INSS Insight

National Plan for Long-Term Recovery following a Severe Earthquake: An Important Step on the Long Road to National Preparedness

Ariel Heimann and Meir Elran | No. 1646 | September 28, 2022

Although severe earthquakes in Israel are bound to occur, national preparedness for these events is deficient. Against this backdrop, the government's decision in May 2022 to formulate operational plans for long-term physical, social, and economic recovery following a severe earthquake is of particular importance. This decision is commendable as an essential step on the long road to overall preparedness for mass disasters that cause unprecedented damage. It is crucial that the government implement the decision even at a time of ongoing political instability. In tandem, meticulous, multifaceted pre-earthquake preparation plans should join the recovery plans. Such plans will mitigate the staggering loss of life and damage to property and to critical national infrastructure, and will facilitate the recovery measures after the disaster, which are generally highly challenging, expensive, and prolonged.

The issue of earthquake preparedness has been on Israel's agenda since the 1980s, when an earthquake building code was first instituted. In the strong earthquake that hit Turkey in 1999, the issue gained momentum, and the Israeli government decided to establish a steering committee, headed by a group of government ministers, to handle the country's preparedness for this severe, inevitable event. Since then, the issue has been marginalized by the government and attracts little public interest, and progress has been sluggish. From time to time the issue appears on the agenda, mainly in the media, when a destructive earthquake strikes another country, or a minor earthquake is felt here.

On May 29, 2022, government decision no. 1523 was adopted (without media coverage) "to formulate operational plans for long-term physical, social, and economic recovery following an earthquake." As part of the decision, the director general of the Prime Minister's Office, in cooperation with NEMA (the National Emergency Management Authority) and the inter-ministerial steering committee on earthquakes, was given 18 months to formulate a plan for national preparedness for long-term earthquake recovery. The inter-ministerial committee, which met recently for the first time, decided to establish five inter-ministerial subcommittees to address the following areas: urban reconstruction; rehabilitation of individuals and communities; financial and real estate economic recovery; environmental and national infrastructure; and defense (to be handled by the Ministry of Defense). Another subcommittee will address the organizational infrastructure.

This decision is precedent-setting in that it enlists all the relevant government ministries in a complete process of preparing the State of Israel for long-term recovery following a severe earthquake. The importance of this issue is reflected in data presented by a UN report, which states that in 2000-2019 only 8 percent of all the world’s disasters were earthquakes, but 58 percent of the deaths in these disasters were caused by earthquakes.

National earthquake preparedness is generally divided into four stages: 1. The preliminary stage, which aims to mitigate the expected loss of life and damage to property and the state's strategic assets. This is the current stage, before a major earthquake occurs. 2. The immediate response stage, i.e., the conduct of the population and the state from when the earthquake occurs to 7-10 days afterwards. 3. The recovery processes in the two-to-three months after the earthquake. 4. Medium and long-term reconstruction, which usually takes years.

The plan prepared by the director general of the Prime Minister's Office deals with the fourth stage. Based on the experience of foreign countries,

clearly the reconstruction stage is the longest, most expensive, most exhausting, and most challenging stage. For example, Haiti, which experienced a very strong earthquake 12 years ago with enormous loss of life and property damage, has yet to recover fully. It also took New Zealand, a modern country that is socially and economically robust, several years to recover from the earthquake that occurred in Christchurch in 2011.

In order to conduct an orderly process of long-term recovery planning, it is necessary to relate to a likely and reasonable reference scenario. According to the established Israeli reference scenario, in an "average strong earthquake" more than 7,000 people will be killed and hundreds of thousands left homeless. The scenario anticipates that 29,000 buildings will be heavily damaged, and about 290,000 buildings will be lightly or moderately damaged. The earthquake could lead to about 500,000 displaced people immediately after the earthquake, a number that is expected to decrease to about 170,000 once people are able to return to their homes with the approval of engineers. It is estimated that the cost of the damage will reach around NIS 150 billion ($45 billion). This estimate does not include the damage to national infrastructure such as the electrical grid, fuel, natural gas, water, sewage and communication systems, public buildings (including hospitals and schools), transportation systems (ground, air, and sea), and various other critical systems. Some of these systems would not operate for days, others for up to many months. The damage, including secondary (such as fires, sanitation, and more) would be significant and repairs could take years.

The difficulty in the recovery processes in Israel is expected to be graver relative to other countries because it is a small, densely populated country. A severe earthquake striking the center of the country could affect a large portion of the population and buildings. In contrast, larger countries are better able to mobilize internal resources and aid regions struck by a severely damaging earthquake. Israel is expected to need extensive international aid is such circumstances.

The establishment of the inter-ministerial committee is a commendable development, constituting an important step on the long road toward proper national preparedness for mass disasters. Despite the political instability that impairs the necessary continuity of long-term planning processes, the committee will hopefully complete its work and persuade the government to allocate the necessary resources for implementing the plan.

However, the most effective way to mitigate the need for expensive long-term recovery is to reduce the damage from the earthquake itself through proper advance preparation. New construction must conform to the earthquake building code, and old buildings, including public buildings such as hospitals and schools, must be upgraded to that same standard. Prior to the earthquake, the population must be prepared over time through the dissemination of awareness and knowledge, and households must be prepared for the disaster, with food, enhanced means of communication, and more. The public must also have the knowledge and tools to cope with the results of an earthquake in the first few hours and days, during the critical time when the first responders are struggling to provide aid or support. During that time, as per lessons learned from similar events in other countries, the citizens will have to bear most of the burden of the initial response.

The bottom line: the government's decision on planning long-term reconstruction is commendable, representing a critical step on the long road to earthquake recovery. At the same time, the government must also invest the necessary resources for pre-earthquake preparations to reduce the earthquake's damage, and in turn, the expenses and timeline of long-term reconstruction. Investment in strengthening buildings and in educating the public will save a lot of money and time, making it easier for the country to recover from a severe earthquake. There is little logic in preparing plans for long-term rehabilitation without designing a parallel plan for pre-earthquake preparation. Such a plan has already been discussed within the government, partly approved and budgeted, but only a very small portion has been implemented. Such a plan would cost several

billion shekels and would result in strengthening all the buildings that must be reinforced, some of which are already on the verge of collapse – even without an earthquake.

Editors of the series: Anat Kurtz, Eldad Shavit and Judith Rosen