Disaster Management Policies in Turkey

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Disasters from a National Perspective

Disasters are extraordinary events that often destroy property and cause deaths and physical injuries. Natural disasters can be categorized as sudden hazard and slow hazard events. Earthquakes, tropical storms, floods, tsunamis, landslides, and volcanic eruptions can be classified as sudden hazards, whereas droughts and deforestation are considered slow hazards.

National disaster policies must be in place to minimize losses to communities. A national program must rely on cooperation between state and local governments and should include:

- Recognized disaster mitigation criteria on a national scale
- Disclosure of vulnerability data
- Legal regulations for land use and building standards
- Insurance system for disaster risk transfer.

To the last point: in countries where state aid programs are attractive, the public tends not to opt for private insurance. Therefore, the government should take measures to ensure that insurance rates are based on the disaster risks of a specific area.

Given the size of Turkey and the fact that the main hazard type is earthquake, most disasters are localized in certain provinces and do not affect the entire country.

Taking a historic perspective, there were nearly 65 major earthquakes from 1903 to 1998. Altogether, these disasters caused 75,000 deaths, 150,000 injuries, and destruction of 450,000 dwellings and other structures. Viewed within the context of the loss of life and injuries, earthquakes accounted for about 90 percent of the losses. Measured in terms of direct economic losses, natural disasters have, on the average, accounted for one percent of gross national product (GNP), with earthquakes accounting for 0.8 percent of this.

The majority of the population live in earthquake-prone areas, where major economic investments and significant vital infrastructure and related construction take place.

Economic Impacts of Disasters

Damage that occurs during and after a major disaster can be categorized under three headings:

Direct Damage

Damage incurred during a disaster includes the total or partial destruction of buildings, infrastructure, dams, transportation facilities, machinery and equipment, raw materials, damage to the soils and farmlands, and the destruction of crops. Thus direct damage is the physical, material destruction that occurs as a result of a disaster.

Indirect Losses

Indirect losses occur immediately after a disaster due to interruptions in "normal" business and may last from several days to several years.

Secondary Effects

The effects of a major disaster on a country's overall economy constitute secondary effects. These include changes in the overall and sectoral gross domestic product, the trade balance and the balance of payments, the amount of debt and monetary reserves, the robustness of public finance, gross capital formation, the inflation rate, the unemployment rate, and changes in the level of household income.

The Disaster Management Model in Turkey

In Turkey, the disaster management system is highly centralized and disaster management is essentially the responsibility of the central government - not local authorities. The governor of a province is a civil servant, employed by the Ministry of the Interior. The governor is appointed by the government, not elected locally. The governor does not have an operational role but coordinates and mobilizes others. He can also demand assistance from other provinces which have not been affected by a disaster. Funding for relief comes directly from the central government.

There is no single national coordinating agency for disaster management in Turkey, but there is a blueprint represented by a disaster management law and its statutes. Post-disaster rescue and relief operations are the direct responsibility of the provinces and districts with assistance provided by the central government and externally. The central government is responsible for

reconstruction and rehabilitation. Locally elected administrations are responsible for mitigation measures such as the implementation of earthquake-resistant building codes for construction within their jurisdiction. Each ministry to which reference is made in the parent law has a unit responsible for disaster management rather than there being one national coordinating agency with proper legal mandate and power. The Turkish Red Crescent Society (TRCS), the General Directorate of Civil Defence (GDCD) (part of the Ministry of Interior), and the armed forces also play a major role in rescue and relief operations.

The General Directorate of Disaster Affairs (GDDA) of the Ministry of Public Works and Settlement (MPWS/GDDA) has assumed the role of establishing appropriate disaster policies, revising them continuously, and training and educating personnel involved in disaster management. The Ministry of Public Works and Settlement has always been the ministry most heavily involved in disaster preparedness, mitigation, and management, as the major disasters in Turkey result in damage to buildings and infrastructure caused by earthquakes. In spite of this role, MPWS/GDDA is not the only agency involved in disaster management. Other agencies and institutions involved are TRCS, GDCD, The State Planning Organization (SPO), and the Ministry of Foreign Affairs (MFA).

Strengths and Weaknesses of the Disaster Management in Turkey

The strengths and weaknesses of the disaster management system in Turkey are listed below:

Strengths

Broad Base: The law has a broad base in addressing all forms of natural disasters. Principles and criteria for allocating state funds to affected citizens have been clearly spelled out.

Financial Measures: A novel feature of Law No. 7269-1051 was the establishment of the Disaster Fund. Relatively free from the customary restraints associated with expenditures made from the national budget, the fund is intended to provide the required financial support to the agencies involved in disaster relief to fulfill their mandates, with the quick release of funds ensured. Two more funds have been established: The Earthquake Fund and The Civil Defence Fund.

Revision of Legal Documents: Several regulations and other instruments cover the planning process and activities related to the disaster response, recovery, reconstruction, mitigation and preparedness phases of regional and local disaster management. Existing legal documents are continuously revised and assessed as their deficiencies become apparent or as

technological advances are made. For example, the earthquake zone map used in conjunction with the building code was revised in 1972; work was finalized in reformulating this zoning map in the form of a probabilistic hazard map in 1995. Design of the earthquake-resistance building code was finalized in 1996.

Political Stability: The disaster management system has a reappointment system relatively immune from political changes since provincial governors are civil employees, not political figures. Governors and other members of provincial committees are not necessarily subject to reappointment following a change in government.

Training of Government Officials in Disaster-related Matters: The General Directorate of Disaster Affairs, and to a lesser extent AFEM, the European Disaster Training Center, also embodied within the Ministry of Public Works and Settlement, organizes training courses for officials involved in disaster management. Topics include preparedness, vulnerability assessment, code enforcement, emergency rescue methods, and land use policies.

Weaknesses

Hierarchical: The hierarchical, top-down nature of the disaster management system tends to discourage local initiative and undermines the role of local authorities that will have to deal with affected people.

Linkages between the Central and the Provincial Governments: Experience to date has shown a lack of adequate coordination between central authorities and provincial administrations during the critical period immediately following a natural disaster. The first reason for this is that provincial plans assume that local authority employees, who will assemble and play out their roles in the rescue and relief efforts, are somehow themselves immune from the disaster. As was illustrated in the Erzincan Earthquake in 1992, members of the local committees and their family members can be injured and incapacitated, lose personal possessions and homes, and may not be in a state of mind to help others. Second, province-level rescue and relief plans all follow the same guiding principles in their basic structure because they are based on the same template. Third, ministries respond to the priorities declared by the Ministry of Public Works (MPWS) in varying degrees, which may not be in accord with a systems approach.

Local Officials: A common problem is that in most cases, provincial officials charged with disaster management are unfamiliar with on-the-ground realities since they are not from the provinces in which they work.

The rapid turnover of government officials in some provinces may render rescue plans obsolete.

Financial Limitations in Disaster Mitigation: Passing laws and regulations and establishing government agencies for natural disaster reduction are not sufficient to bring about the desired results. These agencies must be accorded the necessary financial means for fulfilling their mandates. Better utilizing existing funds and facilitating expenditure would be a positive step towards improvement.

Land Use: A major deficiency which needs to be addressed is the lack of accurate micro-zoning maps. The adequate assessment of natural hazard risk at the local level would contribute to a more rational land use planning by local authorities who tend to overlook this component when making land-use decisions within their jurisdiction.

Construction: Another major deficiency relates to the supervision of building construction and legal responsibility for substandard building practices. Building code requirements cannot be enforced in rural areas that are outside municipal boundaries. The degree to which enforcement can be ensured even in urban centers has been the subject of much debate recently.

Paternalism: This is the most pervasive characteristic of the system and certainly the most difficult to correct. While the disaster management system in Turkey requires the integrated cooperation of a large number of ministries and other agencies, it does not contain instruments or mechanisms to force the active participation of the communities at risk. It is highly paternalistic and gives assurance to the people that the all-powerful state will eventually replace all lost property, rebuild each and every shop, and rehabilitate affected economic investments through low-interest loans, debt annulments, and free credit. Economic constraints frequently make it hard to realize all of these expectations, but the impression left on the affected communities is that should a natural disaster occur, the government will immediately step in to take care of their needs and rehabilitate their environment.

The Marmara Earthquake

Economic Impacts of the Disaster

On August 17 and November 12, 1999, two earthquakes struck the Marmara and Bolu regions of Turkey, causing significant material damage and a high number of casualties. Areas of peak damage include the seven provinces of Kocaeli (Izmit, Gölcük), Sakarya (Adapazari), Yalova, Bolu, Istanbul, Bursa, and Eskisehir. The area affected was the country's industrial heartland, the immediate and adjacent provinces (including Istanbul)

accounting for around one-third of Turkey's overall output. Over 18,000 lives were lost, an estimated 200,000 people became homeless in the region, and Turkey's industrial heartland was extensively damaged. Large portions of the area were devastated, with around 109,000 housing units and business premises completely destroyed with another 249,000 damaged to varying degrees. Numerous schools, health facilities, roads, bridges, water pipes, phone lines, and gas pipelines were severely damaged. Up to 600,000 people were forced to leave their homes, perhaps half of whom became homeless and had to stay in tents, and many of the survivors, especially children, were left deeply traumatized.

The region affected by the earthquake is both geographically extensive and economically dynamic. It forms the industrial heartland of Turkey. The area's major industries include automobile and other manufacturing, petrochemicals, repair of motor (and railway) vehicles, basic metals, production and weaving of synthetic fibers and yarns, paint and lacquer production, and tourism. The four provinces most severely affected (Kocaeli, Sakarya, Bolu, and Yalova) contribute over seven percent of the country's GNP and 14 percent of the industrial value added. The next ring of affected provinces (Bursa, Eskisehir, and Istanbul) suffered indirectly due to their close economic linkages with the main industrial area since industries and small-scale industries supply services and material inputs to each other's production processes. Taking all seven cities together, this broad earthquake region accounts for 35 percent of national GNP and almost half of the nation's industrial output.

Immediately after the earthquake in the Marmara Region, the government provided emergency assistance to the residents of damaged dwellings in the form of tents, temporary residences, and rubble clean up. During recovery and rehabilitation, the government provided funds to help homeowners purchase new residences. Temporary residences consisted of those constructed by the Ministry of Public Works and Settlement, the General Directorate of Disaster Affairs and those constructed from donations of foreign agencies and others. Supplying temporary residences required funding to cover the rental fee of land, the cost of infrastructure provision and actual construction costs. The provision of temporary residences following the Kocaeli Earthquake has revealed that the cost of each dwelling was US$1,928 and the cost of reconstruction was about US$475 per building.

The permanent residences are newly built, and the owners of severely and moderately damaged residences (about 57 percent) obtained permanent residences with long-term low-interest loans. Following the Marmara

Earthquake, the government built permanent residences at a cost of US$42,000 (including the cost of utility connections and other infrastructure). These residencies were sold for US$12,000. To cover the purchase costs, victims received low interest loans with a two-year grace period and 10 year repayment period. In an economy with an annual inflation rate of 65 percent, however, the funds become a donation rather than a loan. The cost to the government can, therefore, be roughly calculated at about US$ 30,000 per dwelling.

Damage is estimated at US$1,100 million to US$3,000 million for the housing sector; US$70 million for municipal infrastructure; US$78 million for roads, bridges, and highways; US$38 million for telecommunications; US$60 million for power-supply; and US$1,100 million to US$2,600 million for the business sector. Small- and medium-scale enterprises were heavily damaged. Many of these had supplied inputs to large companies in the area.

For enterprises affected by the earthquake, the authorities have announced a tax-deferral scheme and a subsidized credit program through the three main state banks. The tax-deferral scheme covers the businesses and individuals affected by the earthquake.

The program, prepared by the government, introduces measures to reduce potential losses from natural disasters by: improving the emergency response system; increasing the earthquake-resistance of new buildings; adopting and enforcing land-use plans and building codes; and setting up a disaster insurance scheme. The program also increases public awareness of earthquakes and preparedness measures by helping the recovery of businesses and social sectors through a series of support programs for small businesses. The support programs increase the quantity and the quality of trauma-related counseling for affected populations by implementing expeditiously the construction and rehabilitation of infrastructure in affected areas, using methods to increase the confidence of the local population in the process, and improving the quality of residential buildings.

The rationale for the geographic focus of the program is based on the strategic choice to assist the most extensively damaged regions of Turkey so as to restore the essential infrastructure and reduce vulnerability to earthquakes nationwide.