the presence of problems in regulatory systems, there is only rarely consensus about the specific problems in question or their deeper understanding.[[38]](#footnote-38) Only when problems are identified and clear can decision makers create practical and effective solutions. As the World Bank’s guide describes, “the best way to avoid low-functioning regulatory systems is to assess them regularly in order to ensure that they function fully and reflect social and economic reality,” thereby securing governmental objectives for the sector. [[39]](#footnote-39)

Three methods are used to undertake the assessment of regulatory systems: statistical comparison between countries, qualitative comparison between countries, and case studies of individual countries. The last method enables the assessment team to focus on detailed reforms, while also permitting the inclusion of the political, economic, and legal background of the country under examination, thus enhancing the credibility of the report among decision makers.

Assessment must examine regulatory decisions and characteristics in terms of the extent to which they improve or worsen the relevant sector.[[40]](#footnote-40) This is very different from the assessment of a single component in a regulatory system. From a systemic viewpoint, the regulatory framework is just one of several components that determine the performances of the sector. The assessment attempts to determine whether the general characteristics of the regulatory system help or hinder desirable objectives for the given sector. In other words, the approach is one of looking forward rather than backward, macro rather than micro, and qualitative rather than quantitative.[[41]](#footnote-41)

The following are key principles that emerge from the professional and academic literature in the field:

A. *Mapping regulation and relevant agencies*. A common component in all methodologies for assessing systems is a comprehensive mapping of existing regulation. The detailed content of regulatory assessments is based on an examination of the characteristics of each sector and the knowledge collected with regard thereto. However, a methodology and characteristics for the assessment of regulatory systems can be derived from the assessment tools and guides prepared by various organizations. The aforementioned guide produced by the World Bank[[42]](#footnote-42) describes several principles for the effective evaluation of regulatory systems. High-qualitative assessment should address both the content of regulation and the actual governance of regulation. The content of regulation refers to the actual content of the regulation and decisions, while the governance of regulation relates to the “how” of regulation – the institutional and legal framework of the system and the frameworks in which decisions are made. By way of illustration, while the content relates to the level of the standard and the demands for reporting to the public, the manner of governance relates to the organizational structure of the regulator, the transparency of the decision-making process and access thereto, the accountability of the regulators, and the relations between regulatory and policy makers.

B. *Analysis of actual action and local characteristics*. In addition, a full assessment must also address the implementation of regulation – the actual actions taken by organizations and the decisions actually adopted. Assessments that focus exclusively on the legal framework and do not examine actual policy tend to be excessively positive. Similarly, when a tool is created for evaluating health systems,[[43]](#footnote-43) it is important to first understand what happens on the ground, and only afterwards try to understand the legal framework of the system. This method also helps draw the attention of decision makers to specific reforms required in accordance with the findings in the field.[[44]](#footnote-44) Another aspect of this principle is attention to local characteristics, including the atmosphere, culture, and background of each country.

C. *Focus on gaps between the desired and the actual situation*. The assessment of regulation must note successful aspects of the system, but it should focus on problematic parts, thereby paving the way for policy solutions.[[45]](#footnote-45)

D. *Assessment by reference to criteria and standards*.[[46]](#footnote-46) The content of these standards depends on the sector under examination and must be broadly acceptable to experts in the field.[[47]](#footnote-47) In other words, the assessment compares what exists in a given country with what experts believe *should* exist. It is important to note that the use of indicators or standards in order to enhance control and management capabilities entails subordinate disadvantages and complexities. There is an inherent tradeoff between such control and learning.[[48]](#footnote-48) In order to learn and improve, government agencies require a measure of freedom to experiment, to be creative, and even to make mistakes. The use of indicators restricts the actions of agencies and gauges success in terms of compliance with detailed indexes. Determining indicators should be undertaken together with prioritization and with balanced policy goals.[[49]](#footnote-49) If the indicators are biased, the assessment will also be. The OECD recommends the use of indicators which are comprised of the weighting of sub-indicators for the evaluation of reforms, since these can address broad and complex dimensions of a system while still providing an overall index of performance.[[50]](#footnote-50) In addition, when consolidating indicators, the assessment team must provide room for the question of the ramifications of the regulation on other spheres and on social objectives, such as environmental objectives and human rights.

E. *Exercising of discretion by the research team*. In addition to the importance of examining the situation by reference to standards and objectivity, the complexity of the policy sphere and unique conditions also require subjective discretion.[[51]](#footnote-51)

F. *Integrating the opinion of experts and stakeholders in the process*. Integrating the opinion of experts responds to the need to examine the situation by reference to appropriate standards. It also balances the use of subjective discretion, and enables attention to be paid to the specific context of the country. In other words, expert opinions respond to items D, E, and F. The use of expert opinions is common in many areas related to public policy, for example in assessing risks, considerable weight is placed on expert opinions when no empirical information is available.[[52]](#footnote-52) Decision makers also use experts extensively in setting policy.[[53]](#footnote-53) Regarding assessments of regulatory systems, all the methods we found in the literature include the intensive use of interviews with experts and professionals as part of the process.[[54]](#footnote-54) Assessment processes draw on experts in key positions in order to obtain information about how the regulatory system functions in practice. In addition, international experts develop systemic assessment tools based on their understanding of the characteristics of successful systems; it is therefore proposed, that their insights and perspective should also be sought. It should be noted that the use of expert opinions is very common in the RIA process.[[55]](#footnote-55) The use of expert opinions is not only critical as a complementary or alternative means to empirical evidence,[[56]](#footnote-56) but also helps to build legitimacy among decision makers.[[57]](#footnote-57) Likewise, it is also important to consult with stakeholders and officials in the area under examination. These players can help identify unintended ramifications, balance conclusions, and promote an understanding of the ramifications of policy, thereby aiding the assessment team in understanding the conditions for the implementation of policy.[[58]](#footnote-58)

G. Frequent implementation of assessments. This is required in order to understand trends, improvements, or exacerbations in the state of preparedness.[[59]](#footnote-59)

H. Building trust with decision makers. It is extremely important that the authors of the assessment consolidate their credibility among decision makers in order to ensure that the results of the assessment will be influential in the bureaucratic and political sphere.[[60]](#footnote-60)

## C.5 The Importance of Involving Stakeholders

In recent years, the academic and professional literature in the field of disaster preparedness has emphasized the importance of involving the community in disaster management. The professional literature sometimes refers to this as a “whole community” or “society at large” approach to disaster management.[[61]](#footnote-61) The principles of this approach include an understanding of and response to the needs of the community; the involvement and empowerment of all sections of the community; and reinforcing community strengths on an everyday basis. The FEMA guide for local mitigation[[62]](#footnote-62) describes an outreach strategy that includes three layers: the planning team, stakeholders, and the public. The effective management of an earthquake requires that each of these layers be involved in planning preparedness, in response, and in recovery. This principle is also emphasized in the *Hyogo Framework for Action, 2005-2015*, which is used around the world as a framework for developing resilience in the face of disasters on the national and community levels. The framework urges stakeholders to implement an agenda of building resilience according to a “multi-sector” approach.

Thus, the involvement of stakeholders constitutes a key layer in community involvement in preparedness. This sphere includes the promotion of coordination and cooperation by the government between government agencies and with the private and third sectors. The management of large-scale disasters, in particular, requires the government to function outside the ordinary bureaucratic model. While the government traditionally operates in a hierarchical manner, disasters – as complex problems – are optimally managed through alternative organizational relations[[63]](#footnote-63) and extra-governmental cooperation.[[64]](#footnote-64)

Coping with disasters requires the rapid search for, and exchange and absorption of reliable information about sudden occurrences. This information is transmitted through a network of organizations that cross disciplinary, organizational, and jurisdictional boundaries.[[65]](#footnote-65) The extent to which the government can structure effective cooperation between its relevant government agencies and organizations from the private and third sector[[66]](#footnote-66) directly influences the effectiveness of disaster management.[[67]](#footnote-67) In addition, during an earthquake local capabilities, both of government and of the private sector, will usually be damaged in a manner that makes cooperation between the government and the private sector a critical factor in the response to an earthquake.[[68]](#footnote-68) In conclusion, resilience to disasters is based in joint networks, systems, and initiatives rather than in individual organizations, and the resilience of these entities is only evident when they are required to respond to an external blow.[[69]](#footnote-69)

The importance of cooperation in response also implies the importance of cooperation in preparedness for response, including cooperation in informed risk reduction based on a systemic and cross-sector perspective. The trend to involve stakeholders, and even the public, in disaster management reflects the broader trend to “new governance” that seeks to include citizens in government work and decision making.[[70]](#footnote-70) This is also connected to the fact that regulatory agencies are increasingly working in networks.[[71]](#footnote-71)

# D. Methodology for the Regulatory Systems Assessment

On the basis of the principles for analyzing regulatory systems detailed in the previous section, we formulated a purpose-built methodology for evaluating the regulatory system for Israel’s preparedness for earthquakes. This methodology, which we named *The Regulatory Systems Assessment* (RSA), is based on three key stages. The following description details the rationale behind the RSA and its manner of implementation.

**Mapping the status quo**. This stage includes the mapping of all the relevant existing regulation and the agencies to which it applies.

*Rationale*: The mapping of existing regulation, including the relevant agencies, is a fundamental and vital component for systemic assessment, and forms part of all the systemic methodologies appearing in the literature. This stage provides a direct response to Principle A– *Mapping regulation and relevant agencies*.

*Implemenation*: The mapping process included the collection and organization of relevant laws and government resolutions from written sources, as well as ensuring accuracy and full coverage of interviewees. In total, we located 55 laws, 10 regulations, and 44 relevant government resolutions (see Appendix B and B1). We also undertook the mapping of relevant agencies (see appendices A and D). The mapping of agencies was based on the mapping of regulation, together with interviews with key public officials in the field (see the list of interviewees in Appendix E) and an in-depth review of government activity on this issue as reflected in documents and participation in relevant conferences. In total, we located some 109 agencies.

**Mapping the desired situation**: This stage includes mapping recommendations for criteria for effective policy and regulation on the subject, divided into spheres of action.

*Rationale*: Assessment by reference to criteria is a basic principle in systemic assessment. This stage provides a direct response to principle D – *assessment by reference to criteria*.

*Manner of implementation*: A review of professional and academic sources. In total, we used 14 professional sources and identified 253 criteria and recommendations for optimum preparedness for earthquakes. The full list of the criteria is presented in Appendix C.

In addition, and as part of the mapping of the desired situation, we formulated a detailed list of spheres of activity itemizing all the spheres in which action must be taken, criteria, agencies, and regulation introduced in the different spheres. This stage of the process is presented in Appendix F. The division into spheres of activity in this part defines the following issues:

1. Buildings and infrastructures (“concrete and iron”)

1A. Standardization and building permits

1B. Examining the propriety and attention to buildings and infrastructure facilities

1C. Examining the propriety and attention to non-infrastructure buildings

2. Warning

3. Exercises[[72]](#footnote-72)

4. Contiguity of economic functioning

4A. Supply of infrastructure services, supply of services themselves (e.g. – generators and fuel for electricity, water in bottles / towed containers, mobile sanitation units, etc.)

4B. Supply of vital services for the population other than infrastructures (search and rescue, medicine, basic equipment, etc.)

5. Preparedness and functioning of local authorities

6. Integration and leadership

7. Trained and skilled personnel

8. Public outreach and involvement of stakeholders

9. Resources and financing sources[[73]](#footnote-73)

10. International assistance and relations

**Analysis of gaps**: This stage includes the identification and assessment of gaps between the desirable and actual situations.

*Rationale*: The goal of this stage is to identify gaps between the desirable and actual situation; this is essentially the goal of assessment. In order to create high-quality mapping of gaps, the analysis combines several sources of information:

- Mapping of the actual situation, including mapping of regulation and relevant agencies.

- Mapping of the desirable situation, including the criteria and recommendations we found in the literature.

- Broad input from stakeholders and experts regarding the mappings and the gaps they reveal.

These sources were crossed by means of a multistage analysis combining analysis by the research team and feedback from experts and stakeholders. Thus, the process met all the principles for the assessment of regulatory systems: *A – mapping regulation and relevant agencies; B – analysis of actual action; C – focus on gaps between the desired and the actual situation; D – assessment by reference to criteria and standards; E – exercising of discretion by the analyzing team; F – integrating the opinion of experts and stakeholders in the process*.

The only principle that was not applied, for obvious reasons, was principle G – regular implementation of assessment, since this is the first assessment of its kind in this field in Israel. However, the study does provide a tool for the implementation of regular assessment, whether separately for each agency or by an integrating agency.

Manner of implementation: information was cross-analyzed in several stages in order to ensure optimal analysis.

1. *Preliminary analysis of gaps*: In this stage, we crossed the mapping of regulation and agencies, on the one hand, with the criteria and recommendations, on the other. To this end, we applied a primary division into phases in accordance with FEMA’s typology as presented above – prevention (mitigation), preparedness for response, response, and recovery; and a secondary division into the spheres of action within each phase. Appendix F details this division.[[74]](#footnote-74) For each sphere, we detailed the relevant regulation and the detailed recommendations and we formulated a list of potential gaps. The analysis of the gaps was based on the categories in the above-mentioned list of spheres of action, in accordance with the detailed table of spheres of action (see Appendix G).[[75]](#footnote-75)

2. *Preliminary round of interviews*: In this stage, we met with key figures in the field from NEMA and the Steering Committee in order to familiarize ourselves with actual action, examining the mapping, receive feedback regarding the division of issues and the emerging methodology, and learn about the gaps as identified by the interviewees. This stages included approximately 20 hours of interviews with four interviewees holding key positions in preparedness for earthquakes in Israel.

3. *Focus on spheres*: An important conclusion raised by the first two stages was that the scope of preparedness for earthquakes--in its many spheres of action—demands a focus on the spheres that appear to be the most important. Accordingly, we focused the analysis in accordance with the following division:

Prevention (mitigation) phase:

• Sphere A: integrating prevention (mitigation) efforts and leading prevention policy.

• Sphere B: preparing and strengthening hazmat facilities and national infrastructures in the fields of energy (electricity, fuel, gas); water; sewage; communications; transportation (roads, railroad, ports, and airports); and refuse.

• Sphere C: preparing and strengthening public buildings – hospitals, schools, buildings of response agencies, and additional public buildings.

• Sphere D: preparing and strengthening privately-owned buildings, including residential homes.

Preparedness for response phase:

• Sphere E: leading policy, integration, and concentration of preparedness for response.

• Sphere F: preparedness of local authorities.

• Sphere G: public outreach and awareness regarding the need for preparedness.

• Sphere H: preparedness with regard to civil society organizations and volunteers.

• Sphere I: warning systems.

Response phase

• Sphere J: local authorities and various services for the population in response.

• Sphere K: volunteers and aid organizations in response.

Recovery phase:

• Sphere L: preparedness for recovery, including integration and coordination.

• Sphere M: the economic aspect, financial assistance, insurance, and compensation.

• Sphere N: recovery of infrastructures.

4. *Gap identification workshop*: In this stage, we held a workshop at which stakeholders and experts noted gaps (see the list of pages in Appendix E). The workshop had several goals: raising and discussing gaps by a group of expert stakeholders; effective examination of the methodology.

5. *Second analysis of gaps*: With the help of the workshop findings, we undertook a more advanced analysis of the gaps. We also highlighted questions and issues requiring further clarification.

6. *Extended round of interviews*: In this stage, we held some 20 additional interviews with stakeholders and experts in order to help optimize our definition of the gaps already identified and to locate additional gaps. Some of the interviewees had not participated in the first workshop but their input seemed important. The interviewees included officials from key government ministries related to the field, local government officials, and private sector experts. The list of interviewees appears in Appendix E.

7. *Advanced analysis of gaps*: Based on these interviews, we updated the analysis of gaps and produced a more advanced version.

8. *Gap assessment workshop*: We sought to examine the advanced analysis of gaps once again by reference to the opinions of experts and stakeholders. To this end, we held a gap assessment workshop. Some X participants attended the workshop (see Appendix E for the detailed list of participants). The participants worked in two groups, assessing and discussing each gap. As part of the discussion, we asked the participants to assess and rank the gaps according to the following criteria:

- Consensus (5- agree that there is a gap; 1- no gap)

- Importance (5-extremely important; 1-unimportant)

- Urgency (5-extremely urgent; 1 – not urgent)

- Difficulty of tackling gap (5-easy; 1- difficult) + type of difficulty- political, organizational, resources…

- Timeframe for tackling gap (5- weeks; 4- up to six months; 3- one year; 2- two-three years; 1- many years)

- Precondition for tackling other gaps (yes/no, if yes – detail the gaps)

- Agencies involved (5- small number of agencies involved; 1- large number of agencies involved)

- Improves level of equality in society (5- solution will improve equality; 1-solution will not improve equality)

- Comments and listing the “top three”

9. After the workshop, we refined and analyzed the assessments.

10. *Final analysis of gaps*: The final analysis of gaps is the final result of the above-mentioned process and is presented in the Results chapter.

# E. Results of the Study: Information Bases and Mappings

## E.1 Mapping Regulation and Agencies

As part of the component of mapping the existing situation, we prepared several mappings of the regulatory system and of relevant agencies according to different cross-sections. The following are the details of the mappings.[[76]](#footnote-76)

The first deliverable of the mapping stage is the ***information base on the regulatory system for earthquakes***.[[77]](#footnote-77) This information base collates all laws and government resolutions, as well as regulations and a small number of procedures collected during the course of the study relating to preparedness for earthquakes (and other similar emergencies). The information base is divided according to three time periods: before the event, during the event, and after the event. Laws that require or empower an agency to undertake an action before the event are presented in the “before” section; laws that require or empower an action during or immediately after the event are presented in the “during” section; and laws that require or empower an action after the event are presented in the “after” section. In total, the information base includes 55 laws, 10 regulations, and 44 relevant government resolutions. The information base includes a summary of the rules in each law or government resolution, and as noted is presented in **Appendix B**.[[78]](#footnote-78)

Another key deliverable of the study is the ***map of agencies and organizations bearing powers and obligations in coping with earthquakes and emergencies***.[[79]](#footnote-79) The map is presented in Appendix A and includes 109 agencies, including both headquarter and subordinate agencies (see **Appendix D**[[80]](#footnote-80) for the list of agencies). The map presents:

• Types of agencies: interministerial agency, headquarter / government ministry agency, subordinate agency, or private / semiprivate agency.

• Special types of agencies: aid organizations (in accordance with the Civil Defense Law), rescue agencies (in accordance with the Police Ordinance), vital enterprises (in accordance with the Employment Service Law, 5708).

• The legal basis for the agencies: law, government resolution, and administrative decision.

• Special powers: general power, declarative power, and power to enact secondary legislation.

• Relations between agencies: authority, subordination, and coordination.

Clicking the asterisks on the map leads to a list of the powers and obligations of each body in accordance with the laws and government resolutions.

A further important deliverable is the **interactive map of Quake/2**,[[81]](#footnote-81) which is a decision of the Ministerial Committee for Preparedness for Earthquakes dated 7 April 2010 (see **Appendix H**). This decision, which was adopted as Government Resolution 1623 on 29 April 2010, constitutes a significant milestone in regulation for preparedness for earthquakes; it imposes actions and tasks relating to preparedness for earthquakes by way of an obligation incumbent on government ministries and subordinate units. The decision also requires the Steering Committee for Preparedness for Earthquakes to monitor the implementation of the decision and to report to the Ministerial Committee at least once a year. Our mapping relates to 47 agencies and details:

• Type of agency: government ministry, interministerial agency, subordinate agency, private agency.

• Special types of agency: operative organization (IDF, NEMA, police, and Home-Front Command).

• Relations between agencies: subordination and discussion.

On the Quake/2 map (**Appendix H**), clicking an agency leads to a list of its powers and tasks in accordance with the decision.

Another important deliverable of the mapping is the **detailed list of spheres of action**, attached in **Appendix G**.[[82]](#footnote-82) This list includes all the spheres of activity and issues for attention identified in the study as vital for coping with earthquakes.

The principal deliverable of the mapping in the study is the **interactive map of regulation by agency and sphere of action**. This map is structured as an Excel document in which one sheet (the base table) presents all the regulatory agencies according to the spheres of action. The document also includes spreadsheets for each of the agencies detailing the powers and obligations of the agency and its subordinate agencies as well as the laws, regulations, and government resolutions relating to those powers and obligations. Clicking the name of an agency in the base table leads to the spreadsheets of powers and obligations for the relevant agency and its subordinate agencies and enables a review of the legal rules they hold. The map is available online at: <https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdrive.google.com%2Fuc%3Fexport%3Ddownload%26id%3D0B7CnzVNKHOwsekZUaWEzV25ydVU>

A non-interactive version of the base table is presented in **Appendix I**.[[83]](#footnote-83)

The map covers some 26 government ministries and governmental agencies, as well as dozens of subordinate bodies, authorities, and private and semiprivate agencies (constituting the vast majority of agencies in Israel bearing powers and obligations on this issue). The map facilitates the examination of the obligations and powers of each agency in each sphere of action, as well as the source of these obligations and powers in law or in government resolutions. The rows in the map also facilitate an examination of which agencies are responsible for each sphere of action, while the columns facilitate an examination of the spheres of action in which the different agencies hold powers. Figure 2 illustrates the way the interactive map works: if an agency holds powers in a given sphere, the relevant cell is shaded gray. Clicking on the cell leads to the relevant powers.

Figure 2. Illustration of the base table in the interactive map of regulation by agency and sphere of action.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Agency A and subordinate agencies | Agency B and subordinate agencies | Agency C and subordinate agencies | ... |
| Sphere of action A |  |  |  |  |
| Sphere of action B |  |  |  |  |
| Sphere of action C |  |  |  |  |
| ... |  |  |  |  |

## E.2 Table of Criteria and Recommendations for Optimum Preparedness

As part of the component of mapping the desirable situation, we reviewed and mapped criteria for the optimum assessment of preparedness for earthquakes. The review was based on 14 professional and academic documents, on the basis of which we defined 197 criteria and recommendations for optimum preparedness. These are divided into 12 general issues of preparedness. The criteria are presented in **Appendix C**.[[84]](#footnote-84)

# F. Results of the Study: Gaps in Preparedness for Earthquakes

The gaps presented are the deliverable of the process of analysis as detailed above. The analysis of gaps focuses on several key spheres in terms of preparedness. These spheres were selected by the research team after examining all the spheres, assisted by the feedback from the interviewees. We must note that there are additional spheres of preparedness that were not covered by the study; moreover, even in the spheres we covered, there may still be significant gaps that were not identified.

The gaps are presented in several ways. Firstly, they are presented according to the phases of preparedness. This section presents a description of the gaps and the numerical assessment attributed to each gap in the process of expert assessment. Next the gaps are presented in a table according to thematic division (see table 3 on p. 49), detailing the number of gaps in each sphere of action and in each phase. This division enables a horizontal examination of different spheres across the preparedness phases. The document includes links leading from each gap to the table and back to the gap number.

Appendix E details the list of experts who participated in the discussions about the gaps in the detailed workshop. We should note that some of the experts did not score the gaps and only participated in the discussion. However, in no case was a direct objection raised questioning the existence of any particular gap, and in most cases the discussion focused on the characteristics of the gap, its formulation, and its operative ramifications. The scores were given with regard to three variables:

- The *extent of consensus* regarding the gap.

- The *importance* of addressing the gap.

- The *urgency* of addressing the gap.

The scale of values for each variable is as follows:

|  |  |  |
| --- | --- | --- |
| **Consensus** | **Importance** | **Urgency** |
| 5- agree that the gap exists  1- there is no gap | 5-extremely important  1- unimportant | 5-extremely urgent  1- not urgent |

In terms of the research methodology, the scores corroborate the accuracy of the gap and, in marginal cases, its high or low importance/urgency. However, the main underlying rationale for the gap is our qualitative analysis throughout the research process.

## F.1 Gaps in Prevention (Mitigation)

*Sphere A: Integration of Prevention (Mitigation) Efforts and Leadership of Prevention Policy*

This sphere includes: coordinating actions for seismic safety; disseminating research to relevant players; determining responsibility/work from a risk-management; defining targets, standards, and priorities for risk reduction (risk management); formulating strategic plans and submitting reports on specific issues; recommending changes in organizations in the public and private sector to promote safety against earthquakes.

**Gap 1 – lack of intensive integration of prevention (mitigation): There is a need for greater involvement and monitoring of prevention actions by a central and expert body. This is needed in order to advance the sphere significantly and optimize the application of the responsibility defined in the Steering Committee’s Quake/2. There may be a need to fine-tune the Steering Committee’s responsibility and powers.**

**To table**

- Many spheres of mitigation are advancing slowly, if at all, and/or are not adequately monitored by a central and expert body.

- There is a shortage of personnel to meet this responsibility.

- There is a need for deeper and more effective monitoring of Quake/2.

- There is a need to strengthen working methods for effective supervision, or even for a dedicated administration, as opposed to methods based solely on a coordinating committee.

- Supervisory and monitoring powers may be insufficient.

- The governmental system in Israel tends to concentrate efforts on response, despite the importance of investing in mitigation. Accordingly, the body promoting the sphere of mitigation should be strengthened.

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.0 | 4.3 | 4.7 |

Resolution 1263 imposes complex and serious responsibility on the Steering Committee with relating to 19 government ministries, 15 agencies for which these ministries are responsible, and nine independent agencies.

- “*To monitor the implementation of Government Resolution 1623 and to report at least once a year to the Ministerial Committee for Preparedness for Earthquakes on this implementation.*

- *To determine actions and tasks relating to the government ministries and subordinate units regarding preparedness for earthquakes as detailed in the tables attached to the resolution.*

- *To charge the government ministries and subordinate units with acting to implement the tasks and actions as stated, within the framework of their responsibility, powers, and budget, and to engage in discussions with other agencies, such as statutory corporations and government companies, for the purpose of the implementation of the actions and tasks required of these agencies, as detailed in the table.*

- *To charge the government ministries with preparing an annual work plan, detailing tasks, a timetable, and reporting on implementation as derived from the implementation of the resolution.”*

Actual implementation of Resolution 1623 has been partial. Many mitigation processes are not progressing at a satisfactory pace and/or are not being monitored in depth by an expert government agency. As of January 2016, the Steering Committee includes just a single professional employee.

Resolution 1623 effectively disperses the responsibility for the implementation of mitigation among different government agencies. However, these agencies lack the necessary professional knowledge to promote mitigation efficiently. Moreover, promoting mitigation for earthquakes – particularly in a country where the frequency of severe earthquakes is low – may easily be displaced from the agenda of these agencies. Accordingly, despite the imposition of responsibility on a government agency, it is very probably that the promotion of the issue will be delayed for various reasons, such as lack of interest, lack of budget, difficulties and obstacles at junctions of cooperation, and lack of professional knowledge and access to such knowledge.

This situation requires intensive supervision and control by a central agency with the expertise and capability to promote the issue. This agency should hold appropriate and available scientific and engineering expertise for the purpose of mapping, effective prioritization, and adaptation of efficient and modern strengthening solutions. As an aside, international experience shows that the formation of a national administration for defined and specific mitigation tasks can lead to quicker and more efficient mitigation processes.

**Gap 2 – lack of a central agency with engineering expertise: There is a need for a central agency with advanced engineering expertise in the field that can provide knowledge for tasks such as mapping, prioritization, planning and setting policy, standardization, and implementation of advanced strengthening solutions.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.8 | 5.0 | 4.8 |

The mitigation sphere relies on engineering expertise, which is very sparse in Israel. In practice, there are numerous arguments between the small number of experts in Israel, and there is a need to “import” knowledge and consultation from leading experts around the world in order to provide a more coherent picture. Countries such as Cyprus and Canada contacted experts from other countries in order to gather coherent and advanced knowledge that can help in the formulation of informed policy. Limited expertise leads to inefficient mitigation and the inefficient concentration of efforts, both in terms of strengthening costs and in terms of defective prioritization. Accordingly, there is a need for professional knowledge within a central government agency that can then be made accessible to the various agencies charged with responsibility for promoting mitigation in their field.

The lack of expertise and the inculcation of expertise has negative ramifications for key aspects of mitigation: high-quality **mapping and prioritization** constitute an essential foundation for setting efficient risk management policy. At present, policy formulation in a range of mitigation fields – including strengthening public buildings, strengthening private buildings, and strengthening infrastructures – is based on crude prioritization, at best, that does not enable efficient risk reduction and concentration of effort. A higher quality of mapping is required for several fields of mitigation:

- *Private buildings* – mapping residential buildings on the basis of advanced computerized analysis (as undertaken in Japan, Portugal, Italy, Turkey, and the US) can enable decision makers to focus policy on buildings at particularly high risk. The estimated cost of such a project is around six million shekels (according to the study by engineer Yaron Ofir). Mapping undertaken by the research team of Professor Igal Shohet[[85]](#footnote-85) regarding the city of Tiberias yielded similar findings.

- *Public buildings* **–** very crude mappingwas undertaken yielding a list of 3,000 public buildings, including 1,400 schools.

- *Standards* – the lack of expertise leads to delays and inefficiency in setting standards.

- *Outmoded strengthening methods* – the usual strengthening method in Israel is very expensive (connecting the old shell to a new shell) and relatively outmoded. Moreover, it can only provide a solution for some buildings.

- *Ineffective strengthening* – the lack of expertise and the absence of a detailed standard for strengthening buildings raise reasonable concerns that the process is being implemented ineffectively.

*Sphere B: preparing and strengthening hazmat facilities and national infrastructures in the fields of energy (electricity, fuel, gas); water; sewage; communications; transportation (roads, railroad, ports, and airports); and refuse.*

**Gap 3 – energy, water, and sewage infrastructures – lack of central government agency with expertise in the field:**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.9 | 4.9 | 4.8 |

The Ministry of National Infrastructures, Energy, and Water probably[[86]](#footnote-86) lacks the necessary expertise to supervise and control preparedness in the fields of energy infrastructures, water, and sewage. At present the preparedness of infrastructures depends on the various thematic authorities and on the agencies themselves. The interviews yielded the following assessment regarding the preparedness of different types of infrastructures:

- Electricity – the Israel Electric Company attends to its own installations, but as noted without the professional supervision and control of a central agency with expertise and a regulator.

- Water – Mekorot attends to its own installations, again without professional supervision and control.

- Sewage – there is no attention to the subject. Sewage systems can be expected to collapse.

- Gas – the assessment is that the level of preparedness is low.

The Emergency Division in the Ministry of Environmental Protection sometimes extends its attention to hazmat to include infrastructure installations, but only on a localized basis.

**Gap 4 – nonstructural elements – lack of a central government agency with expertise in the field: This field is not addressed in an orderly manner. There is a lack of supervision, training, and official control by a governmental agency holding expertise.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.0 | 4.7 |

Nonstructural elements may cause damage during an earthquake and may be critical for the functioning of infrastructures following an earthquake, from computer screens to generators.

**Gap 5 – transportation infrastructures: lack of a central government agency with expertise in the field, acting as a regulator on the subject and supervising, monitoring, and controlling preparedness.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.0 | 4.2 | 3.9 |

In the event of an incident, functioning infrastructures are extremely important. Each of the agencies responsible for different fields, such as Mekorot, Netivei Israel, the ports, and the Israel Electric Company, attends to the infrastructure under its responsibility, to a varying degree. There is a lack of an agency above these bodies that could supervise, control, and guide mitigation and provide supporting professional knowledge. There is a need of knowledge about what to strengthen, on the basis of what priorities, and how to strengthen efficiently. An knowledgeable agency is needed to guide, supervise, and control the subject. The assessment regarding the current preparedness is:

- Netivei Israel has undertaken work regarding the resistance of bridges and has attended to this issue.

- Ports – the assessment we received suggests a low level of preparedness.

- Airports – we do not have any information.

- Trains – we do not have any information.

**Gap 6 – communications infrastructures: lack of a central government agency with expertise in the field, acting as a regulator on the subject and supervising, monitoring, and controlling preparedness.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.5 | 2.6 | 2.5 |

The assessment raised by the interviews is that there are probably no orderly mitigation processes.

**Gap 7 – slow preparation of hazmat installations.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.5 | 5.0 | 4.2 |

Hazmat installations are maintained systematically, though in a slow and partial manner, on the basis of an updated American standard. There is a total of some 4,800 enterprises with a toxic substances permit, only 5% of which will be addressed over the next seven years in accordance with the plan of the Ministry of Environmental Protection. The ministry’s Emergency Division is promoting a process to strengthen some 60 enterprises found, on the basis of crude screening, to be at an extremely high risk level. Attention is also planned for a further 220 enterprises over the total seven-year period. The ministry has prepared a training booklet for the standard and methods for its implementation. There will be sample control of the engineering work undertaken by the enterprises. The enterprise has only managed to fill a single half-time position due to the salary gap with the private market and lack of flexibility in employment.

**Gap 8 – crude prioritizing of hazmat installations, without attention to proximity to the population or to injury to workers.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.4 | 3.15 | 2.5 |

Prioritization is based on the quantity of hazmat and does not relate to proximity to the population or injury to workers.

**Gap 9 – lack of a support mechanism for enterprises that do not have the resources to undertake the necessary strengthening.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.5 | 4.0 | 4.0 |

There is no cooperation with relevant government ministries on this subject.

*Sphere C: preparing and strengthening public buildings – hospitals, schools, buildings of response agencies, and additional public buildings.*

**Gap 10 – lack of an efficient implementation mechanism making broad use of advanced, effective, cheaper, and more practical strengthening solutions.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.8 | 4.9 | 4.8 |

There is a high level of variance among public buildings requiring strengthening. The most important buildings are schools, hospitals, welfare institutions, and buildings whose propriety is important for functioning following a disaster. A general difficulty concerns the high level of costs and the variance between different instances. Inexpensive and non-dramatic solutions are available, but there is currently no-one who can mandate the implementation of such solutions and promote efficient systemic implementation. At present, each body is required to lead implementation by itself, in a cumbersome manner that includes the issuing of a large number of tenders—a process which could be concentrated and made more efficient. The structure of responsibility is clear, but there is no mechanism for implementation to sufficiently advance the issue.

In terms of schools specifically, there are instances when advanced strengthening technologies have been used by Israeli engineers, importing technologies from abroad. Implementation is possible despite the fact that there is still no standard for strengthening, thanks to the green light given by the former chairperson of the Steering Committee for the import of strengthening methods that meet the US standard. This has led to more effective strengthening at lower costs, allowing strengthening to be implemented while the students are in school or during the summer vacation.

**Gap 11 – crude prioritization used as a foundation for setting policy. As part of this mapping, 3,500 public buildings were ranked on a crude basis, including 1,600 schools. Enhanced mapping would shorten the list and enable better prioritization regarding different public buildings.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.2 | 3.2 | 3.1 |

Specifically regarding schools: the existing mapping is crude and there is a need for more precise and sophisticated mapping in order to cut costs and enhance the efficiency of the process. The existing mapping includes 1,400 schools on the basis of a preliminary classification. However, experience suggests that enhanced mapping can be expected to reduce the number of schools requiring dramatic attention, and even the number of buildings within schools requiring strengthening. Conversely, some schools that require strengthening have been missed on the current map.

**Gap 12 – non-structural elements: lack of a central government agency with expertise in the field.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.4 | 5.0 | 4.8 |

A body with the necessary expertise could promote the preparation of regulations and procedures, together with training and control. This gap is worrying both in terms of injuries to person and property and in terms of the functioning of government units, such as hospitals, after an event.

**Gap 13 – the implementation mechanism is inefficient: the pace of progress is slow and allocated budgets remain unutilized.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.8 | 4.4 | 4.9 |

Regarding schools, the inefficiency is reflected in several respects. Each authority is required to undertake a series of actions that take a long time, and/or in which they lack the necessary expertise. For example, each authority must complete a lengthy procedure for issuing a tender for a tractor to uncover the foundations, instead of having a tractor on hand for the project. Another example is that the authorities lack the necessary knowledge to prepare tenders for strengthening, leading to the preparation of unsuitable tenders and ultimately causing years of delays. International experience shows that a central administration drawing on advanced engineering knowledge can lead to the strengthening of hundreds of schools in a single year (Cyprus, for example[[87]](#footnote-87)). Following a series of changes in the system for the attention to this issue in 2016, the pace of strengthening of schools has increased from a few schools a year to several dozen. Even so, hundreds of schools at high risk will not be attended to for many years.

Regarding hospitals, progress in strengthening is very slow. To date, two hospitals have been strengthened and the relevant budgets have not been utilized. Strengthening hospitals is a particularly complex process due to the need to undertake strengthening while the institution continues to function. The Finance Ministry has frozen the budget for strengthening due to the protracted planning proceedings.

**Gap 14 – regarding the strengthening of schools, there is a lack of pressure or incentives on the part of local authorities.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.5 | 4.0 |

The head of the relevant division in the Ministry of Education lacks the tools to apply pressure to the aforementioned authorities.

*Sphere D: preparing and strengthening privately-owned buildings, including residential homes.*

**Gap 15 – no government ministry has been made responsible for strengthening privately-owned buildings, despite the fact that this is the most critical aspect of preparedness in terms of saving lives.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.8 | 4.0 | 4.6 |

Government Resolution 1623 from 2010 – Quake/2[[88]](#footnote-88) imposes hundreds of responsibilities on dozens of government agencies. However, the most critical aspect in terms of saving lives is not addressed in this resolution. Various agencies are attempting to create partial practical solutions, such as different divisions of the Ministry of Housing, the Planning Authority, and the Steering Committee. However, these efforts are not backed up by responsibility and power, and accordingly are ineffective. The obvious preliminary solution is detailed under Gap 16 below. As for NOP 38: the plan is irrelevant for areas with low land values, and accordingly is irrelevant for towns adjacent to the Great Rift Valley. Even in cases of high land values, NOP 38 is not always feasible.

**Gap 16 – lack of government policy for addressing buildings at particularly high risk.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.8 | 4.8 | 4.8 |

Some of the many buildings were not constructed in accordance with Standard 431 can be defined as particularly high risk. These are buildings adjacent to active fault lines whose engineering structure is particularly sensitive to shakes, such as buildings constructed above a story of columns. An estimate based on mapping of Tiberias undertaken by a group of engineers from Ben Gurion University suggests a total of around 40,000 housing units in this category. It should be noted that simple and inexpensive strengthening has been proven to save lives.[[89]](#footnote-89)

It is important to note that in 2006 the Committee of Director-Generals already recommended a government subsidy for strengthening buildings in risk areas, but the subject has not been advanced.

**Gap 17 – lack of high-quality mapping enabling efficient prioritization and the setting of informed policy.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.0 | 3.8 |

Need for strengthening is currently defined on a crude basis according to year of construction and height of construction. The current estimate among government agencies is that some 800,000 housing units require strengthening. However, the mapping of certain critical features would enable far more efficient prioritization and concentration of effort. Mapping of residential buildings is currently based on advanced computerized analysis (as, for example, in Japan, Portugal, Italy, Turkey, and the US). This type of mapping can enable decision makers to develop far better informed and more efficient policy in terms of saving lives. The estimated cost of such a project is approximately six million shekels (according to a study by engineer Yaron Ofir). Mapping by the research time of Professor Igal Shohet for the city of Tiberias also highlighted the importance of mapping as a critical factor for focusing efficient efforts to save lives.[[90]](#footnote-90)

**Gap 18 – lack of adoption and inculcation of modern, efficient, cheap, and practical technologies**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.8 | 4.8 | 4.5 |

Diverse strengthening technologies still lack a standard permitting their use, such as seismic restraints and FRP sheets. Thanks to the approval granted by the Steering Committee, technologies approved by the US strengthening standard are being used to reinforce schools, thereby facilitating cheaper, more efficient, and more practical strengthening that can be completed in a short timeframe and/or during studies.

**Gap 19 – concern that strengthen buildings in the framework of NOP 38 is inefficient and even increases the risk to the original building due to the lack of a detailed standard and engineering planning without sufficient expertise and without external supervision and control.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.8 | 4.8 | 4.8 |

For example, a critical aspect in strengthening is the connection between the old and the new building. The wrong type of connection will lead to the collapse of the old building while the new structure remains intact.

**Gap 20 – there is no effective strengthening standard for mitigation processes.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.3 | 4.5 |

Work on the strengthening standard is continuing but at present there is no standard. The procedure for setting the standard is not sufficiently adapted to policy needs, is taking too longing, and is delaying effective policy that could save lives.

## F.2 Gaps in Preparedness for Response

*Sphere E: leading policy, integration, and concentration of preparedness for response.*

**Gap 21 – lack of a clearly-defined “national command chain” and lack of arrangements on the subject, including the definition of powers and obligations of the leading agency with regard to all the involved agencies.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.9 | 4.5 | 4.6 |

Multiple powers and an unclear division of responsibilities are impeding cooperation in preparedness and will impede the real-time functioning of the system. The gap is illustrated by the fact that several agencies hold overlapping fields of responsibility in the integration and coordination of preparedness for response:

- The Prime Minister’s Office (National Security Team, National Management Center)

- Police

- Defense minister

\* National Emergency Management Authority

\* Home-Front Command

\* Ministerial Committee for Preparedness for Earthquakes[[91]](#footnote-91)

\* Steering Committee for Preparedness for Earthquakes

- Local authorities

Regarding this gap, some feel that each ministry should prepare within its own field and there is no need for integration. Others (including the authors of this report) believe that there is a need for a coordination and integration agency.

In terms of the Emergency Economy System (EE), Government Resolution 1716 (Planning the Vital National Economy for an Emergency and Its Operation in an Emergency) establishes a clear hierarchy. This decision charges the Supreme Emergency Economy Committee (now headed by the defense minister) with issuing guidance and setting priorities. Underneath this committee are district emergency economy committees, and underneath these – local emergency economy committees. The head of the local authority serves as chair of the committee and is responsible on the local level. The police and military provide assistance, while the government is positioned above all the bodies (through the Center for Crisis Management in the Prime Minister’s Office), which creates a picture of the situation and issues recommendations.

Regarding other issues (outside the Emergency Economy structure), the Police Ordinance ostensibly states that the police is responsible for preparedness on the national level (“adopting all means ahead of an event.”) However, the interviews showed that many stakeholders believe that the police are not acting in accordance with this provision. Moreover, the government resolution (as opposed to the law) grants “overall responsibility” to the defense minister and to NEMA as “a headquarter agency alongside the defense minister, assisting him in realizing overall responsibility” – and not the police.

A number of additional issues emphasize this gap:

- The government resolution does not include a clear definition of “overall responsibility,” and the wording of the responsibility to “attend to the home front” is also vague.

- A significant portion of the powers for realizing the overall responsibility do not rest with the defense minister. For example, responsibility for police, fire-fighting, and rescue forces rests with the minister of public security, while the interior minister is responsible for the local authorities. It should be added that the heads of the local authorities themselves bear general responsibility, ostensibly including preparedness for disasters.

- Part of the preparedness in accordance with Government Resolution 1623 includes the preparation of plans for each agency and ministry. Many government ministries and agencies indeed appear to have plans, and the National Emergency Management Authority (NEMA) holds detailed procedures and professional guidelines for implementation telling each government ministry and agency what it must prefer. However, the power of NEMA to enforce the preparation of such plans would appear to be inadequate, since in legal terms it applies only to the local authorities, and even then it is ineffective.[[92]](#footnote-92) The interviews revealed that many heads of local authorities do not consider the subject of preparedness for earthquakes to be part of their role.

- The division of responsibility between the three agencies in the Ministry of Defense involved in the subject of integration of preparedness is unclear. These agencies are the National Emergency Management Authority (NEMA), the Home-Front Command, and the Steering Committee. A decision was recently adopted regulating the division of responsibility between the Home-Front Command and NEMA, whereby the Home-Front Command will work with the local authorities on their preparedness, while NEMA will operate with the government ministries. We are not in possession of the precise content of this decision, but to the best of our knowledge it has yet to be fully implemented. It is worth noting that the Ministry of Defense and the Home-Front Command do not have any power to manage the local and civilian economy, and their actions in the local authorities are undertaken mainly on the basis of goodwill and a desire to receive their assistance – something that is not always present. Moreover, while the Home-Front Command works with the local authorities, it is unclear who is responsible for preparing the public that lives in the authorities.

- We do not know whether any similar decision has been taken regarding the role of the Steering Committee in integrating preparedness.

- A further gap relates to the transfer of the command and control power in the event of a mass disaster from the police to the military. This transfer, known as “passing the baton,” is formalized in the military ordinance known as “Summer Cage,” but to the best of our understanding, this order has never been implemented. A situation whereby exercises in preparedness are undertaken on the initiative of NEMA and the Home-Front Command, while the police attends solely to real-time command and control, would appear to be problematic.

- The Steering Committee, who has just a single professional staff member apart from the chair, has been charged with acting as a headquarters agency with direct responsibility for coordinating and monitoring the entire field of preparedness for earthquakes in accordance with Resolution 1623, with all the government ministries and relative agencies. It is reasonable to assume that given its current structure, the Steering Committee cannot meet this task.

- Integration of the Ministerial Committee for the Preparedness of the Civilian Arena in the subject of preparedness for response, the specific responsibility it bears, and the division of labor between the committee and the defense minister are not clearly defined. In particular, both agencies are supposed to dictate policies and actions to the Steering Committee. It is unknown whether there is any coordination in the demands these two agencies make to the Committee.

- The Steering Committee is charged with reporting at least once a year to the Ministerial Committee for Preparedness for Earthquakes on the implementation of Resolution 1623, but it was not made clear to us what the Ministerial Committee does with the report.

*Sphere F: preparedness of local authorities*

**Gap 22 – lack of national mapping of needs and deficiencies in preparedness in the local authorities, and lack of a national plan for narrowing the significant gaps between authorities in the level of preparedness.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 5 | 5 | 4.8 |

The Municipalities Ordinance[[93]](#footnote-93) imposes a general obligation on the local authority “to do everything necessary to prepare the economy for an emergency and for its operation therein, including the organization and arrangement of the supply of vital commodities and services.” Regarding the municipalities (as distinct from local and regional councils), this obligation is “subject to the instructions of the minister responsible for actions in the relevant field, and in accordance with a plan approved by the government or by a person empowered thereby.”[[94]](#footnote-94) The heading “vital services” may include:

- Food

- Water

- Basic equipment

- Fuel / electricity

- Sanitation and refuse disposal services

- Transportation (transit and opening main arteries)

- Protection and guarding

- Educational institutions and attention to children

- Search and rescue

- Medicine and psychological services

- Attention to populations with special needs

- Missing, victims

- Evacuation of population, attention to those left homeless

Clearly, a local authority cannot supply all these services, some of which lie within the fields of other agencies. However, this reality is not duly reflected in regulation. Such a law, that cannot be implemented by the local authorities, leads in practice to the violation of the law and to inefficient and suboptimal preparedness.

As part of the overall responsibility incumbent on the defense minister, NEMA prepares a scenario for which the local authorities are supposed to prepare. This scenario includes preparedness for various events apart from earthquakes (particularly war, terror, and other natural disasters). The war scenario (in particular) has grown increasingly strict over the years, leading to an increase in the demands. In addition, the Municipalities Ordinance[[95]](#footnote-95) requires the interior minister to prepare each year, in cooperation with the relevant local authorities, a plan for the acquisition of equipment and the establishment of buildings for the purpose of the emergency economy. It also requires the finance minister to forward to the interior minister a sum of money from the state exchequers in each financial year equivalent to one-half of the total estimated expenditure approved in the said program. In practice, however:

- There are significant gaps between local authorities. “Rich” local authorities can fill relevant functions and purchase equipment, while “poor” authorities lack these capabilities and are completely unprepared. The widest gaps appear to be found in the local authorities in the Arab sector.

- There is neither orderly mapping of needs and deficiencies in each authority, nor a realistic plan for redressing these—such as coordination and the pooling of resources with the various government ministries.

- The budget is too low, especially since needs are rising constantly. Moreover, defective mapping prevents the optimal utilization of the budget.

- The government ministries do not bear any obligation to assist local authorities (as distinct from assistance during the response stage, which the various government ministries are explicitly mandated to provide in accordance with Resolution 1623 – the Ministries of the Interior, Welfare, Education, Immigrant Absorption, and so forth). Government Resolution 1623 (Quake/2) determines actions and tasks incumbent on the government ministries and subordinate units regarding preparedness for earthquakes, but merely instructs NEMA to guide, train, and control the preparedness of the local authorities.

It is clear that there is a lack of national and systemic solution determining which solutions are to be provided by which government ministries, as well as a lack of a plan in each ministry determining how it is to assist the local authorities. Furthermore, there appears to be a lack of an “address” on the national level – an agency with powers and capability responsible for the full scope of the issue of preparedness for emergencies in the local authorities. Such an agency would be responsible for ensuring that every local authority analyze the reference scenario and its ramifications, and every local authority would also know what it is supposed to prepare for. It should be noted that the Ministry of the Interior is the agency generally responsible for the local authorities and it attempts to help to the best of its ability. However, the ministry lacks personnel and budgetary resources. It should also be noted that, according to our examination, the Home-Front Command, the Ministry of Education, and the Ministry of Welfare have also taken responsibility for preparing the local authorities in their fields and help to the best of their ability. Apart from the fact that this assistance is insufficient, the lack of a clear integrating national address for preparedness in the local authorities remains unchanged.

The impression is that local authorities receive support and guidance on issues relating to preparedness for search and rescue, whereas various sectoral and economic issues, such as medicine, business, vital enterprises, banks, and so forth, are not properly covered. Moreover, there is a lack of clarity regarding the agency responsible for preparing the population. Does this issue form part of the responsibility of the local authorities or the Home-Front Command? We should also note that the local authorities lack professional staff on the subject of safety (as distinct from security), and most of them are unable to prepare the population in this field. Regarding the guidance of the local authorities, we found that until recently there was overlap between the Home-Front Command and NEMA (through the Emergency Economy Committee). As noted, the Ministry of Defense adopted a decision arranging the division of responsibilities between the agencies, whereby the Home-Front Command will work with the local authorities, while NEMA will work with government ministries. The implementation of this division would appear to be at too early a stage to permit assessment.

**Gap 23 – the local authorities lack personnel for preparedness, particularly trained professionals responsible for emergency and security issues.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.7 | 4.8 | 4.8 |

Several gaps can be seen regarding trained professionals in the emergency field in the different local authorities, particularly security officers. These gaps impair the quality of preparedness in the authorities:

- The Regulation of Security in Public Bodies Law, 5758-1998 does not apply to local authorities, and accordingly they do not bear a statutory obligation to maintain an emergency and security division.

- The security officers effectively lack powers and cannot issue any binding order to any person, such as various orders required for the purpose of guiding residents and protecting their security during an emergency. This contrasts with the powers of detention, denial of entry, and so forth granted to security guards.[[96]](#footnote-96)

- There are no regulations regarding the minimum training required for the position of security officer in the local authority.

- The salary of security officers is incompatible with the responsibility and complexity of the position.

- In many local authorities, the security officer is responsible for additional issues and does not have sufficient time to promote the preparedness of the authority.

- For the above reasons, the best professionals do not fill the positions of security officers in the local authorities.

- Most of the security officers lack a background, knowledge, and professional training in the emergency field. The security officers mainly come from the military system and their knowledge comes from a defense and guarding background, rather than from civilian emergency fields such as engineering, general economy, food, and transportation.

- In addition to the security officers, all the other officials in the local authorities should also undergo training for functioning in an emergency and be legally covered for performing functions in an emergency.

- It should be noted that positions exist for emergency personnel, but it is unclear whether enforcement powers exist with regard to employees who fail to report for work in an emergency. Opinions differ regarding the need for such enforcement, based on the recognition that any person’s first concern will be their own family. However, some of the powers can be regulated under the emergency regulations.

We should add that, unlike the local authorities, each government ministry now has an emergency and security officer, and in this respect the regulation of the subject in the government ministries is more advanced. However, the Regulation of Security in Public Bodies Law, 5758-1998, which defines the obligations and powers of professionals involved in the emergency field, relates to security rather than to emergencies. The security officer is appointed by the police and the GSS, whose field of concern is terror and security-related incidents, without attention to the “civilian” emergency field in appointment, training, implementation, and enforcement. NEMA has no powers in this field.

**Gap 24 – lack of practical tools for enforcement of preparedness in the local authorities by integrating agencies.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.6 | 4.5 | 4.4 |

NEMA (through the Emergency Economy committees) has detailed procedures regarding the requirements incumbent on local authorities. These are translated in detailed professional guidelines. In addition, NEMA, the Local Government Center, the Home-Front Command, and the Ministry of the Interior have prepared a “Master File for Local Authorities”[[97]](#footnote-97) defining the main tasks local authorities are required to undertake in the field of preparedness for emergency and regarding attention to an emergency incident. The file integrates NEMA’s instructions to the municipal Economy Committee and the Home-Front Command’s instructions in the field of civil protection. However, NEMA does not have any practical and legal tools for forcing the local authorities to make preparations in accordance with its instructions, since the head of each local authority effectively enjoys discretion in deciding on the level of preparedness of the authority for earthquakes. Many heads of authorities do not place the subject of preparedness for earthquakes high on their list of priorities (see also the comments regarding public outreach in preparedness).

Even if the head of the local authority is aware of their responsibility and capable of managing the system and making preparations, it is not always possible to respond to the needs they raise. Some local authorities have mapped their needs for preparedness, and gaps in equipment (quantity, scope, and quality) have been identified. In many cases, however, heads of local authorities are not concerned with preparedness and are failing to perform their obligation in this field. Accordingly, and as mentioned above, there should be an authoritative national agency capable of enforcing the preparedness senior officials in the local authorities.

*Sphere G: public outreach and awareness regarding the need for preparedness*

**Gap 25 – public outreach on the subject is not managing to create a high level of awareness among the public; this also influences the position of the issue on the agenda of decision makers.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.5 | 4.8 | 4.5 |

Government Resolution 1623 charged the Home-Front Command with responsibility for public outreach, presumably based on its experience in public outreach relating to preparedness for missile attacks and war. The Home-Front Command’s public outreach concentrates on guidance and training for residents, including the preparation in advance of ready-made media messages (including information about recommended behavior during events, on a real-time basis) and campaigns and training sessions in schools in cooperation with the Ministry of Education.

Additional agencies are also involved in training activists, including in the field of public outreach:

- The Ministry of Welfare provides budgets for the establishment of local emergency teams (in the regional and local councils) and neighborhood emergency teams (in municipalities).

- The District Emergent Economy Committee (NEMA) trains local action teams (in locales/neighborhoods) – initial self-aid teams – although we did not find any clear obligation requiring it to do so.

There would appear to be a lack of involvement of the local authorities in public outreach, given their direct contact with the residents. Local authorities do not have a defined role in guidance and public outreach regarding preparedness for earthquakes (and disasters in general), despite their general responsibility for protecting the area of the authority and security therein. Moreover, the local authorities lack the knowledge and ability to provide the relevant information. There also appears to be a lack of government public outreach through the internet, and particularly through the social media.

Lastly, the Home-Front Command and NEMA invest efforts in creating public outreach to specific communities (ultra-Orthodox, immigrants, Arabs), while the Ministry of Welfare and the Ministry of Education are involved in public outreach to the populations for which they are responsible. However, there appears to be a need for additional dedicated public outreach mechanisms in the government ministries and in various agencies (Infrastructures, Transport, Fire-Fighting and Rescue, Housing and Construction, etc.).

**Gap 26 – not all the local authorities have 24/7 hotlines, and there is a lack of support on this subject from central government.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.5 | 2.8 | 3.5 |

Some local authorities have well-developed mechanisms for 24/7 contact with the public through municipal hotlines and other means. There is a need for support from central government in order to optimize emergency preparedness.

**Gap 27 – there is no single emergency number in Israel.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.8 | 4.5 | 3.7 |

A single emergency number (like 911 in the US) makes it easier for people to call for help without having to think which type of emergency they are facing and without the need to be passed from one emergency hotline to another. An attempt has been made to introduce a 110-emergency hotline (application of the Home-Front Command), but this service is not yet operational.

*Sphere H: preparedness with regard to civil society organizations and volunteers*

**Gap 28 – preparedness regarding volunteers is not address in a concentrated and efficient manner; in particular, there is a lack of mapping and maintenance of volunteer databases by the relevant government agencies.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.6 | 4.4 | 4.2 |

Israeli society is able to mobilize to provide help in times of emergency, but there is a lack of regulation of this subject, particularly with regard to casual volunteers who are not part of an organized framework under any agency or authority (Magen David Adom, police, fire-fighters, etc.)[[98]](#footnote-98) NEMA is active in “resilience” and in contacts with civil society and business sector organizations (on the national level) and the subject is being developed and advanced. However, there still appears to be an unaddressed gap in this field, particularly on the local level and in the business sector:

- There is a lack of mapping of local civil society organizations, including an examination of the relevant capabilities of each organization in an emergency. Every local authority should have someone responsible for the subject of volunteers who will maintain an updated list of organizations, volunteers, and capabilities, coordinate needs, and allocate tasks.

- Similarly, many local authorities do not have a well-maintained volunteer system for emergencies. Such a system includes updated records of volunteers and their details, there fields of volunteering, and training as required. There is a lack of a person in the local authority responsible for volunteers who can coordinate needs and allocate tasks.

- There is also no database of relevant professionals (physicians, nurses, psychologists, owners of 4x4 vehicles and heavy machinery…) who can help in their field in the event of an emergency.

- A national database of volunteers should be established to manage the registration of volunteers and their fields of volunteering and to maintain volunteers, providing information, training, and maintaining contact with the place of volunteering.

- Volunteers lack training; in some cases, this should perhaps be compulsory.

- There is no mechanism for allocating tasks among organizations and volunteers, prioritizing the different tasks, and coordinating between the needs and the capabilities of volunteers to provide a response when needed.

On the national level, Government Resolution 1623 instructs each agency and ministry to prepare a list of people, volunteer teams, contractors, and supplies and to examine their skills and abilities and their availability in an emergency. However, it seems that many ministries and agencies have not prepared such lists.

*Sphere I: warning systems*

**Gap 29 – lack of warning systems in large sections of the economy, in crowded public buildings, vital enterprises, welfare institutions, etc., and relating to means such as computers, radio and television communication, and cell phones.**

**To table**

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.5 | 4.3 |

Since 2010 at least three government resolutions have been adopted[[99]](#footnote-99) on the subject, imposing clear responsibility for the establishment of warning systems. However, with the exception of educational institutions, no such systems are yet functional.

## F.3 Gaps in the Response Stage

### Sphere 10: Integration and Leading the Response

##### Gap 30 - There is lack of clarity regarding the integration of the work of the operational agencies and rescue agencies, what is shared by coordinating authorities and command and control authorities, what is shared by rescue agencies and operational agencies, and who belongs to each type.

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.8 | 3.4 | 3.4 |

According to the Police Ordinance, the Police is the organization in charge of “maintaining public order and safety of life and property” in the State of Israel. Also during a mass disaster, the Police is responsible for the command and control in the scene of the event, unless the Minister of Public Security asks to transfer the authority to the IDF. Then, the integration is transferred to the military; or if it is one of 6 exceptional events[[100]](#footnote-100) where the army is responsible for the command and control. [[101]](#footnote-101) However, government resolution 1623 from April 2010 determined that although the Police is responsible for the command and control during the event (according to the Police Ordinance), then during preparedness, coordination between the operational agencies - the IDF, NEMA, Police, and the Home-Front Command, the government ministries, the designated authorities and the local authorities falls under NEMA's jurisdiction. Therefore, there is lack of lack of clarity regarding the coordination powers between the aforementioned bodies that were given to the NEMA, and the coordination that is supposed to be done by the Police as part of its job to set integrated operating instructions with the rescue agencies - the Fire Authority, Magen David Adom, the local authorities, and the IDF, according to the Police Ordinance.[[102]](#footnote-102) It is also assumed that in the event of a serious earthquake, the command and control will be transferred from the Police to the IDF. This assumption raises the question of the efficiency in the “passing the baton” process that was previously mentioned.

Furthermore, there is no regulation regarding the duties and powers of the various organizations and the power relationships between them, such as - rescue agencies, auxiliary organizations, the operational agencies, essential enterprises, designated authorities. Moreover, additional bodies for the rescue agencies should be considered, such as the Israel Electric Corporation or the National Roads Company, which have heavy equipment and important resources that may save lives.

##### Gap 31 - There is an incompatibility between the Police’s capabilities and the responsibility of its command and control, which may cause suboptimal management of the event, in the case of a serious earthquake, by “passing the baton” to the Ministry of Defense

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.8 | 3.3 | 3.2 |

The Police has very limited resources and a multitude of different tasks. It does not have its own powers and during the event it will be dependent on other bodies—mainly the military forces, the local authorities, and the Fire Authority. In cases where there is no consensus regarding the necessary actions and priorities, a problem may occur when the military forces that are meant to obey the Police’s command and control will choose not to act according to its instructions, but rather will act according to their leaders’ orders.

##### Gap 32 - Lack of clarity pertaining to the body authorized to direct and prioritize the activities of organizations vital to the response that are not rescue agencies

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.8 | 4 | 3.4 |

Aside from the rescue agencies, numerous bodies will be required to provide assistance with the response (community organizations, volunteers, private medical organizations, energy, transportation, communications, and infrastructure organizations). The Police is not responsible for commanding and controlling all these, and it is unclear who will determine the prioritization between these bodies, and whether they will be able to give an appropriate response to the rescue agencies in the field. Moreover, it has not yet been examined who is responsible for training these bodies. In fact, regulation is required for the optimization of the network of organizations that will eventually be involved in the response since during disasters the hierarchical system cannot provide an optimal response on its own**.**

### Sphere 11: Local authorities and various services for the population during a response

##### Gap 33 - There is no clear division of responsibility regarding the services that will be provided among the local authorities and the services provided by the bodies from the central government during an earthquake.

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.4 | 4.4 |

As stated above, there is a long list of vital services and the local authorities cannot provide them all. The local authorities are prepared to provide municipal services, but will not be able to provide all the services. For example - health services, opening roads or distributing food (mainly in large local authorities like Tel Aviv)[[103]](#footnote-103).

##### Gap 34 - Lack of tools and ability of the local authorities to conduct integrity inspections for buildings and to deal with hazards after an earthquake. Lack of a body responsible for dealing with the issue.

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.6 | 4.8 | 4.5 |

The Law (Municipalities Ordinance) places direct responsibility almost exclusively on the local authority (municipality, local council, regional council) and gives it the power and authority to take steps to remove hazards and dangerous structures. However, the majority of local authorities do not have adequate tools and capabilities for this task – that is, people with professional knowledge to inspect integrity, and the physical measures to remove dangerous structures. The body that is meant to assist with this task, according to a government resolution, is the Ministry of Construction and Housing, which must give engineering assistance to assess damage and mark dangerous buildings.

##### Gap 35 - There is no body responsible for handling a population that will become needy/have special needs as a result of the event

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.2 | 4 |

The national and local social services authorities are prepared to handle “their own” populations (people placed in social institutions such as retirement homes, institutions for the handicapped, as well as people that are registered in the departments for social services in the local authorities), but are not prepared to handle additional populations that will become needy as a result of the event. For example - infants, the elderly, people cared for by foreign workers that will leave their clients, normative people that have lost their families and will remain dependent on external help, will require emotional assistance, and more. Foreign workers and caregivers (caring for the elderly and handicapped) - are not considered vital workers and it is not possible to bind them to their jobs.

Moreover, there is a gap pertaining to the body in charge of "special attention populations" (mentally ill, people in ambulatory care, ventilated, elderly without socio-economic problems, handicapped that are not helpless). These people are not registered with the Ministry of Social Affairs and the local authorities (unless they are receiving financial support from the National Insurance Institute) and it is unclear which body is responsible for caring for them during an emergency (also with regards to public outreach and instructions before the event). Note that there are records of such people at the Ministry of Social Affairs, but the information is classified (“locked safe” procedure), and therefore, cannot be used for preparedness. It is unclear whether it is possible to use information from the HMOs.

In this context the difficult question must be addressed of whether and how to legislate the issue of the rescue efforts that must be invested in people whose health condition is very poor to begin with and that the risk of attempting to save them will incur a cost that is too high.

##### Gap 36 - Undefined authority and responsibility regarding opening local clinics in the community to treat the population in the disaster area immediately after the event

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4 | 4 | 3.7 |

The issue of medical care of the public is mentioned in the 2007 State Comptroller Report and again in 2014. The report says that there is lack of clarity regarding the powers between the Home-Front Command and the Ministry of Health, which is where the higher power for hospitalization as part of the Emergency Economy is, under the guidance of the HMO clinics that are auxiliary organizations according to the Civil Defense Law. The Home-Front Command’s power (as a Civil Defense authority) to require the HMOs to open clinics in times of war does not exist in cases of natural disasters.

Furthermore, there is a lack of clarity regarding the responsibility for providing medical service during an emergency. According to the State Comptroller Report, explicit reference to the issue is lacking in the State Health Insurance Law, 5754-1994. In the absence of explicit treatment in the law, it is difficult to determine who is responsible for providing medical service during an emergency, and to what extent. However, there has recently been somewhat of an improvement—an agreement was signed with an HMO, via the Ministry of Health, to prepare universal clinics – "protected" clinics that will provide healthcare to people from any HMO during an emergency. Close to 100 protected clinics in the North have been located and the location process is still continuing. As of the time this report was written, it is unknown whether the clinics will be opened or not.

It should be noted that the higher authority for health at the Ministry of Health is responsible for the (government) hospitals, but not for the HMOs, which are private organizations.

In addition to the clinics, places to set up population assistance sites were located in some of the local authorities. It is necessary to expand this process and to determine points for preliminary treatment (including medical treatment) or population treatment points. To our understanding, this topic is being addressed, but has yet to be completed.

Additional gaps were found regarding the issue of responsibility for medical treatment during an emergency at the local authorities:

* There is no clear guideline regarding the training of the health supervisor at the local authority (in the overall population) and there is a huge difference between local authorities on the question of who will fill the position - from a salaried employee to a veterinarian... It seems that the problem is especially salient in the Arab authorities.
* The health supervisor at the local authority is meant to map the clinics in the event of a war but not in the event of an earthquake.
* Although every HMO has emergency supervisors, during routine there is no health employee at the local authority and therefore there is no direct contact between the local authority and the health agencies (unlike, for example, education or social services issues, where Ministry employees work at the local authorities. Working from the authorities makes it possible for the Ministry people to convey daily bidirectional information regarding the needs and capabilities of the local authority, and to match the Ministry’s support to these needs).
* Another gap emerged regarding the Emotional Support Procedure. According to what we were told, the Ministry of Health is responsible for this, but it is incapable of fulfilling its responsibility. There is a final draft and the topic is currently under discussion by the HMOs and the Ministry of Health.

### Sphere 12: Volunteers and auxiliary organizations during a response

The issue of manpower for a response is mainly regulated by the authority of the Defense Minister (with the approval of the Knesset’s Foreign Affairs and Defense Committee) to issue an order enabling the recruitment of reservists[[104]](#footnote-104) and the authority of the Economy Minister[[105]](#footnote-105) to use the order to call all the employees of an essential enterprise or an enterprise that provides existential services[[106]](#footnote-106) that are required to provide work service, for work service at that enterprise.

##### Gap 37 - The status and activity or unorganized / “spontaneous” volunteers is not regulated well

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.7 | 4.3 | 4.1 |

Government resolution 1623 (Earthquake/2) instructs every agency and ministry to prepare (inter alia) lists of volunteer teams. Different laws govern the issue of volunteering at the local authorities,[[107]](#footnote-107) and at the Police (as part of the Civil Guard). Also Magen David Adom and the Fire and Rescue Authority have an organized volunteer system, which is an integral part of their activity. However, there is a lack of legislative regulation about the time between the event and the declaration of a state of emergency and the arrival of forces, which will include a set of tools that give discretion to act to those in the field; Emergency regulations or shelf regulations that define everyone’s roles. The status of “spontaneous” volunteers who are not organized in such settings is unclear - who are they subordinate to and what authority do they possess (for example—to use force to enter places, to conduct potentially life threatening actions, to use private equipment and property, and more).

##### Gap 38 - Non-organized volunteers are not covered by insurance

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4.1 | 3.9 |

Non-organized volunteers are not covered by insurance and they may be susceptible to damages lawsuits if damage results from their assistance. It has not been checked whether “circumstantial protection” applies to them if they are sued in damages lawsuits due to their activity.[[108]](#footnote-108) The same goes for volunteers from abroad and the liability for damage that may be caused by their activity.

##### Gap 39 - The activity of the auxiliary organizations in mass disasters is not well organized

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.7 | 3.5 | 2.7 |

The duties and powers of the rescue agencies (Police Ordinance)[[109]](#footnote-109) and auxiliary organizations (Civil Defense Law)[[110]](#footnote-110) are governed in different laws and are under the authority of different ministers. While the rescue agencies are defined in the Police Ordinance and are subject to Police instructions (or the military, depending on the situation), the auxiliary organizations draw their authorities and duties from the Civil Defense Law. The authority of the Home-Front Command (as a civil defense authority) “to instruct and guide the auxiliary organizations to fulfill their role” is limited to the sphere of civil protection and for special home front situations, during an attack or civil defense maneuvers. This power does not apply during a mass disaster and natural disasters, including earthquakes.

##### Gap 40 - There is no mechanism to compensate employees—who could not make it to work—for lost work days

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.4 | 3.6 | 3.0 |

The Worker Protection during an Emergency Law protects workers that were absent from their jobs in the event of an attack or a special home front situation (in other words, it does not apply to natural disasters). A bill to amend the situation was presented three times since February 2014 but was not passed.[[111]](#footnote-111)

## F.4 Gaps in the Recovery Stage

### Sphere 13: Preparedness for recovery including integration and coordination

##### Gap 41 - There is no central body that integrates and leads recovery, which accompanies, coordinates, monitors, and audits the actions of the various bodies and the preparedness for recovery is progressing very slowly

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.7 | 4.5 | 3.5 |

In government decision 1623 (Earthquake/2), the Headquarters of the Director General of the Prime Minister was tasked with “*preparing and implementing a national long term recovery plan (via the Headquarters of the Director General of the Prime Minister and in coordination with NEMA and Ministry of Finance)*”. In practice, however, the Headquarters deals only with preparing the main mechanism that will deal with recovery and not with coordinating preparedness for recovery from a comprehensive perspective. There is preparedness for recovery in all sorts of spheres but not from an overall perspective and comprehensive coordination. There seems to be no preparedness in the legal and economic spheres (recovery fund) and there is no central national recovery plan.

##### Gap 42 - No bodies and powers were found to recruit manpower for the recovery stage

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.3 | 2.8 | 2.5 |

This is in contrast to the existence of the duties and powers to recruit manpower for the response.

### Sphere 14: The economic aspect, financial aid, insurance, and compensation

##### Gap 43 - There is no in-depth analysis of the economic aspect of recovery and tying it to investment in mitigation and in preparedness to the response

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.6 | 4.6 | 3.6 |

To the best of our knowledge, there is no detailed preparedness regarding various recovery scenarios and tying them to mitigation processes and preparedness for the response.

##### Gap 44 - There is no mechanism to determine eligibility for compensation and financial aid

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4 | 4.3 | 3.4 |

The professional literature recommends setting a policy and creating legal frameworks that will determine mechanisms for compensation and dividing the risk among public and private sources, such as insurance and reinsurance for earthquakes. The preparedness for recovery needs to prevent a situation of excess bureaucracy that will leave people without solutions on the one hand, and on the other hand - fear of corruption and disorder regarding the eligibility for housing and various payments, such as income support. Therefore, it is necessary to find a point of balance and criteria for eligible people, which will make it possible to distinguish between eligible and ineligible. Note that the existing mechanism of the Compensation Fund at the Tax Authority is limited to damages from terrorism and damages to agriculture from floods and drought alone and does not apply to earthquakes. This gap pertaining to compensation and the distribution of expenses between the state and the insurance companies manifests prominently after the blazes that occurred in the Haifa area in November 2016.

Note that the Income Support Law governs that everyone that is defined as homeless (“displaced”) will receive 1000-3000 ILS and that the National Insurance Institute lowered the checks threshold regarding who indeed is homeless and who is not. In addition, the Ministry of Interior (evacuation, relief, casualties) grants compensation of 150 ILS per capita (Absorption Basket).

##### Gap 45 - There is an unaddressed insurance failure with apartment insurance

[The table](#Table3A)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 4.3 | 4 | 3.5 |

The insurance for private apartments in most cases cannot be claimed if there are tenants that did not insure their apartment and they lack the necessary financial resources or are not interested in rebuilding their apartment.

### Sphere 15: Infrastructure recovery

##### Gap 46 - There is no primary mechanism to deal with vital infrastructures and to ensure their integrity in contrast to the recommendation in the professional literature

[The table](#Table3)

| Consensus about gap | Importance | Urgency |
| --- | --- | --- |
| 3.6 | 4.4 | 4.1 |

## F. 5 The Overall Situation

Table 3 shows the spheres in which the gaps were identified, for each sphere of practice in each of the four stages of preparedness: prevention (mitigation), preparedness for the response, the response, and recovery. The table can be used to see what spheres of activity the gaps are in.

Note that there may be additional spheres of activity with gaps that were not identified in the study.

Clicking on the gap number leads to its description in the text above. Use [the interaction map of the regulation for each body according to spheres of activity](https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdrive.google.com%2Fuc%3Fexport%3Ddownload%26id%3D0B7CnzVNKHOwsekZUaWEzV25ydVU),[[112]](#footnote-112) in order to examine which bodies are meant to deal with each sphere of practice, and what legal tools they have at their disposal.

Table 3: A Map of the Gaps based on Spheres of Practice

|  |  |  | **Before an Earthquake** | | **During** | **After** |
| --- | --- | --- | --- | --- | --- | --- |
| **Topics** | **Spheres of Practice** | **Breakdown of the Spheres** | **Prevention** | **Preparedness for a Response** | **Response** | **Recovery** |
| **Buildings and infrastructures**  **(‘concrete and steel’)** | **Construction standards and licensing** | Engineering and construction standards | [4](#P4),[20](#P20) |  |  |  |
| Land use planning and construction licensing |  |  |  |  |
| **Integrity inspection and dealing with buildings and infrastructure facilities** | * Energy (electricity, gas, fuel) | [3](#P3),[4](#P4) |  |  | [46](#P46) |
| * Pipes and water facilities | [3](#P3),[4](#P4) |  |  |
| * Pipes and sewage facilities | [3](#P3),[4](#P4) |  |  |
| * Transportation infrastructures | [4](#P4),[5](#P5) |  |  |
| * Roads |  |  |  |
| * Trains |  |  |  |
| * Ports |  |  |  |
| * Airports |  |  |  |
| * Communication infrastructures | [4](#P4),[6](#P6) |  |  |
| * Waste disposal facilities and sites |  |  |  |
| * Hazardous materials handling facilities | [7](#P7),[8](#P8),[9](#P9) |  |  |
| **Integrity inspection**  **and dealing with non-infrastructure buildings** | * Public buildings | , [12](#_פער_12_–)[10](#P10),[11](#P11), [13](#P13),[14](#P14) |  | [34](#P34) |  |
| * Essential enterprises |  |  |  |  |
| * Private buildings and residences | [15](#P15),[16](#P16),[17](#P17),[18](#P18),[19](#P19),[20](#P20) |  | [34](#P34) |  |
| **Warnings** | **Warnings** | * Monitoring ground movements and forecasting damage |  |  |  |  |
| * Early alert and warning devices | [29](#P29) |  |  |  |
| **Drills** | **Drills** | * Drills for the rescue and emergency forces |  |  |  |  |
| * Drills for the population |  |  |  |  |
| * Drills for the infrastructure providers (energy, water, transportation, communications) |  |  |  |  |
| * Drills for service providers (food, education institutions, medical institutions) |  |  |  |  |
| **Functional continuity of the economy -**  Supplying the actual services (for example - generators and fuel electricity, water in bottles/portable containers...) | **Supply of infrastructure services** | **The existence of basic infrastructure services** (temporary and permanent solutions) |  |  |  |  |
| * Energy supply (electricity, gas, fuel) |  |  |  |  |
| * Water supply |  |  |  |  |
| * Sewage and sanitation services |  |  |  |  |
| * Transportation services (shuttles, trains, port and airport function) |  |  |  |  |
| * Communications, cyber and postal services |  |  |  |  |
| * Waste disposal |  |  |  |  |
| * Handling hazardous materials and preventing environmental hazards |  |  |  |  |
| **Supplying vital services to the population** | * Search and rescue |  |  |  |  |
| * Medical services |  |  | [36](#P36) |  |
| * Missing persons, evacuation of casualties |  |  |  |  |
| * Protection and guarding |  |  |  |  |
| * Food supply |  |  |  |  |
| * Supply of basic equipment |  |  |  |  |
| * Functioning of essential enterprises |  |  |  |  |
| * Evacuating the population, caring for the homeless |  |  |  |  |
| * Functioning of institutions and childcare facilities |  |  |  |  |
| * Caring for special needs populations |  |  | [35](#P35) |  |
| * Financial aid |  |  |  | [44](#P44) |
| * Animals |  |  |  |  |
| * Certificates and documents |  |  |  |  |
| **Inter-disciplinary spheres**  (necessary for the various spheres of activity above) | **Preparedness and functioning of the local authorities** | * Readiness and functioning capability of the local authorities * Minimizing the gaps between the local authorities |  | [22](#P22), [24](#P24) | [33](#P33) |  |
| **Integration and leading** | * Leading policy, preparing plans * Creating a national situation report, integration and concentration | [1](#P1),[2](#P2) | [21](#P21) | [30](#P30), [31](#P31) | [41](#P41) |
| Skilled and proficient manpower | * Professionals responsible for the construction |  |  |  | [42](#P42) |
| * Workers trained to deal with earthquakes in the various sectors |  | [23](#P23) |  |  |
| * Coordinating and regulating volunteers |  | [28](#P28) | [32,](#P32)[37](#P37), [38](#P38), [39](#P39) | [42](#P42) |
| Public outreach, stakeholder involvement | * Public outreach, information, preparation, and instruction * Encouraging involvement |  | [25](#P25), [26](#P26), [27](#P27) |  |  |
| Resources and sources of funding | * Funding * Insurance, compensation |  |  |  | [40](#P40)  [43](#P43), [44](#P44), [45](#P45) |
| **Foreign aid and international relations** |  | * International relations * Receiving and distributing foreign aid * Creating strategic international collaborations |  |  |  |  |
| Contact with the Palestinian Authority, including coordinating an aid convoy |  |  |  |  |

# G. The Results of the Study: A Legal Analysis

## G. 1 Introduction and Explanation

This chapter deals with the legal gaps in the regulatory system for dealing with earthquakes that were found during the study. Note that a significant portion of the legal gaps have been mentioned previously. This chapter highlights the legal aspect of the gaps.

The chapter is based on information that was collected as part of the study, including the legal regulations (laws, regulations, administrative rules, and government resolutions) in Israel that can serve government agencies and authorities in order to prepare for and deal with earthquakes and their aftermath[. This database](https://drive.google.com/file/d/0B5dLxu7Spgj1SkIyTlVWbHBnZFk/view?usp=sharing) includes a synopsis of the sections of the law, regulations, and government resolutions that grant power and place duties on various organizations and functionaries—before an earthquake (mitigation and preparedness), during and immediately after (response), and afterwards (recovery) is found in Appendix B.[[113]](#footnote-113)

The legal gaps in this study were identified by examining the existing legal tools for the purpose of giving a response to the necessary spheres of activity (‘what needs to be done’), according to a spheres of activity table that was compiled during the study - see Spheres of Practice table ([Appendix G](https://drive.google.com/file/d/0B5dLxu7Spgj1QUw4TWNyZzBkdEk/view?usp=sharing)).[[114]](#footnote-114)

## G. 2 Types of Gaps

The legal analysis focuses on the existing powers (or lack thereof) in Israeli law and whether they are being used (or will be used when necessary). More specifically, the analysis focuses on legal authority, which also includes obligation and entails responsibility (civil or criminal). In other words: When the law grants *authority/power* to a person or legal entity (organization, private or public body, governmental authority, etc.) to carry out some action, then this same person or entity is also *obligated* to carry out this action. Improperly carrying out an action or not carrying it out at all entails responsibility (civil or criminal) for the subsequent outcomes. Concurrently, a person or legal entity as stated, who has not been granted legal authority to carry out an action, also has no legal obligation to carry it out, and thus will not bear the responsibility of the outcomes of not carrying it out. Moreover, if they act without authority, they will be responsible for the outcomes of such action.

Furthermore, the chapter examines the duties placed on the state authorities (“direct administration”)[[115]](#footnote-115)—laws, regulations, and government resolutions requiring authorities to conduct various actions for the purpose of preparedness and dealing with earthquakes.

The legal questions that were examined are:

1. Are there spheres of activity pertaining to dealing with earthquakes that do not entail authority, or that there is a lack of clarity regarding the authority in Israeli law?
2. Are there authorities that are not implemented by the relevant agency?
3. Are actions carried out in practice without a basis of authority/power?
4. Are there spheres of activity for which there is a fear of biased judgment, irrelevant considerations, etc.?

Cases in which the answer to the questions is affirmative we call “gaps”, where some are gaps in the written law (“law in the books”), and some gaps between what is written in the law and what is done in practice (law in action). The types of gaps are described in Table 4, and the gaps are numbered according to the legal questions.

Table 4. Types of Legal Gaps

|  |  |  |
| --- | --- | --- |
|  | The Law in Books | The Law in Practice |
| Gap in Authority | **Gap A1** - Lack of authority | **Gap B** - Not exercising authority |
| **Gap A2** - Multiple authority / lack of clarity regarding authority | **Gap C** - Action without authority |
| Tension between structure and purpose[[116]](#footnote-116) | **Gap D1** - Incompatibility between procedure and purpose | **Gap D2** – Using biased or improper discretion |

## 3 Breakdown of the Gaps

The allocation of gaps to the various spheres of preparedness is described in Table 5. They were numbered according to the order in which they appear in the table (1-16). The type of gap is written in parentheses next to the number of each gap, according to Table 4. For example: The first gap is type B, therefore marked in the table as 1(B)[[117]](#footnote-117).

Of the 16 legal gaps, we think the main ones are:

* Lack of authority and lack of clarity regarding the powers of the local authorities that can enable their readiness and their functioning capabilities (Gap 11)
* Lack of authority and lack of clarity for the bodies integrating and enforcing the mitigation, preparedness, and recovery issues in general and at the National Emergency Management Authority in particular (Gaps 12, 13, 17)
* Lack of authority and obligations on issues of strengthening standards and their enforcement (Gaps 1-4)
* Lack of authority and duties regarding caring for people dependent on foreign workers (Gap 10)

Table 5. Mapping Legal Gaps According to Spheres of Practice

|  |  |  | **Before** | | **During** | **After** |
| --- | --- | --- | --- | --- | --- | --- |
| **Topics** | **Spheres of Practice** | **Breakdown of the Spheres** | Prevention (Mitigation) | Preparedness for a Response | Response | Recovery |
| **Buildings and infrastructures**  **(‘concrete and steel’)** | **Construction standards and licensing** | Engineering and construction standards | [1(B)](#M1) |  |  |  |
| Land use planning and construction licensing | [2(B)](#M2) |  |  |  |
| **Integrity inspection and dealing with buildings and infrastructure facilities** | **Strengthening infrastructure facilities** |  |  |  |  |
| * Energy (electricity, gas, fuel) |  |  |  |  |
| * Pipes and water facilities |  |  |  |  |
| * Pipes and sewage facilities |  |  |  |  |
| * Transportation infrastructures |  |  |  |  |
| Roads |  |  |  |  |
| Trains |  |  |  |  |
| Ports |  |  |  |  |
| Airports |  |  |  |  |
| * Communication infrastructures |  |  |  |  |
| * Waste disposal facilities and sites |  |  |  |  |
| **Integrity inspection**  **and dealing with non-infrastructure buildings** | **Inspecting and strengthening non-infrastructure buildings** |  |  |  |  |
| * Public buildings | [3(A1) (inspection)](#M3M4)  [4(B) (strengthening)](#M3M4) |  |  |  |
| * Essential enterprises |  |  |  |
| * Private buildings and residences |  |  |  |
| **Warnings** | **Warnings** | * Monitoring ground movements and forecasting damage |  |  |  |  |
| * Early alert and warning devices |  |  |  |  |
| **Drills** | **Drills** | * Drills for the rescue and emergency forces |  |  |  |  |
| * Drills for the population |  |  |  |  |
| * Drills for the infrastructure providers (energy, water, transportation, communications) |  |  |  |  |
| * Drills for service providers (food, education institutions, medical institutions) |  |  |  |  |
| **Functional continuity of the economy**  Supplying the actual services (for example - generators and fuel electricity, water in bottles/portable containers...) | **Supply of infrastructure services** | **The existence of basic infrastructure services**  (temporary and permanent solutions) |  |  |  |  |
| * Energy supply (electricity, gas, fuel) |  | [5(A)](#_פער_5_(העדר); [6(B)](#_פער_6_(אי-הפעלת); [7(D1](#_פער_7_(הליך)) |  |  |
| * Water supply |  |  |  |  |
| * Sewage and sanitation services |  |  |  |  |
| * Transportation services (shuttles, trains, port and airport function) |  |  |  |  |
| * Communications, cyber and postal services |  |  |  |  |
| * Waste disposal |  |  |  |  |
| * Handling hazardous materials and preventing environmental hazards |  |  |  |  |
| **Supplying vital services to the population** | * Search and rescue |  |  |  |  |
| * Medical services |  |  | [8(A1/A2)](#M8) |  |
| * Missing persons, casualties (evacuation, relief, casualties) |  |  |  |  |
| * Protection and guarding |  |  |  |  |
| * Food supply |  |  | [9(D1)](#M9) |  |
| * Supply of basic equipment |  |  |  |
| * Functioning of essential enterprises |  |  |  |  |
| * Evacuating the population, caring for the homeless |  |  |  |  |
| * Functioning of institutions and childcare facilities |  |  |  |  |
| * Caring for special needs populations |  |  | [10(A1)](#M10) |  |
| * Financial aid |  |  |  |  |
| * Animals |  |  |  |  |
| * Certificates and documents |  |  |  |  |
| **Inter-disciplinary spheres**  (necessary for the various spheres of activity above) | **Preparedness and functioning of the local authorities** | * Readiness and functioning capability of the local authorities |  | [11(A2);(B);(A1)(A1/B)](#M11) |  |  |
| * Minimizing the gaps between the local authorities |  |  |
| **Integration and leading** | * Leading policy, preparing plans |  | [12(A2; A1)](#M12) |  | [17(A1)](#P17) |
| * Creating a national situation report, integration and concentration |  |  | [13(A2)](#M13) |  |
| Skilled and proficient manpower | * Professionals responsible for the construction and inspection |  |  |  |  |
| * Workers trained to deal with earthquakes |  | [14(1A; 2A)](#M14) |  |  |
| * Coordinating and regulating volunteers |  |  | [15(2A)](#M15) | [16(A1)](#M16) |
| Public outreach, stakeholder involvement | * Public outreach, information, preparation, and instruction |  |  |  |  |
| * Encouraging involvement |  |  |  |  |
| Resources and sources of funding | * Funding |  |  |  |  |
| * Insurance, compensation |  |  |  |  |
| **Foreign aid and international relations** |  | * International relations |  |  |  |  |
| * Receiving and distributing foreign aid |  |  |  |  |
| * Creating strategic international collaborations |  |  |  |  |
| Contact with the Palestinian Authority, including coordinating an aid convoy |  |  |  |  |

The following pages present a breakdown of the gaps, according to spheres of activity.

### Engineering and Construction Standards

##### Gap 1 (not exercising authority)—Lack of Israeli regulation for infrastructure facilities

No statutory binding requirements were found (“binding standard”) for earthquake-resistance for infrastructure facilities such as road and train bridges, power stations, drilling rigs, or national pipelines of hazardous materials such as gas, fuel, and water (except for liquid and gas storage containers, for which there is a standard). It seems that standard global standards were used, but there is no Israeli standard, and it is unclear whether there is a uniform global standard. The Standards Institute has not yet set these standards, and this task should not automatically be given to the Institute (due to structural problems in it). In any case, as long as there is no legally binding requirement, a basic regulatory component is missing from the structure.

**(Also see Gap no. 20 on pg. 35)**

[The table](#Table5)

### Land use and planning

##### Gap 2 (not exercising authority) - There is no external inspection and control of design and construction

External supervision and control of design and construction is lacking; the control institutes that were meant to be established according to government resolution 964 (2006) and Sec.158(14) in the Planning and Construction Law are not yet operational and when they will are—they will face a challenge to ensure suitable expertise to audit the strengthening of buildings for earthquakes. The previous gap—the absence of a legally binding standard—also affects the lack of control over compliance with the standard.

[The table](#Table5)

### Inspecting, Preparing, and Strengthening Privately-Owned Buildings

##### Gap 3 (lack of authority) - No responsibility (legal obligation) was placed on any government body to promote the strengthening of private buildings, particularly residences, where the majority of casualties are expected to be

The responsibility for promoting the strengthening of privately-owned buildings (specifically residential) was not placed on any government body. In practice, different bodies are trying to create partial solutions such as different departments in the Ministry of Housing, Planning Administration, and the Steering Committee.

**(Also see Gaps 1, 2 on pg. 28-30)**

##### Gap 4 (not exercising authority) - The power of local authorities to demolish dangerous buildings is almost never expressed. For example, as legal leverage to promote strengthening of existing buildings.

Local authorities that have adopted a municipal bylaw for the demolition of dangerous buildings (223 local authorities out of the 257 local authorities in Israel) have the authority to conduct a survey on buildings that may be a danger to the public and the authority to demolish dangerous buildings. This study did not examine the use local authorities make of their power to proactively demolish buildings that are not earthquake resistant, but we assume that this power is hardly ever exercised.

[The table](#Table5)

### Supplying Infrastructure Services - Energy

##### Gap 5 (lack of authority) - The issue of the fuel economy during an emergency has not been legally regulated

The Fuel Economy bill that was supposed to regulate, inter alia, the issue of fuel during an emergency has not yet been approved. The topic is currently anchored only in the Control of Commodities and Services Order (Regulations in the Fuel Economy), 5748-1988, and in the Arrangements in the State Economy Regulations (Legislative amendments to achieve the budget targets and the economic policy for the 2001 fiscal year) (holding reserves and fuel security), 5761-2001.

##### Gap 6 (not exercising authority) - No regulations have been set yet for using sources of energy during an emergency

The Minister of Energy and Infrastructure has the authority to install standards regarding the regulation of use of energy sources during an emergency [Energy Sources Law, 5750-1989 Sec. 3(A)(4)], but standards have not yet been set (as of May 2016). Consequently, this area relies on government resolutions or is expected to be regulated by the use of emergency regulations, and these two legal methods are legally inferior insofar as the implementation of the law is likely to be dependent.

##### Gap 7 (Incompatibility between procedure and purpose) - fear of conflict of interest between the higher authorities for water and power (electricity) and the actual companies

The heads of the Higher Authority for Power (electricity) and the Higher Authority for Water are the employees of the actual companies (the Israel Electric Corporation and Mekorot) - a situation that raises a concern of a conflict of interest - essential enterprises that supervise themselves. (However, the uniform association lowers the degree of friction between the inspector and inspected, and therefore enables better synchronization, but the more a building requires checks and balances, these are harmed).

[The table](#Table5)

### Regarding vital services that are unrelated to physical infrastructures

##### Gap 8 (Lack of authority or lack of clarity regarding authority) - medicine (in the response - medical care in the community): lack of clarity regarding the authority for instructing HMO clinics and the issue of providing medical service during an emergency

The issue of medical care of the community is stated in the 2007 State Comptroller Report and again in 2014. The report[[118]](#footnote-118) states that there is lack of clarity regarding the powers between the Home-Front Command and the Ministry of Health (the higher power for hospitalization as part of the Emergency Economy), under the guidance of the HMO clinics that are auxiliary organizations according to the Civil Defense Law. By law, the Home-Front Command (as a Civil Defense authority) does not have direct authority to require the HMOs to open clinics in situations of natural disasters.

Furthermore, there is a lack of clarity regarding the responsibility for providing medical service in the community during an emergency. According to the State Comptroller Report, a lacuna was found in the State Health Insurance Law, 5754-1994 that does not explicitly address the issue. According to the Comptroller, the preparedness of the HMOS during an emergency and the scope of the medical services and treatments given during such times to the population must be legislated. However, the Ministry of Health has not yet regulated the issue by law or by any other means. The HMOs, especially Clalit Healthcare Services, which insures 55% of the population, claims that the state does not allocate sources of funding and resources to planning and preparedness for states of emergency in the community, and it cannot prepare as required.[[119]](#footnote-119)

In the absence of explicit reference in the law, it is difficult to determine who is legally responsible for providing medical service during an emergency, and to what extent.

[The table](#Table5)

##### Gap 9 (Incompatibility between procedure and purpose) - supplying food and basic supplies: Mandatory tenders that apply during an emergency may significantly impair the provision of services to the population

Mandatory tenders also exist in times of emergency. This may make it difficult for all parties providing necessary services and may prevent the possibility of supplying necessary supplies. It is therefore reasonable to assume that in the event of an emergency, the mechanisms of exclusion will be applied to tenders in certain cases, for example, in Emergency Regulations or sweeping decisions to grant an exemption. However, this solution is not transparent to the public at present and does not allow public discussion in real time.

##### Gap 10 (lack of authority) – Special needs population (during the response): caregivers and foreign workers are not considered vital workers

Foreign workers and caregivers (caring for the elderly and handicapped) - are not considered vital workers and it is not possible to bind them to their jobs. In light of the needy populations’ dependence on these workers, there is a real gap in this vital social sphere.

[The table](#Table5)

##### Gap 11 (lack of clarity regarding authority, not exercising authority, lack of authority) - The preparedness of local authorities: The division between the local authorities and the national authorities in the provision of services is unclear; there is no clear control mechanism for the preparedness of local authorities; the National Emergency Management Authority’s power to instruct on the manner of preparedness is limited to municipalities alone; and municipalities also lack enforcement tools or do not exercise existing authority

Lack of clarity regarding power. As stated, the duty to provide vital supplies and services to the population falls mainly on the local authorities by virtue of the Municipalities Ordinance and the Councils Orders, requiring them to select a committee entrusted with preparing the economy for an emergency and activate it during an emergency (Emergency Economy Committee),[[120]](#footnote-120) where the preparedness guidelines are given by the National Emergency Management Authority.[[121]](#footnote-121) However, it is not always clear in all cases which services are meant to be given by the local authorities and which by the national authorities. For example, purchasing emergency equipment, preparedness for clearing rubble, preparedness for financial aid, and more.

Lack of clarity regarding power. According to the Municipalities Ordinance Sec. 248A(A), the Local Councils Order (A) Sec. 146 (13) and the Local Councils Order Sec. 63(A)(12), it is the local authority’s duty “to do everything necessary to prepare the economy for an emergency and to activate it on time, including the organization and regulation of provision of vital supplies and services”, but no clear control mechanism was found in favor of the local authorities’ compliance with the task. Moreover: These legal norms are not detailed, and it is unclear which agency is responsible for determining said detailing.

Lack of authority. In addition, note that according to the Municipalities Ordinance, this duty is “subject to the instructions of the minister in charge of the actions in the sphere pertaining to it and according to the plan approved by the government or an entity it authorized for that purpose”.[[122]](#footnote-122) From here it follows that municipalities are concurrently subject to potential instructions from various ministers, and there is not necessarily a clear mechanism to synchronize these instructions from a legal standpoint: Even if the National Emergency Management Authority is authorized to approve the plan, it is not obvious that it is authorized to instruct ministers how to exercise their authority, just as it is not obvious that the National Emergency Management Authority plan overrides the instructions of an authorized minister. In addition this sentence does not exist in the local and regional councils’ orders, and thus the National Emergency Management Authority’s power to instruct the local authorities how to prepare for an emergency is limited to municipalities only and does not apply to local and regional councils.

Lack of authority/not exercising authority. In terms of the municipalities as well, the National Emergency Management Authority does not actually have any tools to enforce the preparedness of the local authority according to its guidelines, since the decision regarding the level of preparedness of the local authority for earthquakes is in fact subject to the discretion of the head of each authority.

The issue of the powers of the local authorities to generate sources of funding for preparedness and mitigation was not examined in this study. It seems that the local authorities have a heavy legal responsibility, without having the explicit authority to collect levies or to impose fees for the purpose of complying with this legal responsibility.

**(Also see Gap no. 22 on pg. 37 and Gap no. 33 on pg. 43)**

[The table](#Table5A)

### Leading Policy, Integration and Concentrating Preparedness for the Response

##### Gap 12 (multiple authority and lack of clarity regarding authority) - multiple responsibilities, and division of roles between the leading bodies is unclear

Several bodies have responsibilities pertaining to the issue of integration and coordinating the preparedness to the response. The bodies and responsibilities are detailed in Table 6.

Table 6. Bodies responsible for integration and coordination of preparedness for the response.

| Body | The Power and the Source of the Power |
| --- | --- |
| **The government (Prime Minister’s Office)** | 1. Basic Law: The government, Section 38 (declaring a state of emergency); Sec. 32 (residual liability) |
| **The Ministerial Committee on the Readiness of the Civilian Arena for Emergencies** | 1. Government resolution no. 77, dated 28.04.2013 (preparing the civilian arena for various emergencies, including Civil Defense, earthquakes, and natural disasters) |
| **The National Security Council** | 1. The National Security Council Law, 5768-2008 (to activate the Center for National Crises Management at the Prime Minister’s Office, to perform the headquarters role... In the sphere that the Prime Minister determined)  2. Government resolution 77 (Coordinating the work of the Ministerial Committee on the Readiness of the Civilian Arena for Emergencies) |
| **The Interministerial Steering Committee for Earthquakes** | 1. Government resolution 1623 (Earthquake/2) dated 29.04.10 (the staff member of the Ministerial Committee and the coordinating body on its behalf between all the government ministries, other governmental bodies and civil organizations; will act alongside the National Security Council) |
| **Higher EE Committee** | 1. Government resolution no. 1716 dated 6.7.1986 + resolution 1080 dated 13.02.2000 (establishing and operating an Emergency Economy layout) |
| **Defense Minister** | 1. Government resolution 1577 dated 15.04.2007 (overall responsibility for caring for the home front in emergencies)  2. Chairperson of the Higher EE Committee |
| **National Emergency Management Authority** | 1. Resolution 43/B of the Ministerial Committee for National Security Affairs, 19.12.2007 (establishing the National Emergency Management Authority, to serve as a “coordinating headquarters body for the Defense Minister” and to help him fulfill the higher responsibility to care for the home front in all emergencies)  2. Resolution 1623 (Earthquake/2 - to serve as headquarters for the Defense Minister to manage the response on a national level regarding earthquakes)  3. Resolution 706 dated 23.8.2009 (integration of the national Emergency Economy headquarters in the National Emergency Management Authority) |
| **Home-Front Command** | 1. The resolution of the Ministerial Committee for National Security Affairs dated 13.11.91; Instructions from the Higher Command 020304 (to serve as the primary professional authority on civil protection and search and rescue, and the civil protection service as stated in the Civil Defense Law)  2. The Civil Defense Law, 5711-1951 (to organize and manage the civil defense in the country - **is not relevant for earthquakes**) |
| **The Police** | 1. Police Ordinance, Sec. 90D (during a mass disaster, also defined as a “fear of an event” where there is a concern for serious harm to public safety, including due to damage to nature, excluding an event which the Prime Minister or the Defense Minister have the authority to declare) the Police has the authority to instruct a rescue agency to act within the framework of its role and power and to give any reasonable instruction to every person in the area that may get hurt as a result of the event; |
| **Local Authorities** | 1. The Municipalities Ordinance, Local Councils Order and Regional Councils Order (to generally do any act necessary for the sake of protecting the local authority’s sphere, the public health, and security;  2. To do everything necessary for the operation of the emergency economy. |
| **Local Emergency Economy Committees** | 1. The Municipalities Ordinance and Councils Orders + government resolution no. 1716 dated 6.7.1986 + resolution 1080 dated 13.02.2000 (establishing and operating an Emergency Economy layout) |

Government resolution 1623 from April 2010 determined that although the Police is responsible for the command and control during the event (according to the Police Ordinance), then during preparedness, coordination between the operational agencies—the IDF, National Emergency Management Authority, Police, and the Home-Front Command, the government ministries, the designated authorities and the local authorities falls under the National Emergency Management Authority’s jurisdiction. In such a situation, the Police, which is the body integrating the event (at least until the baton is passed to the Defense Minister, if it is passed at all), is not engaged in integrating the preparedness. Therefore, there is lack of clarity regarding the coordination powers between the aforementioned bodies that were placed on the National Emergency Management Authority, and the coordination that is supposed to be done by the Police as part of its job to set integrated operating instructions with the rescue agencies (the Fire Authority, Magen David Adom, the local authorities, and the IDF), according to the Police Ordinance[[123]](#footnote-123).

Regarding the Steering Committee for Earthquake Preparedness: The committee was established by a decision by the Ministerial Committee for Earthquake Preparedness from 12.12.1999 (Earthquake/2) as “a headquarters body alongside the Ministerial Committee”. In government resolution no. 77 dated 28.4.2013 (resolution to appoint a Ministerial Committee to prepare the civil arena for an emergency, which replaces the Ministerial Committee to prepare for earthquakes that was established in 1999) determined that regarding the preparedness for earthquakes, the Interministerial Steering Committee for Earthquakes “will work alongside the Ministerial Committee”. This decision raises questions regarding the roles and powers of the Steering Committee:

* What is the status and roles of the Steering Committee with or vis-a-vis the National Emergency Management Authority?
* The Steering Committee’s status regarding the complexity of the task and regarding the Ministerial Committee is unclear (lack of clarity regarding authority, lack of authority).
* According to the aforesaid and pertaining to the division of authority between the Steering Committee and the Ministerial Committee: who has decision-making power? Who is leading whom? Who determines the policy and who is tasked with preparing for earthquakes? (Lack of clarity regarding authority)
* What are the capabilities of the Interministerial Committee to fulfill the role it has been tasked with as an entity in charge of preparedness and readiness of the State of Israel for earthquakes, when it is not an operational agency? The Steering Committee is supposed to determine actions and tasks of the government ministries and subordinate units for everything pertaining to preparedness for earthquakes and to task the government ministries to act and implement the tasks it has been charged with. But it does not have statutory enforcement tools to spur action and it seems that a central operational agency is missing vis-a-vis the complexity and importance of the task (lack of authority).
* Also the interface between the committee that deals with earthquakes and the preparedness for other disasters (natural and non-natural) is not clear and defined (lack of clarity regarding authority).

Regarding the Defense Minister’s authority and power:

* There is no clear definition of what “higher responsibility” is and the phrasing of the responsibility “to care for the home front” is vague (lack of clarity regarding authority).
* The Defense Minister is not responsible for coordinating the civil economy, even though he has the higher authority to deal with the home front in all states of emergency (lack of authority).
* Even though in government resolution 1577 dated 15.4.07 the Defense Minister was tasked with the “higher responsibility” to care for the home front in all states of emergency, no clear authorities were determined in the government resolution for the Minister to fulfill this responsibility. The Defense Minister does not have much power to fulfill the overall responsibility. For example, Police forces, Fire and Rescue forces, local authorities are subject neither to him nor to the National Emergency Management Authority. To reiterate, the Civil Defense Law does not grant the Defense Minister with power in non-civil defense spheres (except for saving persons and property), and he does not have the power to coordinate the entire civil economy. This gap appears in the State Comptroller Report from 2015 (see the Division of Responsibility and Power Appendix, pg. 41 of the report).
* The Defense Minister is responsible for all states of emergency. However, in a mass disaster the Minister of Public Security is in charge.[[124]](#footnote-124) This division and its implications, for example regarding the preparedness for the various situations, are not clear enough (lack of clarity regarding authority).

Regarding the Ministry of Defense: National Emergency Management Authority and Emergency Economy:

* According to government resolution 1716 (planning the country’s vital economy for an emergency and activating it during an emergency dated 6.7.1986), the Higher EE Committee[[125]](#footnote-125) (its activity is coordinated by the National Emergency Management Authority) is supposed to, inter alia: determine national, regional, and local plans to activate the production and supply entities, and the most vital services in the civil economy during an emergency; to determine ways, scope, and priorities for the allocation of means of production, resources, and other means that have been approved for the various entities that operate the vital economy during a time of emergency. It is unclear what tools are at the disposal of the National Emergency Management Authority to promote the implementation of these plans, since the National Emergency Management Authority and the Higher Emergency Economy committee lack legal authority and tools regarding the promotion of the preparedness of manufacturing, supply, and vital services entities during an emergency. As stated, the National Emergency Management Authority derives its powers from the Emergency Economy and all of its authorities and obligations (except for those stemming from the Municipalities Ordinance) were determined in government resolutions. It’s important to remember that any law overrides a government resolution and the legal basis for the National Emergency Management Authority’s activity is problematic since there may be conflicts between government resolutions and legislation, or among various government resolutions, or decisions regarding entities that are not directly subordinate to government resolutions, such as private enterprises or local authorities. In addition, remember that the issue of the essential enterprises is under the Ministry of Social Affairs and Social Services’ authority[[126]](#footnote-126) (lack of authority and double authority).
* NEMA has no real authority over the government ministries beyond their guidance. NEMA, like the Steering Committee, is a headquarters body and not an operational agency, and it does not have the means to execute and enforce. NEMA has no real authority over the government ministries. It can instruct, but not compel them to act according to its instruction. In the end, every organization has the power to decide regarding how to exercise the authorities it has been legally granted.

Regarding the Emergency Economy layout:

* The layout is anchored, as stated, in government resolution and not in law, and it seems that some of the agencies that are supposed to give binding instructions do not have the legal authority to do so (mainly regarding preparedness, and perhaps also during an emergency). For example: It is unclear what the origin of the National Emergency Management Authority’s power (which the Emergency Economy was incorporated into according to government resolution706 from 2009) to enforce on the National Roads Company or on Israel Railways to prepare preparedness plans[[127]](#footnote-127) (lack of authority).
* Declaring a mass disaster (under the Police’s power) does not activate the Emergency Economy layout (under the National Emergency Management Authority’s power). In other words, even if the Minister of Public Security declared a mass disaster, the Emergency Economy layout cannot be activated without a government resolution.[[128]](#footnote-128) This legal situation may, inter alia, slow down the speed of the response (lack of clarity regarding authority).[[129]](#footnote-129)
* A gap indicated in the State Comptroller Report from 2015[[130]](#footnote-130): The Emergency Economy is authorized to coordinate and instruct civil authorities and the IDF during an emergency, but is not defined as responsible for managing an emergency (lack of clarity regarding authority, lack of authority).

(Also see Gap no. 21 on pg. ???)

[The table](#Table5A)

### Integration and Leading the Response

##### Gap 13 - (Lack of clarity in exercising authority) - There is a lack of clarity regarding the integration of the work of the operational agencies and rescue agencies; what is between coordinating authorities and command and control authorities, what is between rescue agencies and operational agencies, and who is among each type

* The activity of the auxiliary organizations in mass disasters is not well organized: The duties and powers of the rescue agencies (according to the Police Ordinance)[[131]](#footnote-131) and auxiliary organizations (according to the Civil Defense Law)[[132]](#footnote-132) - are regulated in various laws and under the authority of different ministers. While the rescue agencies are defined in the Police Ordinance and are subject to Police instructions (or the military, depending on the situation), the auxiliary organizations draw their authorities and duties from the Civil Defense Law (as a civil defense authority). The Home-Front Command’s authority “to instruct and guide the auxiliary organizations to fulfill their role” is limited to the sphere of civil protection and for special home front situations, during an attack or civil defense maneuvers. This power does not apply during a mass disaster and natural disasters, including earthquakes (lack of authority).
* Lack of clarity pertaining to the body authorized to direct and prioritize the activities of organizations vital to the response: except for the rescue agencies, numerous bodies will be required to assist in the response (community organizations, volunteers, private medical organizations, energy, transportation, communications, and infrastructures agencies). The Police is not responsible for commanding and controlling all these, and it is unclear who will determine the prioritization between these bodies, and whether they will be able to give an appropriate response to the rescue agencies in the field.

Note that we did not examine who is responsible for training these bodies.

* It seems that there is disorder and lack of clarity regarding to the different definitions: rescue agencies, auxiliary organizations[[133]](#footnote-133), the operational agencies, essential enterprises, designated authorities... And to determine what the duties and authorities of each type of body, what its duties are and whose instructions it answers to and when. Moreover, introducing additional bodies to the rescue agencies should be considered, such as the Israel Electric Corporation or the National Roads Company, which have heavy equipment and important resources that may save lives.

Additional gaps indicated in the State Comptroller Report from 2015 [[134]](#footnote-134) and that deal with the lack of clarity in the authority in integration and leading the response:

Regarding the Home-Front Command:

* Double subordination of the Home-Front Commander: To the Defense Minister as head of the Civil Defense Authority, in accordance with the Civil Defense Law, and military subordination as an officer in the army - to the IDF Chief of Staff.
* According to Sec. 2(11) in the Civil Defense Law, for the purpose of organization and management of the civil defense in the country, the civil defense service (in other words: the Home-Front Command) has the power to act - with the Defense Minister’s authorization, whether in general or for a particular issue, and in coordination with the relevant authorities - to save person and property that does not entail civil defense. However, according to Sec. 9 of the Law, the authorities of the Civil Defense members and Civil Defense officers are limited only to a “special situation on the home front” and “during an attack”.

However, it should be noted that during a mass disaster, if and when the responsibility is transferred from the Police to the military according to Sec. 90(12) in the Police Ordinance - the IDF receives all the Police powers, and the soldiers receive the powers of police officers. However, until the responsibility is transferred, the problem of lack of authority will persist and may harm search and rescue efforts.

Moreover: If the operational default is that the power will be transferred, suspending it in a legal act creates a gap between the purpose and the structure.

Regarding Magen David Adom:

* There is lack of clarity regarding subordination to Magen David Adom. Magen David Adom is also an “auxiliary organization” as defined in the Civil Defense Law and also a “rescue agency” as defined in the Police Ordinance. According to Sec. 2(6) in the Civil Defense Law - during a special situation on the home front, during an attack, or during civil defense maneuvers, Magen David Adom - as an auxiliary organization - is subject to instructions from the Civil Defense/Home-Front Command. According to Sec. 90D.(C)(1) of the Police Ordinance - during a mass disaster, Magen David Adom - as a rescue agency - is subject to Police orders. Hence, in a mass disaster at a site where there is a special situation in the home front, there is allegedly double subordination - the Home-Front Command and the Police[[135]](#footnote-135). In addition, according to document M.M.M. from 2011, in the Special State Comptroller Report from 2007, the Comptroller stated that “one body should be determined that will activate Magen David Adom during an emergency, from all aspects, and will determine the priorities of Magen David Adom forces at these times”. In light of this criticism, in 2009, as part of the headquarters’ work together with the Ministry of Health, the Home-Front Command, and the National Emergency Management Authority, it was determined that the Ministry of Health is the body in charge of Magen David Adom during an emergency[[136]](#footnote-136) although we found no reference that this was given any legal anchoring.

Regarding the Fire and Rescue Authority

* The Home-Front Command and the Police, similar to Magen David Adom as stated, allegedly have double subordination in a mass disaster at a site where there is a special situation in the home front.
* Lack of clarity regarding definitions - There is no definition for “danger”, which appears as part of the definition of a fire and rescue event in Sec. 2 of the National Fire and Rescue Law, 5772-2012.

Regarding the Ministry of Public Security - Police:[[137]](#footnote-137)

* Even though the IDF is considered a rescue unit, the Police cannot order it to act in light of the Basic Law: The military, according to which the army is subject to the government's authority; the minister in charge of the army on behalf of the government is the Defense Minister.
* Lack of clarity regarding the spheres of responsibility between the Defense Minister and the Minister of Public Security: The higher responsibility for all emergencies has been placed on the Defense Minister, and the government resolution about establishing the National Emergency Management Authority (B/43) defined a state of emergency, inter alia, as a situation that requires “multi-disciplinary activity on a national home front level”. On the other hand, by virtue of the Police Ordinance the Police is responsible for the management and control of emergencies that pose a danger to human lives and property, even if they were not declared as “mass disasters”. In this case, there may be an overlap between the spheres of responsibility in the sphere of the operational effort of the Minister of Public Security, in that he is in charge of the Police, and those of the Defense Minister, and this may result in lack of clarity in managing this effort during emergencies.

Lack of clarity pertaining to the body deciding on a cessation of activity at educational institutions:

**In security emergencies - During a special situation on the home front or during an attack, the Home-Front Command has relevant authority according to - Sec. 9D(A)(1) of the Civil Defense Law, 5711-1951.** **In these situations, when the Home-Front Command instructs to close schools, the state compensates residents that have been harmed economically by it. In the case of a mass disaster, including an earthquake, it seems that the authority to instruct a cessation of studies belongs to the local authority, by virtue of the general authority in Sec. 249 (29) of the Municipalities Ordinance (and the orders of the parallel councils), instructing the local authority to usually conduct any action necessary to protect the municipal sphere, public health and security. In light of the fact that discontinuing school has important economic implications (such as compensation for missing work hours) whose control is not in the head of the authority’s power, it is fitting to examine how to regulate this issue, that also in the event of a mass disaster a response to the economic issue will be given, that will be valid also when the decision is made by the head of the local authority.**

(Also see Gaps 30, 31 on pg. 42-43)

[The table](#Table5A)

### Gaps pertaining to cross-disciplinary spheres - skilled and proficient manpower

##### Gap 14 (lack of authority) - There is no statutory obligation for emergency and security standards at the local authorities and the security officers lack authority and there are no clear requirements for their training

We identified gaps in training, certification, and the prevalence of skilled professionals responsible for emergency and security at the various authorities:

1. Lack of authority - The Regulation of Security in Public Bodies Law, 5758-1998 does not apply to local authorities and therefore they do not have a statutory duty to have an emergency and security department.
2. Lack of authority - The security officers (also in the public bodies that the law applies to) lack authority regarding the preparedness for emergency, and there are no clear requirements regarding their training in this sphere. The statutory powers and the training are limited to security issues alone[[138]](#footnote-138).

**(Also see Gap no. 23 on pg. 38)**

[The table](#Table5A)

##### Gap 15 (lack of authority and lack of clarity regarding authority) -The status and activity or unorganized / “spontaneous” volunteers is not well organized; there is no legislative regulation for the time between the event and the declaration of a state of emergency and the status of “spontaneous” volunteers is unclear

Lack of authority – Government resolution 1623 (Earthquake/2) instructs every agency and ministry to prepare (inter alia) lists of volunteer teams. Different laws govern the issue of volunteering. In the local authorities - Local Councils Order (A) Sec. 140A.(A), the Local Councils Order (Regional Councils) Sec. 61A.(A); at the Police (as part of the Civil Guard), at Magen David Adom, and at the Fire and Rescue Authority. The latter have an organized volunteer system, which is an integral part of their activity. However, there is a lack of legislative regulation about the time between the event and the declaration of a state of emergency and the arrival of forces, which will include a set of tools that give discretion to act to those in the field (emergency regulations or shelf regulations that define everyone’s roles).

Lack of clarity regarding authority - The status of “spontaneous” volunteers that are not organized in such settings is unclear - who are they subordinate to and what authority do they have (for example - to use force to enter places, to conduct potentially life threatening actions, to use private equipment and property, and more).

**(Also see Gap no. 28 on pg. 40)**

[The table](#Table5A)

##### Gap 16 (lack of authority) - Unorganized volunteers are not insured; There is no mechanism to compensate employees who could not make it to work for various reasons for lost work days;

Lack of authority - It seems that there is a gap in regulating the issue of the non-organized volunteers who may be susceptible to damages lawsuits if damage is caused by their assistance (damage to person or property) and they are not insured[[139]](#footnote-139). Note that it is also possible to define commercial and private companies and philanthropists as “volunteers”, and their responsibility for their actions if they cause damage must be regulated. In addition and in particular, the degree of liability that volunteers that help residents may incur if they are injured is unclear, and the degree of liability of volunteers from abroad is unclear regarding damage that may be caused by their activities.

Lack of authority - There is no mechanism to compensate employees that could not make it to work for lost work days. The Worker Protection During an Emergency Law protects workers that were absent from their jobs in the event of an attack or a special home front situation (in other words, it does not apply to natural disasters). A bill to amend the situation was presented three times since February 2014. See MK Dov Khenin’s private bill “Bill protecting workers during a mass disaster” that was presented in 2014, 2015, 2016.

Lack of authority - No bodies and powers were found to recruit manpower for the recovery stage, unlike the existence of duties and powers to recruit manpower for the response.

[The table](#Table5A)

##### Gap 17 (lack of authority) regulating the issue of recovery

**The study shows that there is a very large gap pertaining to recovery legislature. Except for extremely general guidelines in government resolution Earthquake/2 (1623) and minimal obligations of the National Insurance Institute, no allocation of obligations or powers was found for this topic.**

**(Also see Gap no. 41 on pg. 46-47)**

## 4 Analysis of the Types of Gaps

An analysis of the types of legal gaps shows that the majority of the gaps are those of lack of authority or lack of clarity pertaining to authority (see Table 7). Moreover, no spheres were found in which there is activity that is conducted without authority, or problems in exercising faulty discretion or that we predict will be incorrect in practice.

Table 7. Legal gaps according to the type of gap

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Law in the Books | | | | | Law in Action | | |
| D1. Process | | A1. Lack of authority  A2. Multiple authority / lack of clarity | | | B. Not exercising authority | C. Action without authority | D2. Using discretion |
| Before | During | Before | During | After | Before |  |  |
| 7 | 9 | 3 | 8 | 16 | 1 |  |  |
|  |  | 5 | 10 |  | 2 |  |  |
|  |  | 11A | 15 |  | 4 |  |  |
|  |  | 11C |  |  | 6 |  |  |
|  |  | 11D |  |  | 11D |  |  |
|  |  | 14A |  |  | 11B |  |  |
|  |  | 14B |  |  |  |  |  |
|  |  | 12 | 13 |  |  |  |  |

# Discussion of the Study Results

In the previous section we detailed the gaps between ideal and real that we found in the manner of preparedness and also identified a series of legal gaps. In this section we will offer an analysis and discussion of the study results.

## H. 1 Gaps in the Prevention Stage (Mitigation)

In the sphere of *Prevention (mitigation)*, we focused, as stated, on four spheres: Integration and leading; Hazardous materials facilities; Public buildings; and private residential buildings. We identified 20 gaps in these spheres (see Table 8). An analysis of the gaps raises several main insights:

* 1. There is a widespread general consensus regarding the gaps. The consensus is not complete and uniform but the gaps are substantively correct. The consensus average is 4.3 (out of 5). This means that in general the analysis indicates gaps that are well in line with the opinions of experts and stakeholders in the field. Moreover, in the experts’ workshops where these gaps were discussed, various experts and stakeholders expressed different points of view. Therefore, reaching a version that is agreed upon by all stakeholders and experts is usually impossible, and incomplete consent is inherent in the evaluation process.
  2. The gaps indicate poor preparedness in the prevention (mitigation) sphere. The list of gaps details missing basic components in mitigation processes such as: not placing responsibility for promoting the strengthening of private residential buildings, which is a main component of saving lives; poor risk management including a comprehensive mapping and in-depth prioritization; preparing buildings and infrastructures efficiently, using advanced technologies and at a reasonable scope. In addition, the identified gaps pertain to all the main spheres of prevention (mitigation) such as private residential buildings, critical public buildings such as hospitals and schools, different types of infrastructures and hazardous materials facilities. Individually, regarding the execution, the gaps refer to a shortage of engineering expertise in numerous prevention spheres (mitigation), which affect the efficiency and scope of execution. The importance average, which stands at 4.3, and the urgency average, which stands at 4.2, which were given to the 20 gaps that matched the severity of the gaps that were identified.
  3. The responsibility to promote the issue of strengthening the private residential buildings was not placed on any organization and this constitutes an obstacle to saving lives. To our understanding this is a serious flaw in the government’s activity. Improving the resistance of private residential buildings is a central sphere of prevention as this is where the majority of casualties are expected to occur. However, surprisingly, no government body was tasked with promoting the issue. Global attempts show unequivocally that without government intervention, the issue does not move forward—due to several built-in market failures in the private residential buildings sphere.[[140]](#footnote-140) Moreover, as stated and explained above, the National Master Plan for Strengthening Buildings against Earthquakes (TAMA 38) does not constitute an effective solution to the issue, mostly because it is not relevant to high risk areas in close proximity to the Great Rift Valley. Moreover, there is no standard for strengthening private residential buildings that will enable use of advanced and inexpensive strengthening technologies that can save lives. Moreover, there is no supervision and control of building strengthening processes that are complex from an engineering standpoint, and there is a concern that they are not performed effectively and are sometimes even performed in a way that weaken the resistance of existing buildings.
  4. An urgent need to strengthen the prevention integration (mitigation). The basic and fundamental gaps in the sphere of prevention indicate an urgent need to strengthen the national integration of the topic whether by reinforcing the Steering Committee or placing responsibility on additional bodies that will work concurrently on individual aspects in the prevention sphere. Note that the Steering Committee has only one professional employee aside from the Chairperson, and this in the face of an immense and complex issue. This gap is related to legal issues, outlined in the legal analysis, regarding the roles and powers of the Steering Committee, such as division of power between it and the Ministerial Committee.
  5. Systemic-lateral need for engineering expertise. Resolution Earthquake-2 divides numerous spheres of responsibility between the government ministries and subordinate agencies, however optimal execution of prevention (mitigation) requires risk management and engineering expertise, which these bodies do not have. This knowledge is required for quality mapping and prioritizing and effective implementation—including use of advanced and efficient strengthening technologies. It is unreasonable to expect each of the dozens of organizations to acquire this complex knowledge independently and there is a systemic-lateral need for a central body that will assist the various organizations with the issue.
  6. The degree of preparation of the infrastructure facilities is unknown and is not progressing efficiently. This stems, inter alia, from the lack of professional knowledge required to assist, instruct, and control the subordinate agencies by the government ministries in charge. Moreover, the degree of readiness of the hazardous materials facilities is not clear enough. Government investment is required in higher quality mapping and establishing an aid mechanism for enterprises that are not capable of upgrading the safety of the hazardous materials facilities.

The overall picture that emerges is deficient prevention (mitigation) that lacks basic components of effective prevention. Particularly prominent is the serious neglect of the strengthening of private residential buildings outside the areas of demand. There is no connection between steps to strengthen and reinforce residential buildings according to the National Master Plan for Strengthening Buildings Against Earthquakes (TAMA 38) and the degree of risk of earthquakes, and therefore buildings that are at high risk are not being addressed.

Table 8. Summary of Gaps in Prevention (Mitigation)

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gaps Identified at the Prevention Stage (Mitigation)** | | | | |
| Urgency | Importance | Consensus | Gap | Sphere |
| 4.7 | 4.3 | 4.0 | Gap 1 - There is no intensive integration of prevention (mitigation) |  |
| 4.8 | 5.0 | 3.8 | Gap 2 - There is no coordinating body with engineering expertise |
| 4.8 | 4.9 | 4.9 | Gap 3 - Energy, water, and sewage infrastructures lack a coordinating governmental agency with expertise in the field |  |
| 4.7 | 4.0 | 4.3 | Gap 4 - Non-structural elements, there is no coordinating governmental body with expertise in the field |
| 3.9 | 4.2 | 4.0 | Gap 5 - Transportation infrastructures: There is no coordinating governmental body with expertise in the field |
| 2.5 | 2.6 | 3.5 | Gap 6 - Communications infrastructures: There is no coordinating governmental body with expertise in the field |
| 4.2 | 5.0 | 4.5 | Gap 7 - Slow preparation of hazardous materials facilities |
| 2.5 | 3.15 | 4.4 | Gap 8 - Rough prioritization of hazardous materials facilities, there is no reference to proximity to the population and damage to the workers |
| 4.0 | 4.0 | 4.5 | Gap 9 - There is no support mechanism for enterprises that lack the resources for the required strengthening |
| 4.8 | 4.9 | 4.8 | Gap 10 - There is no effective implementation mechanism that will make extensive use of advanced, effective, and inexpensive and more applicable strengthening solutions | A. Integrating prevention (mitigation) efforts and leading a prevention policy  B. Preparing and strengthening hazardous materials facilities and national infrastructures in: energy (electricity, fuel, gas); water; sewage; communications; transportation (roads, train, ports, and airports), and waste. |
| 3.1 | 3.2 | 4.2 | Gap 11 - Rough prioritization is used to set policy |
| 4.8 | 5.0 | 4.4 | Gap 12 - Non-structural elements: There is no coordinating governmental body with expertise in the field |
| 4.9 | 4.4 | 4.8 | Gap 13 - The execution mechanism is inefficient |
| 4.0 | 4.5 | 3.4 | Gap 14 - Regarding strengthening of schools, leverage or incentive vis-a-vis the local authorities is lacking |
| 4.6 | 4.0 | 3.8 | Gap 15- The responsibility for promoting the strengthening of privately-owned buildings was not placed on any government body even though the majority of casualties are expected to be from residential homes | Sphere 4: Preparing and strengthening privately-owned buildings, including residential buildings |
| 4.8 | 4.8 | 4.8 | Gap 16 - There is no government policy for dealing with particularly high risk buildings |
| 3.8 | 4.0 | 4.3 | Gap 17 - There is no quality mapping that will enable effective prioritization and making informed policy |
| 4.5 | 4.8 | 3.8 | Gap 18 - There is no adoption and implementation of modern, effective, inexpensive, and more applicable strengthening technologies |
| 4.8 | 4.8 | 4.8 | Gap 19 - Concern that strengthening buildings as part of the National Master Plan for Strengthening Buildings Against Earthquakes (TAMA 38) is ineffective and even increases the risk to the original building |
| 4.5 | 4.3 | 3.4 | Gap 20 - There is no effective strengthening standard for mitigation processes |
| 4.2 | 4.3 | 4.3 | Averages | |

## H. 2 Gaps Identified at the Preparedness to the Response and the Response Stages

In the sphere of *Preparedness for the response*, the study focused on five spheres: Leading policy, Integration and coordination of the preparedness for the response; Preparedness of the local authorities; Public outreach and public awareness for the purpose of preparedness; Preparedness regarding the civil society organizations and volunteers; and alert systems. We identified nine gaps in these spheres (see Table 9). In the Response sphere, we focused on three spheres: Integration and Leading the Response, Local authorities and various services for the population during the response; Volunteers and auxiliary organizations during a response. We identified 11 gaps in these spheres. Several main insights emerged from an analysis of the gaps:

1. There is a widespread general consensus regarding the gaps. The consensus is not complete and uniform but the gaps are substantively correct. The consensus average is 4.1. This means that in general the analysis indicates gaps that are well in line with the opinions of experts and stakeholders in the field. Moreover, in the experts’ workshops where these gaps were discussed, there were difference in the points of view of the various experts and stakeholders who represent different bodies and organizations in the system, and it seems that some of the lack of consensus stems from this.
2. The analysis indicates the existence of preparedness components that are important for the response, and for which the challenge is improving the existing capabilities and improving the systemic collaboration. These elements include, inter alia: an active integrating body (the National Emergency Management Authority), which includes tens of employees (in contrast to the Steering Committee) that work to promote preparedness for emergencies vis-a-vis hundreds of bodies in the central and local government; the Home-Front Command, which is proficient and experienced in rescues during mass disasters; additional rescue agencies that are trained to handle disasters in the Israeli home front, although not on the scale of a strong earthquake, yet still skilled and posses practical experience; government ministries that are prepared for an earthquake in their sphere of responsibility; specific local authorities that invest significant efforts in preparedness for an earthquake. The main gaps are in improving the existing capabilities, addressing different legal deficiencies and more effectively addressing the serious gap of local authorities with very poor preparedness and mainly - improving the manner in which the complex system of the various bodies operates together as a multisectoral network of governance. In this context, note that there is a consensus between what is written in the literature and the opinion of the experts and stakeholders in practice, because the hierarchical system on its own cannot provide a suitable response to preparedness and response to disasters on such a large scale like an earthquake. Hence the great importance of the existence of a decentralized system in a network structure, in which each component is prepared on its own and connected to the other components. Thus, preparedness is conducted not only from top down, and when needed, everyone acts and assists others even without direct orders.
3. There is a series of gaps associated with the clarification of authorities and relations of power and responsibility among the various bodies. These gaps include the lack of clarity regarding the national chain of command; lack of clarity regarding the integration of the work of the operational agencies and the rescue agencies during a response; lack of clarity regarding the body authorized to direct and prioritize the activity of bodies vital to the response that are not rescue agencies; various gaps associated with “passing the baton” from the Police to the Defense Minister; “higher responsibility” placed on the Defense Minister but that does not include various powers required to fulfill this responsibility; the need for a clear division of responsibility regarding the services that will be provided to residents between the local authorities and bodies from the central government during an earthquake; and undefined power and responsibility regarding opening local clinics in the community to treat the population in the disaster area immediately after it occurs.
4. A serious gap that was identified is poor preparedness of the local authorities and the need for more effective government handling of these gaps. This gap is associated with a series of gaps, including the need for a clear division of responsibility between the local authority and the central government; a lack of national mapping of the needs and deficiencies in preparedness at the local authorities and the lack of a national plan to minimize the gaps among them; practical tools are lacking to enforce the preparedness of the local authorities by the integrating agencies; the local authorities lack manpower resources for preparedness, especially skilled and talented professionals in charge of the issue of emergency and security; a lack of tools and ability of the local authorities to conduct integrity inspections for buildings and deal with hazards after an earthquake; a lack of a body in charge of handling the topic. Moreover there is a series of gaps associated with the activity of volunteers during a state of emergency and in their organization for preparedness for an emergency.
5. There is a series of legal gaps that may make an efficient response difficult. These gaps include the mandatory tenders that apply during a time of emergency and may jeopardize the supply of services to the population; A lack of tools for the National Emergency Management Authority to promote the preparedness according to plans to activate production entities and to promote the preparedness of government ministries and government subordinate agencies, the supply and vital services in the civil economy during an emergency; regarding the special needs population, caregivers and foreign workers are not considered vital workers; the need for legal regulation of the fuel economy and the manner of use of sources of energy during an emergency; concern of a conflict of interest between the higher authorities for water and energy and the actual companies.

Table 9. Summary of the Gaps in Preparedness for the Response and during the Response.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gaps Identified at the Preparedness to the Response Stage** | | | | |
| Urgency | Importance | Consensus | Gap | Sphere |
| 4.6 | 4.5 | 3.9 | Gap 21 - There is no clear and defined “national chain of command” and the issue is not regulated | 5. Leading policy, integration and concentrating preparedness to the response |
| 4.8 | 5 | 5 | Gap 22 - There is no national mapping of the needs and deficiencies in preparedness at the local authorities and there is no national plan to minimize the significant gaps between the authorities at the preparedness level | 6. Preparedness of the local authorities |
| 4.8 | 4.8 | 4.2 | Gap 23 - The local authorities lack manpower resources for preparedness, particularly skilled professionals in charge of emergency and security issues |
| 4.4 | 4.5 | 4.6 | Gap 24 - There are no practical tools to enforce preparedness of the local authorities by the higher agencies |
| 4.5 | 4.8 | 4.5 | Gap 25 - The public outreach on the issue is not managing to bring about a high awareness among the public This also affects the issue’s position on decision makers’ agenda. | 7. Public outreach and public awareness for preparedness purposes |
| 4 | 2.8 | 3.5 | Gap 26 - There are no 24/7 municipal hotlines at all the local authorities |
| 4.8 | 4.5 | 3.7 | Gap 27 - Israel does not have one emergency number (like 911 in the United States) |
| 4.2 | 4.4 | 4.6 | Gap 28 - The preparedness on the issue of volunteers is not being handled in a coordinated and effective manner | 8. Preparedness regarding the civil society organizations and volunteers |
| 4.3 | 4.5 | 4.3 | Gap 29 - There are no alert systems in large portions of the economy | 9. Alert systems |
| **Gaps Identified at the Response Stage** | | | | |
| 3.4 | 3.4 | 3.8 | Gap 30 - There is lack of clarity regarding integration of the work of the operational agencies and the rescue agencies | 10. Integrating and Leading the Response |
| 3.2 | 3.3 | 3.8 | Gap 31 - There is an incompatibility between the Police’s capabilities and the responsibility of its command and control, which may create sub-optimal management of the event, in the case of a serious earthquake, by “passing the baton” to the Ministry of Defense |
| 3.4 | 4 | 3.8 | Gap 32 - Lack of clarity pertaining to the body authorized to direct and prioritize the activities of organizations vital to the response that are not rescue agencies |
| 4.8 | 5.0 | 3.8 | Gap 33 - There is no clear division of responsibility regarding the services that will be provided among the local authorities and the services provided by the bodies from the central government during an earthquake | 11. Local authorities and various services for the population during the response |
| 4.5 | 4.8 | 4.6 | Gap 34 - Lack of tools and ability of the local authorities to conduct integrity inspections for buildings and to deal with hazards after an earthquake. Lack of a body responsible for dealing with the issue. |
| 4 | 4.2 | 4.3 | Gap 35 - There is no body that is responsible for handling a population that will become needy/have special needs as a result of the event |
| 3.7 | 4 | 4 | Gap 36 - Undefined authority and responsibility regarding opening local clinics in the community to treat the population in the disaster area immediately after the event |
| 4.1 | 4.3 | 3.7 | Gap 37 - The status and activity or unorganized / “spontaneous” volunteers is not regulated well | 12. Volunteers and auxiliary organizations during a response |
| 3.9 | 4.1 | 4.3 | Gap 28 - Non-organized volunteers are not covered by insurance |
| 2.7 | 3.5 | 3.7 | 39. The activity of the auxiliary organizations in mass disasters is not well organized |
| 3.0 | 3.6 | 4.4 | 40. There is no mechanism to compensate employees that could not make it to work for lost work days. |
| 4.1 | 4.2 | 4.1 | Averages (for both times) | |

## H. 3 Gaps Identified in the Recovery Stage

Regarding the recovery sphere, we focused on three domains: preparedness for recovery including integration and leading; the financial aspect, financial aid, insurance and compensation; and infrastructures recovery. We identified five gaps in these spheres (see Table 10). An analysis of the gaps raises several main insights:

1. There is a widespread general consensus regarding the gaps. The consensus is not complete and uniform but the gaps are substantively correct. The consensus average is 4.1. This means that in general the analysis indicates gaps that are well in line with the opinions of experts and stakeholders in the field. Moreover, in the experts’ workshops where these gaps were discussed, there were difference in the points of view of the various experts and stakeholders who represent different bodies and organizations in the system, and it seems that some of the lack of consensus stems from this.
2. The gaps indicate poor preparedness in the recovery sphere. The gaps refer to basic components that are lacking in the recovery processes, and mainly the lack of a coordinating body that integrates and leads recovery, and that which accompanies, coordinates, monitors, and audits the actions of the various bodies. Moreover, the recovery preparations are progressing slowly. The Prime Minister’s Office is responsible for the preparedness and prepares the mechanism that will deal with recovery following an event but it does not deal with integration and leading the recovery vis-a-vis the other government bodies. The importance average of 4.1 is consistent with this assessment. The urgency average is lower at 3.4 and this is most probably because there is a greater urgency to conduct prevention actions and to improve the preparedness for the immediate response in favor of saving human lives.
3. There are significant gaps in the economic and insurance sphere: These include the insurance failure in apartment insurance that does not enable the recovery of apartment buildings if there are tenants that are not interested in or that cannot participate in the building’s recovery (for example because they did not insure their apartment). There is no mechanism to determine eligibility for compensation and financial aid, which adds to the uncertainty that harms optimal preparedness. And an in-depth analysis of the financial aspect is missing, which will illustrate the profitability of investing in prevention (mitigation), which has been proven in international studies[[141]](#footnote-141), and in preparedness for a response.

Table 10. Gaps Identified at the Recovery Stage

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Gaps Identified in the Recovery Stage** | | | | |
| Urgency | Importance | Consensus | Gap | Sphere |
| 3.5 | 4.5 | 4.7 | Gap 41 - There is no central body that integrates and leads recovery, which accompanies, coordinates, monitors, and audits the actions of the various bodies and the preparedness for recovery is progressing very slowly | 13. Preparedness for recovery including integration and coordination |
| 2.5 | 2.8 | 3.3 | Gap 42 - No bodies and powers were found to recruit manpower for the recovery stage |
| 3.6 | 4.6 | 4.6 | Gap 43 - There is no in-depth analysis of the economic aspect of recovery and tying it to investment in mitigation and in preparedness to the response | 14. The economic aspect, financial aid, insurance, and compensation |
| 3.4 | 4.3 | 4 | Gap 44 - There is no mechanism to determine eligibility for compensation and financial aid |
| 3.5 | 4 | 4.3 | Gap 45 - There is an unaddressed insurance failure with apartment insurance |
| 4.1 | 4.4 | 3.6 | Gap 46 - There is no main mechanism to deal with critical infrastructures and to ensure their integrity in contrast to the recommendation in the professional literature | 15. Infrastructure recovery |
| 3.4 | 4.1 | 4.1 |  | Averages |

## H. 4 Comparative Analysis between the Preparedness Stages

A comparison between the gaps found in each of the preparedness stages raises several more insights:

1. The response and preparedness for a response stages are much more advanced than the prevention and recovery stages. For the first two there is a relatively large integrating body with knowledge and capability and executing bodies with capabilities and relevant experience, and the challenge is to improve the existing multisectoral governance network and focused handling of its weak points. In contrast, the prevention (mitigation) stage lacks basic components of effective prevention (mitigation) such as regulated government promotion of strengthening the private residential buildings, and sufficiently intensive integration and leading that include imparting relevant professional knowledge to the various bodies in charge of prevention (mitigation) in their fields, for the purpose of effective mitigation based on mapping, prioritization, and use of modern strengthening technologies and at a reasonable implementation rate. An illustration of this gap is tens of professional workers at the National Emergency Management Authority compared to one professional worker at the Steering Committee. In fact, the prevention sphere lacks on operational agency with applied expertise, unlike the steering agency, which will lead the issue on a system-wide level and on a professional level. In light of the centrality of the mitigation stage in reducing the number of casualties, the implications of the system-wide weakness is that in the event of a severe earthquake, while the rescue teams, volunteers, and family members work to save individuals, hundreds and thousands are expected to be killed due to ineffective prevention.
2. The gap is not necessarily in budgeting but in the lack of investment in the leading mechanism. Hundreds of millions have been budgeted to mitigation processes but without intensive integration and leading that rely on risk management and advanced engineering expertise. These budgets are not optimally utilized or not utilized at all. This problem may be associated with the system-wide tendency to avoid enlarging the government system. However, in this case the weakness of the relevant government system results in much greater economic inefficiency and to an increased risk to hundreds of thousands of lives.

# Summary

This research deals with one of the main threats facing the State of Israel with regards to damage to person and property. The current reference scenario that the State of Israel is preparing for that expresses a sort of average of strong earthquakes estimates damage at a scope of 7,000 casualties and hundreds of thousands of destroyed apartments.

The goals of the study were to identify, map, and conceptualize the regulative framework of Israel’s preparedness for earthquakes and to evaluate it by addressing the regulation in the books and the regulation in practice.

A mapping of the topic raised an immense and complicated government and civil system that includes 109 bodies, and which is legally based on 28 laws, 10 regulations, and 44 government resolutions. In addition, the topic is related to numerous disciplines, such as: risk assessment and management, preparedness for disasters, building and infrastructures engineering, funding, insurance and other financial aspects, and geology.

A literature review that we conducted in the field of evaluation of regulation showed that there is no regulated methodology to conduct the required system-wide evaluation. Therefore, we developed a purpose-based methodology called *Evaluation of Regulation Systems*.The methodology relies on general principles for evaluating regulation and on individual principles to evaluate regulatory systems found in the professional and academic literature. The methodology is based on a process that includes the mapping of the current situation, mapping the ideal, and an analysis of the gaps between the two. Moreover, it incorporates the opinions of experts and stakeholders in the analysis process.

Concurrent to developing the methodology, the study’s deliverables include tools to map and evaluate the system, which can serve the bodies engaged in the topic to examine preparedness - either each body separately or the system in its entirety. By mapping the relevant organizations and spheres of activity and regulation presented in the network map, each government ministry can examine the tasks it is charged with and the subordinate agencies and the tools it can use to perform these tasks. Furthermore, the map makes it possible for each body to examine which other bodies have power in the spheres it has its own power.

An entity wishing to examine the entire system can use the mapping to identify spheres of activity that are not being addressed, ones that are not being addressed properly, and those that are addressed by different bodies without any coordination between them.

It is important to note that since this is a broad review of such an extensive topic, the goal of the methodology is to indicate the main gaps at the highest level of accuracy but naturally it is limited by the extensive scope of the covered topic. It is also important to note that the actual gaps are defined differently by the various functionaries and stakeholders. Therefore, another objective of the study is to create a generally accepted system-wide situation report.

An analysis of the gaps covered the four preparedness times: prevention (mitigation), preparedness for a response, response, and recovery. However, it focused on 13 individual spheres of preparedness. The analysis raised 46 gaps. As part of the experts and stakeholders workshop, a discussion of the gaps was held and several of the gaps’ characteristics were ranked by the participants. The main characteristics that were ranked are: the consensus about the gap, the importance of the gap, and the urgency of resolving the gap. The results of the ranking showed a high overall consensus with the gaps that were identified and in most cases they indicated high importance and urgency. The methodology proved itself to be effective in identifying significant gaps for a complex and extensive issue.

A general analysis of the gaps showed that the response and preparedness for a response stages are much more advanced than the prevention and recovery stages. For the first two there is a relatively large integrating body with knowledge and capability, and executing bodies with capabilities and relevant experience, and the main challenge is to improve the existing multisectoral governance network and focused handling of its weak points. In contrast, the prevention (mitigation) stage lacks basic components of effective prevention (mitigation) such as regulated government promotion of strengthening the private residential buildings, and sufficiently intensive integration and leading that include imparting relevant professional knowledge to the various bodies in charge of prevention (mitigation) in their fields, for the purpose of effective mitigation based on mapping, prioritization, and use of modern strengthening technologies and at a reasonable implementation rate. Effective prevention means that a strong earthquake can end without casualties or with only a few casualties, like in Japan, the United States, and Chile, although in Israel due to the deficient prevention (mitigation), a strong earthquake is expected to end in a huge catastrophe that deviates a great deal from the consequences of the harshest wars that the country has experienced. In fact, the prevention sphere lacks an operational agency with applied expertise, unlike the steering agency, which will lead the issue on a system-wide level and on a professional level. The implications of the system-wide weakness is that in the event of a serious earthquake, while the rescue teams, volunteers, and family members work to save individuals, hundreds and thousands are expected to be killed due to ineffective prevention.

The gap is not necessarily in budgeting but in the lack of investment in the leading mechanism. Hundreds of millions have been budgeted to mitigation processes but without intensive integration and leading that rely on risk management and advanced engineering expertise. These budgets are not optimally utilized or not utilized at all. This may be linked to the tendency to avoid enlarging the government system, however, in this case the weakness of the relevant government system results in a much greater economic inefficiency.

Individually, an analysis of the gaps at the *prevention (mitigation)* *stage* indicated poor preparedness in the prevention sphere, which constitutes a risk to the lives of thousands; failure in not placing responsibility on a government entity to promote the issue of strengthening residential buildings, which constitutes an obstacle to saving lives and to our understanding an oversight in the government's activity; an urgent need to strengthen the prevention integration (mitigation); a systemic need for engineering expertise; an unclear level of preparedness of infrastructure facilities and hazardous materials facilities.

An analysis of the gaps in the *preparedness for the response and the response stages* indicate the existence of preparedness components that are important to the response, with the main gaps being: improving the existing capabilities, improving the manner in which the complex system of the various bodies operates together as a multisectoral network of governance, and handling different legal deficiencies and in clarifying powers and power relationships between the different bodies. Another serious prominent gap is the local authorities with very poor preparedness and the need for more effective systemic handling of this issue. Moreover, there is a series of gaps associated with the activity of volunteers during a state of emergency and in their organization for preparedness for an emergency.

An analysis of the gaps at the recovery stage indicate deficient preparedness in the recovery sphere, and significant gaps in the economic and insurance aspects.

The methodology of *assessment of regulation systems* has proven its effectiveness in that it indicated important and significant gaps agreed upon by stakeholders and experts from different bodies. Spreading the picture of the gaps can help decision-makers in the field verify whether there are gaps between ideal and real that emerged as important and urgent and that are not receiving the proper attention.

Exactly ninety years have passed since the last serious earthquake in Israel, which took the lives of at least 285 people, and another 90 years since the strong earthquake before it, which resulted in 5000-7000 dead, approx. 2-3% of the population in Israel. After 90 years, we are presenting the report to the Steering Committee and to those involved in the issue, in the hopes that it will help the many efforts being made in the field. Clearly these entities are dealing with difficulties and constraints in promoting the issue. However, the lack of investment in a central mitigation mechanism and the ongoing neglect of the issue of high risk private residential buildings constitute a systemic failure on a national level. This oversight must be addressed immediately, by increasing the government integration and leading capabilities in the prevention (mitigation) sphere, by relying on advanced risk management methodologies and advanced engineering solutions and intensive engagement in the issue of the private residential buildings that are at high risk.

Photo 1. Photographed after the earthquake that occurred 90 years ago[[142]](#footnote-142).



1. Mitigation includes preventative actions to reduce long-term risks, such as strengthening buildings and infrastructure facilities, strengthening internal elements in buildings, and warning and alert systems. [↑](#footnote-ref-1)
2. Lobel, 2004, 2012; Levi-Faur, 2005, 2011. [↑](#footnote-ref-2)
3. O’Toole, 1997; Bingham et al., 2005; Levi-Faur, 2005, 2011; Lobel, 2004, 2012; Khademian, 2006. [↑](#footnote-ref-3)
4. O’Brian et al., 2010. [↑](#footnote-ref-4)
5. Cutter et al., 2008; Stewart et al., 2009. [↑](#footnote-ref-5)
6. Key interviewees were interviewed several times over the course of the research process. [↑](#footnote-ref-6)
7. Levy et al., 2013. [↑](#footnote-ref-7)
8. Amiran et al., 1994. [↑](#footnote-ref-8)
9. The Ministerial Committee for Preparedness for Earthquakes used a more severe scenario until 2010. [↑](#footnote-ref-9)
10. Interministerial Steering Committee, 2011. [↑](#footnote-ref-10)
11. See: <http://main.knesset.gov.il/News/PressReleases/Pages/press21116-0er.aspx> [↑](#footnote-ref-11)
12. Alfred E. Alquis Seismic Safety Commission, 2007. [↑](#footnote-ref-12)
13. Definitions from: FEMA, 2002. [↑](#footnote-ref-13)
14. See also: The National Academies 2012; SAGE 2012. [↑](#footnote-ref-14)
15. For an interpretation and discussion of the term, see: Rittel and Webber, 1973. [↑](#footnote-ref-15)
16. Lobel, 2004, 2012; Levi-Faur, 2005, 2011. [↑](#footnote-ref-16)
17. Lobel, 2012. [↑](#footnote-ref-17)
18. Quarantelli, 1988; Simo & Bies, 2007; Comfort & Kapucu, 2006; Kettl, 2006. [↑](#footnote-ref-18)
19. Farazmand, 2007. [↑](#footnote-ref-19)
20. O’Brian et al., 2010. [↑](#footnote-ref-20)
21. Cutter et al., 2008; Stewart et al., 2009. [↑](#footnote-ref-21)
22. Dunlop et al., 2012; Radaelli and Fritsch, 2012; Lofstedt, 2007; Weiner, 2007. [↑](#footnote-ref-22)
23. NSW Government, 2009; De Francesco, 2012; Weiner, 2007. [↑](#footnote-ref-23)
24. Ardnt et al., 2015. [↑](#footnote-ref-24)
25. OECD, 2011. [↑](#footnote-ref-25)
26. Rodrigo, 2005. [↑](#footnote-ref-26)
27. Carroil, 2010. [↑](#footnote-ref-27)
28. United Kingdom Treasury, 2003. [↑](#footnote-ref-28)
29. OIRA, 2011. [↑](#footnote-ref-29)
30. Atlan, 2013. [↑](#footnote-ref-30)
31. UNDR & IFRC, 2014, 4-41. [↑](#footnote-ref-31)
32. De Savigny and Adam, 2009. [↑](#footnote-ref-32)
33. Ibid. [↑](#footnote-ref-33)
34. Radaelli and Fritsch, 2012. [↑](#footnote-ref-34)
35. Sheikh et al., 2013. [↑](#footnote-ref-35)
36. Brown et al., 2006, 16. [↑](#footnote-ref-36)
37. Sheikh et al., 2013. [↑](#footnote-ref-37)
38. Sheikh et al., 2013; Brown et al., 2006. [↑](#footnote-ref-38)
39. Brown et al., 2006, xii. [↑](#footnote-ref-39)
40. Brown et al., 2006. [↑](#footnote-ref-40)
41. Ibid., 43. [↑](#footnote-ref-41)
42. Brown et al., 2006. [↑](#footnote-ref-42)
43. Sheikh, Saligram and Prasad, 2013. [↑](#footnote-ref-43)
44. Brown et al., 2006. [↑](#footnote-ref-44)
45. Brown et al., 2006; Sheikh et al., 2013. [↑](#footnote-ref-45)
46. Brown et al., 2006. [↑](#footnote-ref-46)
47. OECD, 2010. [↑](#footnote-ref-47)
48. Radaelli and Fritsch, 2012. [↑](#footnote-ref-48)
49. Radaelli and Fritsch, 2012. [↑](#footnote-ref-49)
50. Radaelli and Fritsch, 2012. [↑](#footnote-ref-50)
51. World Bank, 2016; OECD, 2010. [↑](#footnote-ref-51)
52. Ouchi, 2004. [↑](#footnote-ref-52)
53. Lunden and Oberg, 2014. [↑](#footnote-ref-53)
54. Sheikh et al., 2013; Brown et al., 2006; World Bank, 2015; OECD, 2010. [↑](#footnote-ref-54)
55. Hertin et al., 2009. [↑](#footnote-ref-55)
56. Ouchi, 2004. [↑](#footnote-ref-56)
57. Montpetit, 2008. [↑](#footnote-ref-57)
58. Hertin et al., 2009. [↑](#footnote-ref-58)
59. Radaelli and Fritsch, 2012. [↑](#footnote-ref-59)
60. Brown et al., 2006. [↑](#footnote-ref-60)
61. FEMA, 2011; Mosselmans et al., 2011. [↑](#footnote-ref-61)
62. The FEMA Local Mitigation Planning Handbook, 2013a. [↑](#footnote-ref-62)
63. O’Toole, 1997. [↑](#footnote-ref-63)
64. Mitchell, 2006. [↑](#footnote-ref-64)
65. Comfort and Kapucu, 2006. [↑](#footnote-ref-65)
66. Mitchell, 2006. [↑](#footnote-ref-66)
67. O’Toole, 1997; Comfort and Kapucu, 2006. [↑](#footnote-ref-67)
68. Simo and Bies, 2007; Steward et al., 2009. [↑](#footnote-ref-68)
69. Steward et al., 2009. [↑](#footnote-ref-69)
70. Bingham et al., 2005. [↑](#footnote-ref-70)
71. Levi-Faur, 2011. [↑](#footnote-ref-71)
72. Issues 1-3 – examining the propriety and attention (strengthening) of buildings, warning, and exercises, are prevention/mitigation issues. [↑](#footnote-ref-72)
73. Issues 5-9 not only stand on their own, but are also integrated in other issues, For example – manpower is needed for the strengthening of buildings, search and rescue, the supply of services to the population, etc. Resources and financing sources are required for every issue, etc. [↑](#footnote-ref-73)
74. The document at <http://minervaextremelaw.haifa.ac.il/images/Earthquakes_analysis_-_working_paper.pdf> includes a table detailing all the spheres of action by categories. Recommendations from the literature regarding the desirable situation are noted for each subject, as well as a list of agencies that bear obligations and powers in that sphere according to laws, regulations, and government resolutions. A review of this document permits an examination of the agencies that should address each issue and sphere of action; the powers and obligations they bear; and the source of the obligation or power (which law, regulation, or government resolution), as well as an examination of the gap between the actual and the desirable situation. [↑](#footnote-ref-74)
75. <https://drive.google.com/file/d/0B5dLxu7Spgj1QUw4TWNyZzBkdEk/view?usp=sharing> [↑](#footnote-ref-75)
76. An information base including all the mappings is available on the website of the Minerva Center for the Rule of Law under Extreme Conditions:

    <http://minervaextremelaw.haifa.ac.il/index.php/en/2-uncategorised/234-earthquakes-regulation-in-israel-database> [↑](#footnote-ref-76)
77. <https://drive.google.com/file/d/0B5dLxu7Spgj1SkIyTlVWbHBnZFk/view?usp=sharing> [↑](#footnote-ref-77)
78. The Appendix is available online at:

    <http://minervaextremelaw.haifa.ac.il/images/Earthquakes_Laws_and_gov_decisions_database.pdf> [↑](#footnote-ref-78)
79. <https://drive.google.com/file/d/0B5dLxu7Spgj1cXFVdHNBZ2tBaGM/view?usp=sharing> [↑](#footnote-ref-79)
80. <https://drive.google.com/file/d/0B5dLxu7Spgj1aDNVYm1CZ0tmNzg/view?usp=sharing> [↑](#footnote-ref-80)
81. Decision Quake/2 of the Ministerial Committee for Preparedness for Earthquakes dated 7 April 2010: Actions and Tasks of Government Ministries and Subordinate Units regarding Preparedness for Addressing Earthquakes. [↑](#footnote-ref-81)
82. The Appendix is available at:

    <https://drive.google.com/file/d/0B5dLxu7Spgj1QUw4TWNyZzBkdEk/view?usp=sharing> [↑](#footnote-ref-82)
83. <https://drive.google.com/file/d/0B5dLxu7Spgj1bjh4VkFtVENBWmM/view?usp=sharing> [↑](#footnote-ref-83)
84. The Appendix is available at:

    <https://drive.google.com/file/d/0B7CnzVNKHOwsWUhVWnRRSi03eVk/view?usp=sharing> [↑](#footnote-ref-84)
85. Wei et al., 2014. [↑](#footnote-ref-85)
86. Officials in the ministry were not willing to be interviewed. [↑](#footnote-ref-86)
87. As raised in the interview with engineer Yaron Ofir. [↑](#footnote-ref-87)
88. Government Resolution 1623 dated 29 April 2010 (also constituting decision Quake/2 of the Ministerial Committee for Preparedness for Earthquakes dated 7 April 2010): actions and task of government ministries and the subordinate units regarding preparedness for attention to earthquakes (preparedness, response, and recovery). [↑](#footnote-ref-88)
89. As raised in the interview with engineer Yaron Ofir, an expert in the upgrading of buildings against earthquakes. [↑](#footnote-ref-89)
90. Wei et al., 2014. [↑](#footnote-ref-90)
91. This ministerial committee was replaced in 2013 by the Ministerial Committee for Preparedness of the Civilian Sector in Emergencies. [↑](#footnote-ref-91)
92. NEMA does not have any power by law to enforce the preparation of plans and preparedness in the government ministries. NEMA was established in accordance with a government resolution, and there is no law granting it any powers. NEMA does, however, have powers regarding the local authorities as the Supreme Emergency Economy Committee. This power is derived from the Municipalities Ordinance, which requires the local authority “to do everything necessary to prepare the economy for an emergency and for its operation therein, subject to the instructions of the minister responsible for actions in the relevant field, and in accordance with a plan approved by the government or by a person empowered thereby.” The responsible minister is the defense minister, and the government approved Resolution 1716 (Planning the Vital National Economy for an Emergency and Its Operation in an Emergency), which constitutes a plan as stated. [↑](#footnote-ref-92)
93. Municipalities Ordinance, section 248(a)(a); Local Authorities Order, section 146(a)(13); Local Councils Order (Regional Councils), section 63(a)(12). [↑](#footnote-ref-93)
94. The responsible minister is the defense minister, and the “plan approved by the government” would appear to be Resolution 1716 – “Planning the Economy for an Emergency,” which establishes the Emergency Economy System and charges the Supreme NEMA Committee with various obligations, such as: activating the Emergency Economy; examining in coordination with the government ministries, recommending, and deciding on modalities and programs for the activation of the vital national economy in an emergency, with the goal of ensuring the supply of products and services determined to be vital; establishing national, district, and local plans for the activation of agencies of production, supply, and the most vital services in the civilian economy during an emergency, on the basis of data, programs, and proposals prepared by the various government ministries in accordance with the guidance of the Supreme Emergency Economy Committee. In accordance with Government Resolution 1623, too, NEMA is supposed to guide and prepare the local authorities (and dedicated authorities) regarding preparedness. [↑](#footnote-ref-94)
95. Municipalities Ordinance, section 248A(b), and parallel provisions in the Local Councils Order and the Regional Councils Order. [↑](#footnote-ref-95)
96. By virtue of the Powers for Protecting Public Security Law, 5765-2005. [↑](#footnote-ref-96)
97. The file was prepared under the guidance of a steering committee also including representatives of the Israel Police, the Ministries of Welfare, Education, Public Security, Economics, Health, Energy, Transport, Tourism, Environmental Protection, Religions, the Ministry for Senior Citizens, and a representative of the Organization of Security Officers. [↑](#footnote-ref-97)
98. The National Insurance Law recognizes only volunteers who work in accordance with a referral from a public agency authorized to refer volunteers. The list of these agencies appears in section 287 of the National Insurance Institute Law [Combined Version], 5755-1995. [↑](#footnote-ref-98)
99. Resolution 2305 (Quake/4), which was validated as a government resolution on 7 October 2010; Resolution 4738 (Quake/20), which was validated as a government resolution on 7 June 2012; and Resolution 5371 (Quake/22), which was validated as a government resolution on 20 February 2013. [↑](#footnote-ref-99)
100. A mass disaster originating from the area of a security facility or within an area held by the IDF; on land, which according to the government resolution, the IDF is responsible for its internal security; for an area that was declared a special situation on the home front; a disaster originating from transportation vehicles in the service of the defense establishment; a disaster in the area of nuclear research centers or a radiological, chemical, or biological disaster. [↑](#footnote-ref-100)
101. Transferring the power to the IDF (“passing the baton”) has been widely criticized, inter alia, because it is not always clear who is in command and control of the event. In May 2011, the Procedure for Regulating the Relationship between the Israel Police and the Home Front Command from a Command and Control Aspect during Emergencies and Routine, was signed. The Procedure was signed between the Police and the Home Front Command and is meant to settle the issue between both bodies. The Procedure defines what “responsibility for command and control” is (the responsibility to take command over the rescue agencies, coordinate their activity and set suitable priorities when providing the response, including conducting drills for the rescue agencies to prepare for the events), and a circular on the distribution of power according to the Police Ordinance, as stated. However, the Procedure makes it possible to determine “task-based responsibility for the scene” when the two bodies are entitled to agree that “the responsibility for the command and control of one body will be entirely or partially realized by the other body as task-based responsibility for a defined scene”. The Procedure defines the principles to be agreed upon as stated. [↑](#footnote-ref-101)
102. Sec. 90A. The Police Ordinance determines that the Police must determine “integrated operating instructions” - instructions that organize how a mass disaster is handled and prepared for (in the Police’s sphere of responsibility), while consulting with the rescue agencies, including, inter alia, instructions for a system-wide response for a mass disaster, command and control during said disaster, and coordination between the organizations and bodies operating during the disaster. [↑](#footnote-ref-102)
103. Note that the Ministry of Economy (the higher authority for food) ensures there is food in warehouses, but it is unclear how it will be distributed to those in need. [↑](#footnote-ref-103)
104. Reserve Duty Law, 5768-2008 Sec. 6(4). Among the goals of the reserve duty is “service in roles and professions for the purpose that the minister determined in the Order, approved by the Committee, after being convinced that there is no other reasonable alternative to achieve this goal unless a reservist is called to reserve duty”. [↑](#footnote-ref-104)
105. The Emergency Labor Service Law, 5727-1967; Youth Labor Law, 5713-1953 [↑](#footnote-ref-105)
106. An essential enterprise is any enterprise or part thereof that operates or that can be operated for purposes of state defense or public security or the provision of vital services, and that has been approved for this purpose in an order by the Minister (of the Economy). An enterprise for the provision of existential services is an enterprise that during a mass disaster (or special home front situation) will provide existential services in one of the following spheres: the supply of water, food, or electricity, the provision of hospital and health services, sanitation, communications, post, or a service that the Minister deems essential for supply or for caring for the population. The local authority is an “enterprise for the provision of an existential service". [↑](#footnote-ref-106)
107. The Local Councils Order (A) Sec. 140A. (A), The Local Councils Order (Regional Councils) Sec. 61A. (A) [↑](#footnote-ref-107)
108. However, note that according to government resolution 1623, the National Insurance Institute is supposed to handle the issue of acknowledging volunteers after the event. [↑](#footnote-ref-108)
109. According to the Police Ordinance, a rescue agency is “a body whose help is required during a mass disaster and is one of the following: (1) Magen David Adom in Israel (...); (2) Israel Fire and Rescue Services; (3) Local authority (...), or Association of Cities; (5) A body, including an organization, institution, enterprise or unit, or part of said body, that gives a service to the public, which the Minister declared in an announcement in the records, with the consent of the Minister that was deemed responsible for the same body, if determined said Minister, that it is a rescue agency. Moreover, according to Sec. 90K(C) of the Police Ordinance, when the IDF and the Civil Protection Service assist the Police - they are treated as rescue agencies. (No records were found on other rescue agencies. No publication was found that “rescue unification” is a rescue agency or auxiliary organization). [↑](#footnote-ref-109)
110. Auxiliary organizations that were declared as part of the Civil Defense Law: Magen David Adom, every HMO and associated clinic, women’s organizations (WIZO, Working Women’s Council, and more), ZAKA, and the Hazardous Materials Response Team at the Ministry of Environmental Protection. [↑](#footnote-ref-110)
111. See MK Dov Khenin’s private bill “Bill protecting workers during a mass disaster” that was presented in 2014, 2015, 2016. [↑](#footnote-ref-111)
112. <https://view.officeapps.live.com/op/view.aspx?src=https%3A%2F%2Fdrive.google.com%2Fuc%3Fexport%3Ddownload%26id%3D0B7CnzVNKHOwsekZUaWEzV25ydVU> [↑](#footnote-ref-112)
113. <https://drive.google.com/file/d/0B5dLxu7Spgj1SkIyTlVWbHBnZFk/view?usp=sharing> [↑](#footnote-ref-113)
114. <https://drive.google.com/file/d/0B5dLxu7Spgj1QUw4TWNyZzBkdEk/view?usp=sharing> [↑](#footnote-ref-114)
115. Yitzhak Zamir “Public inspection of private activity” **Mishpat VeAsakim** [Law and Business] B, 67, 70 (2005). [↑](#footnote-ref-115)
116. The intention is a gap between the institutional structure or the structure of the process that dictates the manner of the legal rule being implemented, and the purpose of the rule. For example, structure or process enabling a conflict of interest. [↑](#footnote-ref-116)
117. Some of the legal gaps, those that were found to be important - are incorporated in the General Gaps section above. In cases where the legal gap appears previously - the gap number and page it previously appears on is written in bold. [↑](#footnote-ref-117)
118. State Comptroller Report 64C, pg. 717 [↑](#footnote-ref-118)
119. See: Protocol of the State Control Committee dated 02/07/2014 [↑](#footnote-ref-119)
120. The Municipalities Ordinance [new version]; The Local Councils Order (A) 5711-1950; The Local Councils Order 5718-1958. Also see government resolution 1716 - Planning and operating an Emergency Economy layout [↑](#footnote-ref-120)
121. By virtue of government resolution 706 dated 23.08.2009 - the integration of the National Emergency Economy Headquarters in the National Emergency Management Authority. [↑](#footnote-ref-121)
122. The minister in charge is the Defense Minister, and it seems that the plan that the government approved is Resolution 1716 - “National Emergency Plan”, which establishes the Emergency Economy layout and places various duties on the Higher EE Committee (National Emergency Management Authority) such as: to activate the Emergency Economy layout; to examine in coordination with the government ministries, to recommend and to decide on ways and plans to activate the state’s vital economy during an emergency, in order to ensure the supply of products and services that were determined to be vital; to determine national, regional, and local plans to activate the most vital production, provision, and services in the civil economy during an emergency, based on data, plans, and proposals that were prepared by the various government ministries according to the Higher EE Committee guidelines.

     **Also according to government resolution 1623,** theNational Emergency Management Authority is meant to train the local (and designated) authorities for preparedness. [↑](#footnote-ref-122)
123. Sec. 90A. The Police Ordinance determines that the Police must determine “integrated operating instructions” - instructions that organize how a mass disaster is handled and prepared for (in the Police’s sphere of responsibility), while consulting with the rescue agencies, including, inter alia, instructions for a system-wide response for a mass disaster, command and control during said disaster, and coordination between the organizations and bodies operating during the disaster. [↑](#footnote-ref-123)
124. According to government resolution 1577, the Defense Minister is responsible for handling “all emergencies, including a special situation on the home front and emergencies caused by natural disasters”. But the resolution does not pertain to a “mass disaster”, which the Minister of Public Security is responsible for handling. To the best of our understanding, the Civil Sphere’s Readiness for States of Emergency in the Economy bill, 5776-2016, attempts to address this gap. [↑](#footnote-ref-124)
125. The Committee is comprised of: Defense Minister - Chairperson of the Committee; The Director Generals of all the government ministries; the Managing Director of the Jewish Agency; the Chairperson of the Regional Councils Organization; the Director General of the Local Government Center; a Headquarters Representative (senior ranking); a Representative of the Israel Police (senior ranking). [↑](#footnote-ref-125)
126. Transferred from the Ministry of Economy in government resolution dated July 31, 2016. [↑](#footnote-ref-126)
127. To the best of our understanding, the Civil Sphere’s Readiness for States of Emergency in the Economy bill, 5776-2016 attempts to address this issue. [↑](#footnote-ref-127)
128. It seems that the Civil Sphere’s Readiness for Emergencies in the Economy bill attempts to address this issue. According to the bill, a mass disaster prompts an emergency in the economy. [↑](#footnote-ref-128)
129. A “mass disaster” according to the Police Ordinance differs from the definition of an “emergency” that grants power to the Emergency Economy array. The Minister of Public Security (Minister of Police) can declare a mass disaster according to the Police Ordinance. A “mass disaster” is defined as “an event that causes serious harm to public safety, security of person or property that relates to a large public or a large area, or an event that may cause such harm, including due to environmental damage, environmental hazard, hazardous materials event, chemical or biological event, radiation event, accident, or terrorist activity”. “Emergencies” that enable the government to activate the Emergency Economy layout are: natural disasters (such as earthquakes, floods, plagues); disasters stemming from the emission of hazardous materials (chemical, biological, nuclear), as well as terrorist events not during wartime - which prevent or harm the normal function of the vital economy, or there is a real danger for said prevention or harm. [↑](#footnote-ref-129)
130. The State Comptroller Report, the National Preparedness to Handle Home Front Emergencies, September 2015, pg. 43 [↑](#footnote-ref-130)
131. According to the Police Ordinance, a rescue agency is “a body whose help is required during a mass disaster and is one of the following: (1) Magen David Adom in Israel (...); (2) Israel Fire and Rescue Services; (3) Local authority (...), or Association of Cities; (5) A body, including an organization, institution, enterprise or unit, or part of said body, that gives a service to the public, which the Minister declared in an announcement in the records, with the consent of the Minister that was deemed responsible for the same body, if determined said Minister, that it is a rescue agency. Moreover, according to Sec. 90K(C) of the Police Ordinance, when the IDF and the Civil Protection Service assist the Police - they are treated as rescue agencies. (No records were found on other rescue agencies. No publication was found that “rescue unification” is a rescue agency or auxiliary organization). [↑](#footnote-ref-131)
132. Auxiliary organizations that were declared as part of the Civil Defense Law: Magen David Adom, every HMO and associated clinic, women’s organizations (WIZO, Working Women’s Council, and more), ZAKA, and the Hazardous Materials Response Team at the Ministry of Environmental Protection. [↑](#footnote-ref-132)
133. See later - Magen David Adom and the Fire and Rescue Service are both auxiliary organizations and rescue agencies and therefore there may be a situation where they are subject to double authority - the Police and the Civil Defense Authority. [↑](#footnote-ref-133)
134. The State Comptroller Report, the National Preparedness to Handle Home Front Emergencies, September 2015 [↑](#footnote-ref-134)
135. Except in the case of the regional divisions area, which are in areas that have been excluded from the Police’s power to begin with according to Sec. 90D (F) and Sec. 90B (B)(2) of the Police Ordinance. [↑](#footnote-ref-135)
136. Flora Koch Davidovich, M.M.M. 2011, Preparedness of the Health Array to Emergencies, pg. 16. [↑](#footnote-ref-136)
137. Another gap that is not relevant to earthquakes but is important for a special situation on the home front and we thought it was worth mentioning:

     Declaring a special situation in the home front according to Sec. 9D in the Civil Defense Law authorizes the IDF Chief of Staff, the regional commanders, the GOC Home Front Command, and regional home front commanders to instruct civilians on how to behave in order to do the maximum to save lives. However, declaring a special situation on the home front does not deprive the Police of its existing authority during routine, as responsible for internal security. Hence, there is a concern of a contradiction between the Defense Minister and the Chief of Police - who gives the orders. [↑](#footnote-ref-137)
138. Also see the Authorities for Protecting Public Safety Law, 5765-2005 according to which the authority/power pertains to violent actions of a single person (powers to delay, deny entry, etc.). [↑](#footnote-ref-138)
139. The National Insurance Institute Law only recognizes volunteers acting according to referral of a public body that is authorized to direct volunteers. A list of these bodies can be found in Sec. 287 in the National Insurance Institute Law [combined version], 5755-1995. However, note that according to government resolution 1623, the National Insurance Institute is supposed to handle the issue of recognizing volunteers after the event. [↑](#footnote-ref-139)
140. Negev, Segal, Feitelson, 2014. [↑](#footnote-ref-140)
141. Negev, Segal, Feitelson, 2014. [↑](#footnote-ref-141)
142. http://web.nli.org.il/sites/NLI/Hebrew/library/Blogs/Pages/Blog-Earthquake-1927.aspx [↑](#footnote-ref-142)