



מרכז הידע והמחקר הלאומי בתחום ההיערכות למצבי חירום  
National Knowledge and Research Center for Emergency Readiness

# NATIONAL KNOWLEDGE AND RESEARCH CENTER FOR EMERGENCY READINESS

Expression of Interest in  
Horizon Europe 2021-2022

## About the Center

The National Knowledge and Research Center for Emergency Readiness with **90 researchers** was established in January 2018 by the Israel Ministry of Science and Technology and the National Emergency Management Authority (NEMA) of the Ministry of Defense. Core institutions involved are University of Haifa, the Technion and the Hebrew University, together with researchers from Rafael Advanced Defense Systems, Rambam Hospital, Tel Hai College, and the Israel School for Humanitarian Aid; with partners from the municipality of Haifa and NATAN International Humanitarian Aid.

The Center's mission is to serve as the **state-of-the-art scientific think-tank for policy framers, decision-makers, academic community and**

**practitioners from all sectors.**

The two intertwined functions of the Center are **1)** Independently generated, cutting edge and multi-disciplinary research, and **2)** solicited real-time response to requests by NEMA, government ministries, elected officials, NGOs and other stakeholders.

Activities include mentoring graduate and post-graduate researchers, conducting workshops, and interdisciplinary conferences, at the national and international levels, allowing for the exchange of data, comparative analysis, and dissemination of knowledge.

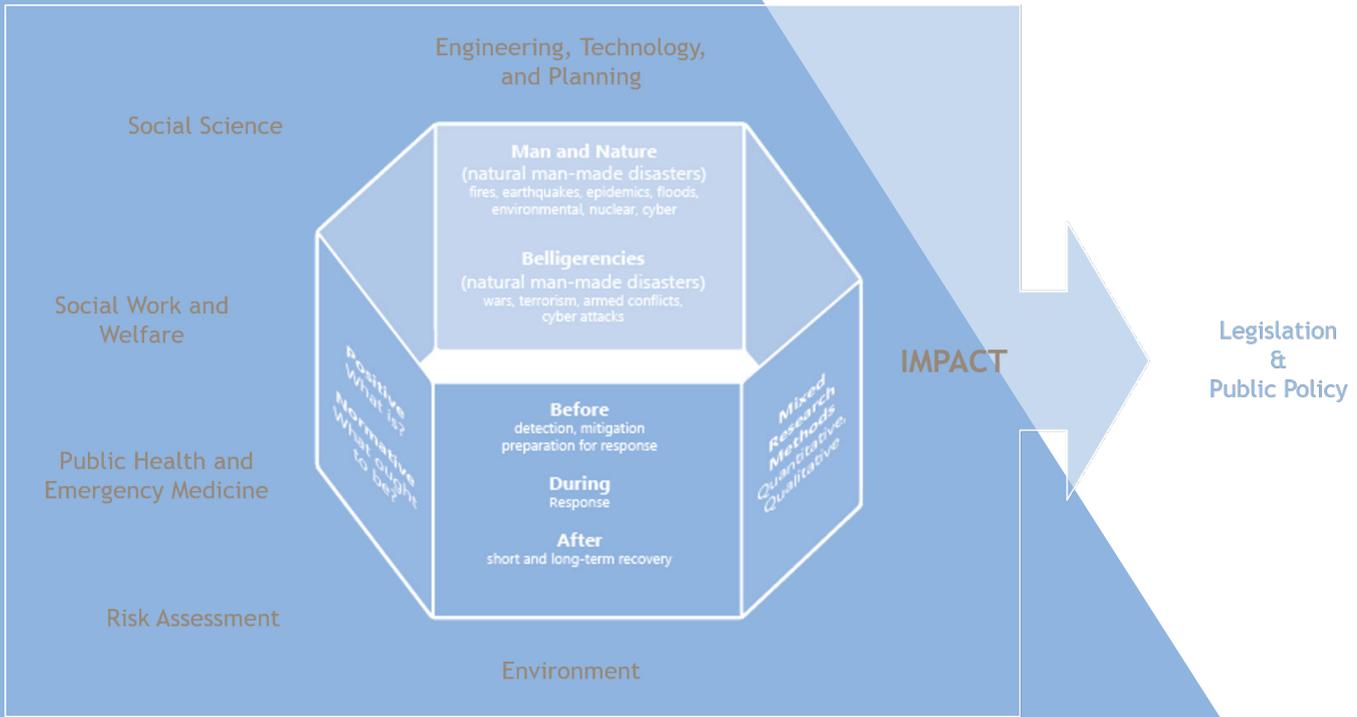
The Center seeks to foster knowledge sharing and international research collaborations, with an aim of developing a cadre of comparative studies and evaluations of recommended practices.

## Head of the Center

Since the establishment the center in 2018, it is headed by **Prof. Deborah F. Shmueli** who is a Full Professor in the Department of Geography and Environmental Studies at the University of Haifa, and a co-Principal Investigator in the Minerva Center for the Rule of Law under Extreme Conditions. In addition to this and other managerial roles, Deborah is currently the Academic Head of the graduate program in Emergency and Disaster Management. She is a planner specializing in environmental and public policy issues with **a strong foci on conflict management, community and institutional capacity building and resilience, public engagement, and policy aspects of emergency management.**



Prof. Deborah F. Shmueli



## Projects

Coping with the Corona Crisis in the Mid, Short, Medium and Long Term.

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Cascading Effects in Disaster Risk Science: Multi-Disciplinary Perspectives.

[Read More](#)

Robust preparedness against surprises in extreme events: Multi-site fires and earthquakes.

[Read More](#)

Natural Hazards and Moral Hazards: Understanding the Insurance Coverage Limit.

[Read More](#)

Insurance, Thresholds, and Mechanisms for Post Disaster Resilience.

[Read More](#)

Managing the Nation and its Citizens During Times of Crisis: An assessment of national resilience, public trust, and the performance of government and bureaucratic institutions during the COVID-19 crisis and during non-crisis times. [Read More](#)

Developing local resilience and planning urban spaces in times of emergency: A multi-disciplinary study comparing preparedness for extreme weather conditions to preparedness for conflict.

[Read More](#)

Using Twitter for near real-time alerts and damage analysis of natural hazards in Israel and its close surrounding. [Read More](#)

# Research Groups



Prof. Shai Linn



Prof. Anat Gesser-Edelsburg

University of Haifa



Prof. Eli Salzberger, University of Haifa

## Public Health and Emergency Medicine

Headed by Prof. Shai Linn and Prof. Anat Gesser-Edelsburg the group's focus is centered on information and knowledge related to **response in medical emergencies** such as natural disasters, accidents with mass casualties, cyber threats to public health, and terrorist and wartime civilian injuries.

[Read more](#)

## Law

Headed by Prof. Eli Salzberger, the group has two main research functions:

- **Research** about emergency institutional and regulatory structures and collective decision-making ;
- **Translating the findings** and recommendations of the other groups into proposed legal measures.



Prof. Michal Shamai, University of Haifa

## Welfare and Social Work

Headed by Prof. Michal Shamai the group is focusing on **implications of natural and human-made disasters** for people's quality of life and welfare; types of help needed during and after natural and human-made disasters; preparations for natural and human-made disasters; and developing accurate social welfare policy to be implemented during and after natural and human-made disasters.

[Read more](#)



Prof. Eran Feitelson, Hebrew University

## Public Policy

Headed by Prof Eran Feitelson of the Hebrew University, the group has two foci:

- **Research** relating to policy implications and impacts of emergencies;
- **Translating the findings** and results of the other groups into policy recommendations.

[Read more](#)

## Research Groups (continued)



Prof. Eran Vigoda-Gadot, University of Haifa

### Social Sciences

Headed by Prof. Eran Vigoda-Gadot this group is an interdisciplinary collection of researchers which includes **human, political and physical geography** (geomorphology and fluvial geomorphology, geology, geophysics, climatology) **communications**; political science and international relations (including **national security**), **psychology** and **economics at the interface of emergency management**.

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Prof. Eran Feitelson, Hebrew University

### Environment

Headed by Prof. Eran Feitelson, this group focuses primarily on **natural disasters and their impact on humans**, as well as actions by humans that affect their vulnerability to natural disasters.

[Read more](#)



Prof. Pnina Plaut, Technion

### Engineering, Technology and Planning

Two main topics are addressed by this group: **(1) infrastructure management** in disaster and emergency events including construction, water and transportation systems; and **(2) investigating factors affecting urban/community resilience** and developing indices for urban resilience.

[Read more](#)



Prof. Yale Herer, Technion

### Risk Assessment and Management

This group focuses on **issues of reliability and resilience**. The group performs **action-oriented research targeted at municipalities and governmental entities** and contributes to their understanding of risk evaluation, challenging essential huge data, and planning recovery and reconstruction.

[Read more](#)

## Topics of Interest in Horizon Europe

**HORIZON-CL3-DRS-2021-01-01** Improved understanding of risk exposure and its public awareness in areas exposed to multi-hazards.

**Our contribution.** • Environmental and Risk Management knowledge on understanding and interpreting cascading nature of disasters • Risk and resilience assessment • Recommendations on strategies and methodologies for decision-making • Translation of the knowledge into policies • Multi Stakeholder engagement and dialogue for sharing and building-up knowledge and affecting decision-making • Translation of the knowledge into policies.

**HORIZON-CL3-DRS-2021-01-02** Enhanced citizen preparedness in the event of a disaster or crisis-related emergency

**Our contribution.** • Consolidating inclusive and adaptive ecosystem for effective functioning of “spontaneous volunteers” • Building conceptual and evidence-based models for inter-organizational cooperation • Mapping the challenges and opportunities related to fostering increased risk awareness of the general population and community mobilization aimed to increase societal resilience. • Developing culturally-sensitive and nuanced approaches. • Developing effective tools for multi-stakeholder communication and inclusive engagement. • Facilitate an inclusive regional involvement of tri-sector participation of diverse (Jewish-Arab, religious-secular) communities, conducting an assessment of needs and a process-design for a consensus-building process and facilitating ongoing forums in which best practices and guidelines exploiting local resources (knowledge, networks, tools) to be developed with practitioners and local decision-makers. • Build capacity by developing protocols, development of effective means for communication improving inter-organizational collaborative processes and increased awareness & participation of citizens, communities, local authorities, NGOs, business companies and practitioners – thus constructing shared responsibility and joint action as a coalition of diverse groups against a common threat. • Involve and integrate efforts among citizens, training and educational institutions, local decision-makers, employees in public administrations and in business companies, and practitioners. With the value of deliberation, inclusion of public participation processes and empowerment of citizen and stakeholders to engage in bottom-up participatory and learning processes. • Sustainability: build and ongoing ‘culture of disaster preparedness’ for citizens, communities, public administrations, business companies, practitioners on both the local (communal) and regional (inter-communal of neighboring municipalities) levels, with the aim to effect national policies as well.

**HORIZON-CL3-DRS-2021-01-03** Integrated Disaster Risk Reduction for extreme climate events: from early warning systems to long term adaptation and resilience building

**Our contribution.** • Quantitative and qualitative vulnerability assessments • Multi stakeholder engagement • Identifying local knowledge, practices and adaptive strategies in multi-ethnic and societies • Advanced impact assessments based on best available knowledge, accurate exposure data and adaptive strategies. • Risk and resilience studies and outputs including solutions assessment. • Design of preparedness actions linking together multilevel interventions.

**HORIZON-CL3-DRS-2021-01-06** Innovative concepts to enhance cooperation and use of available knowledge across disaster and crisis-management-related disciplines and administrative levels

**Our contribution.** • Developing a comprehensive applied model for knowledge-sharing, multi-stakeholder communication and inclusive engagement. • Conducting empirical test, comprehensive evaluation and consolidating policy-driven recommendation • Collaboration processes and tools.

## Topics of Interest in Horizon Europe (continued)

**HORIZON-CL3-DRS-2021-01-07** Developing a European partnership to coordinate R&I efforts on risk management of climate-related disasters

**Our contribution.** • Quantitative and qualitative vulnerability assessments • Multi stakeholder engagement • Identifying local knowledge, practices and adaptive strategies in multi-ethnic and societies • Advanced impact assessments based on best available knowledge, accurate exposure data and adaptive strategies. • Risk and resilience studies and outputs including solutions assessment. • Design of preparedness actions linking together multilevel interventions.

**HORIZON-CL3-DRS-2022-01-01** Better understanding of citizens' behavioural and psychological reactions in the event of a disaster or crisis situation

**Our contribution.** • Consolidating forward-looking, multi-dimensional and inclusive preparedness plan for the most vulnerable societal groups in the face of crisis and emergency situations. • Qualitative and quantitative analyses on the behaviour of diverse society groups and ethical perspectives on what defines disasters and how they are responded to. • Analyses of human behavior • Analyses of the nature and scope of mental health issues and their implications for response and recovery.

**HORIZON-CL3-DRS-2022-01-02:** Enhanced preparedness and management of High- Impact Low-Probability or unexpected events

**Our contribution.** • Identification of "success stories" reflecting effective, adaptive, flexible and forward-looking functioning in the face of HILP (Covid- 19, as an example) as a basis for developing a comprehensive applied preparedness model in the face of HILP



## Relevant Literature

- Felsenstein, D., Shmueli, D, and D. Thomas (Eds), (2020). Special Issue: Cascading Effects in Disaster Risk Science: Multi-Disciplinary Perspectives, [International Journal of Disaster Risk Reduction](#).
- Shmueli, D., Ozawa, C. and S. Kaufman, (2021). "Collaborative Planning Principles for Disaster Preparedness", [International Journal of Disaster Risk Reduction](#), Vol. 52, <https://doi.org/10.1016/j.ijdrr.2020.101981>
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- Abed Elhadi Shahbari, N., Gesser-Edelsburg, A., Mesch, G. S. (2019). Case of paradoxical cultural sensitivity: Mixed method study of web-based health informational materials about the Human Papillomavirus vaccine in Israel. [Journal of Medical Internet Research](#), Vol. 21(5): e13373.
- Paz, S., Majeed, A., Christophides, G. K., 2020. Better data are crucial for mitigating threats in the Middle East (Opinion). [The BMJ – British Medical Journal](#), <https://blogs.bmj.com/bmj/2020/11/13/highlights-of-climate-change-and-infectious-disease-in-the-eastern-mediterranean-and-the-middle-east/>
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