# GLOBAL LESSONS LEARNED FOR URBAN RESILIENCE AND REGENERATION PROJECTS

## INFORMING TURKEY'S URBAN TRANSFORMATION PROCESS

GFDRR
Global Facility for Disaster Reduction and Recovery

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# INTRODUCTION

In recent years, global losses associated with natural events have increased and are expected to rise. In 2017, 335 natural disasters affected over 95.6 million people, killing an additional 9,697 and costing a total of $335 billion. By 2030, 325 million extremely poor people are expected to be living in the 49 countries that are most prone to hazards; climate change and natural disasters will cost cities $314 billion each year; and 1.5bn people will be living in cities exposed to flooding and rising sea levels.[1]

In parallel, the world is rapidly urbanizing. Approximately 1.4 million people per week move to urban areas and cities, which generate more than 80 percent of global GDP. Urban areas concentrate disaster risk due to the aggregation of people, infrastructure and assets, and this is exacerbated by unmanaged urban expansion.[2] Rapid urban growth creates socioeconomic vulnerabilities and puts pressure on cities that find themselves unable to provide basic services in the face of acute shocks, such as floods, or because of chronic stresses, like water scarcity and crime and violence. Decisions about investments in urban infrastructure, buildings and land use taken now will have huge implications for development outcomes in the future and can prove critical in preventing cities from being locked into unsustainable development pathways that will expose them to increasingly intense and frequent climate and disaster-related shocks and stresses.

**1** *ODI, The Geography of Poverty, Disasters and Climate Extremes in 2030, https://urbanresiliencehub.org/facts-and-figures/*

**2** *http://documents.worldbank.org/curated/en/659161468182066104/pdf/709820PUB0EPI0067926B09780821389621.pdf*

## NATURAL DISASTERS IN 2017

**335**
NATURAL DISASTERS

**95.6M**
AFFECTED PEOPLE

**9697**
CASUALITIES

**335BN**
DISASTER COST

## BY 2030

**325M**
PEOPLE WILL BE LIVING IN 49 HAZARD-PRONE COUNTRIES

**314BN**
YEARLY COST FROM CLIMATE CHANGE & NATURAL DISASTERS

**1.5BN**
PEOPLE WILL BE LIVING IN CITIES EXPOSED TO FLOODING & RISING SEA LEVELS

APPROXIMATELY

**1.4M PEOPLE**

MOVE TO URBAN AREAS AND CITIES EACH WEEK

# TURKEY'S URBAN TRANSFORMATION PROCESS

*Photo: Izmir, Turkey - World Bank Photo Archive*

**OVER THE LAST DECADE, TURKEY HAS INITIATED SEVERAL REGULATORY AND INSTITUTIONAL REFORMS TO BETTER MITIGATE AND REDUCE DISASTER RISKS, WITH A FOCUS ON SEISMIC RISK.**

The Squatter (Gecekondu) Law No. 775 (1966) was the first regulatory effort to produce housing for low-income groups in Turkey, and with the Mass Housing Law No. 2985 (1984), they aimed to accelerate the production of social housing. These regulations, which are still in force, demonstrate the importance given to low-income housing production in Turkey. In the 2000s, the legal concept of "urban transformation" emerged; and it started to be mentioned together with "disaster risk". Since 2005, three regulations have informed urban transformation efforts, including the renewal of dilapidated buildings:

1. The 73rd article of the "Municipal Law (2005)" numbered 5393 provides the legal basis for local administrations to carry out urban transformation practices;

2. More precise planning and implementation tools were defined to support the renewal of historical heritage sites, and put under legal provision separately from other urban areas, under the Law No. 5366 on the " the Conservation by Renovation and Use by Renewal of Dilapidated Historical and Cultural Immovable Properties" / "Renewal Act (2005)"; and

3. The "Law on Transformation of Areas Under Disaster Risk" numbered 6306, aimed to increase the resilience of cities against disasters by eliminating the risk in order to ensure the safety of life and property, especially earthquake disasters.

In 2012, the Turkish parliament passed a Law on Urban Transformation (Law on Transformation of Areas Under Disaster Risk, No: 6306), which authorized the public sector's involvement in the urban transformation process in disaster risk prone areas. Under this Law, close to seven million dwellings country-wide are expected to

be included in the urban transformation process. Law 6306 directly codified earthquake-focused urban regeneration, further expanding the powers of redevelopment-focused agencies in areas vulnerable to natural hazards, allowing for the transformation of individual buildings or entire neighborhoods if they are deemed at risk.

Within the scope of the Urban Transformation Law No. 6306, citizens who are eligible for urban transformation in risk areas, such as rent allowance and interest rate subsidy support are supported with grants by central government. In addition, local governments are supported through grants from central government in their planning and preparation of application for urban transformation projects.

**IN 2019, THE GOVERNMENT OF TURKEY DEVELOPED A NEW FRAMEWORK FOR UNDERTAKING AREA-BASED TRANSFORMATION PROJECTS IN CITIES.**

This framework requires preparing a "strategic document" for any urban transformation project and lays out "Principles and Guidelines for the Preparation of Strategic Documents for Urban Transformation (2019)," requiring further analysis of urban conditions, financial management models, urban design guidelines, and implementation schedules for projects in risky areas.

**DESPITE THE DEVELOPMENT OF A LEGAL FRAMEWORK SUPPORTING DISASTER RISK MANAGEMENT-DRIVEN URBAN TRANSFORMATION SINCE THE 2000S, TURKEY FACES SEVERAL ONGOING POLICY AND FINANCE CHALLENGES.**

On the policy front, there are some challenges including coordination across agencies, ad-hoc determinations of transformation zones, gentrification and displacement, housing affordability, community participation and uncertainties around tenant's rights. On the financing front, given the scale of urban transformation in Turkey, a review of existing funding mechanisms is needed.

The current financing models for urban transformation in Turkey include the following: flat-for-land basis model, build-transfer-sell model, and seeking public-private partnership opportunities. Urban transformation projects generate huge economic value; however, this value is currently not being maximized by the government. This value could be used to provide public amenities or social infrastructure and refinance other urban transformation projects across Turkey.

To solve financial bottlenecks in sustaining the urban transformation process over time, the Government needs to develop a mix of financing methods to leverage private funds for enhancing options for urban transformation project. For example, at both central and municipal government levels there is a need to develop and implement proper UT value capture models.

**GIVEN THE CHALLENGES TURKEY FACES IN PLANNING AND IMPLEMENTING SUCH AN AMBITIOUS PROCESS, IT WILL BE IMPORTANT TO CONSIDER THE LESSONS LEARNED FROM OTHER URBAN RESILIENCE AND TRANSFORMATION INITIATIVES.**

This note summarizes the findings of a review of case studies and good practices ranging from high- to middle-income countries and focuses on four main areas:

**A** ASSESSING MULTI-HAZARD RISKS

**B** THE USE OF AN AREA-BASED APPROACH FOR URBAN RESILIENCE AND UPGRADING

**C** ENGAGEMENT WITH THE PRIVATE SECTOR TO EXPAND ACCESS TO FINANCING

**D** THE IMPORTANCE OF ENGAGING SYSTEMATICALLY WITH FAMILIES LIVING IN HAZARD PRONE AREAS TARGETED FOR URBAN TRANSFORMATION PROGRAMS TO BUILD RESILIENCE

# KEY LESSONS LEARNED & RELEVANT CASE STUDIES

*Photo: Bogotá, Columbia - World Bank Photo Archive*

# A ASSESSING MULTI-HAZARD RISKS[3]

1 DEVELOPING A MULTI-HAZARD ASSESSMENT FRAMEWORK IS IMPORTANT TO ASSESS ALL TYPES OF NATURAL HAZARDS RATHER THAN ONLY FOCUSING ON ONE SPECIFIC HAZARD TYPE.

Rarely do countries, communities, or citizens face potential risks from only one hazard, or even from natural hazards alone. Complex environments and social structures are such that multiple or connected risks – from multiple or cascading natural, hazards and anthropogenic hazards – are the norm. Failure to consider the full hazard environment and projected direct and indirect damages and losses can result in maladaptation (for example, heavy concrete structures with a ground-level soft story for parking can protect against cyclone wind, but can be deadly in an earthquake), whereas adopting a multi-hazard risk approach leads to better land-use planning, better response capacity, greater risk awareness, and increased ability to set priorities for mitigation actions. This is especially relevant considering the ongoing coronavirus pandemic that has affected over 188 countries globally, causing economic volatility, increased poverty levels, and food shortages, among others.

The World Bank, in collaboration with the Government of Turkey (through the Ministry of Environment and Urbanization, and Tekirdağ and Kahramanmaras Metropolitan Municipalities), have conducted City Wide Climate and Disaster Risk Assessments to enhance and inform decision making processes to increase the resilience of municipality urban transformation investments. The teams undertook the following actions:

1. assessed the Disaster and Climate Risk Inventories (with gaps and priorities) and resource and financial capacity of each of the municipalities for managing climate and disaster risk;


São Paulo, Brazil - FreeImages.com/Erik Araujo

2. conducted risk assessments using a GIS-based multi-criteria analysis model; and

3. developed recommendations on measures for resilient infrastructure and urban transformation based on the risk findings.

2 MULTI-HAZARD RISK ASSESSMENTS REQUIRE THE AVAILABILITY OF RISK DATA ACROSS ALL HAZARDS THAT CAN BE ACQUIRED, STREAMLINED, AND MANAGED AS PART OF AN INTEGRATED SYSTEM (FOR EXAMPLE GIS MAPPING).

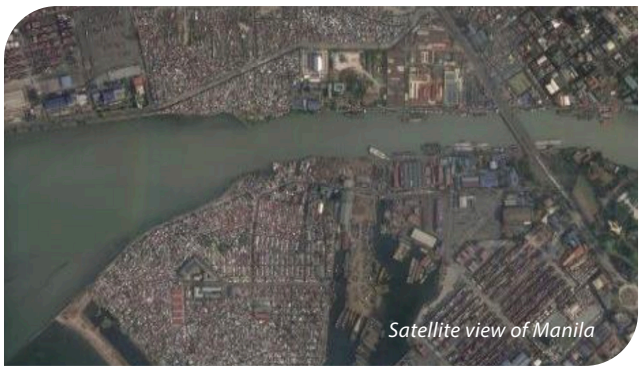
Such systems not only need to be able to be updated and monitored easily, but also made accessible to various entities involved in city management. For example, in São Paulo, Brazil, a multi-risk Urban Risk Assessment (URA) framework, prepared by the World Bank in close consultation with the São Paulo Housing Secretariat and the Green and Environment Secretariat, included an assessment of the hazards, socioeconomic vulnerabilities, and institutional aspects related to climate change and disaster risk management in the city. With a focus on the urban poor, this assessment considered how poor communities are affected by climate change and natural hazards, examined approaches that have been taken to address these challenges, and identified priorities and options

**3** *The Global Facility for Disaster Reduction and Recovery, "Understanding Risk: Emerging Best Practices in Natural Disaster Risk Assessment", 2014, http://bit.ly/understanding_risks* | *The World Bank, "Urban Risk Assessments: Understanding Disaster and Climate Risk in Cities", 2012, http://bit.ly/urban_risks*

for further action in São Paulo. Overall, this assessment highlighted some of the challenges a metropolis like São Paulo is facing regarding present and future climate change and disaster risk scenarios, especially when dealing with an ever-increasing socially vulnerable population.[4] Another example is the case study of Legazpi in the Philippines. A focus was on estimating populations exposed to developing damage scenarios, one for tsunamis and one for earthquakes. However, this case only considered direct damage and losses in its damage/loss scenarios, not secondary hazard effects such as landslides triggered by an earthquake. Without accounting for indirect or secondary hazards, scenarios may not provide the information needed for informed investment decisions.[5]

## 3 LOCAL GOVERNMENT OWNERSHIP IN ANY RISK ASSESSMENT IS CRITICAL, AS IS ITS CAPACITY TO INTEGRATE THE ANALYSIS INTO EXISTING PLANNING PROCESSES.

This includes using the results of a risk assessment to identify 'safe areas' for growth and areas where development should be avoided, to ensure the assessment results influence urban transformation decisions. The World Bank Probabilistic Risk Assessment (CAPRA) Program for Latin America and the Caribbean's[6] experience showed that when local and national institutions participate in and lead risk assessment processes, they are more likely to take ownership of the information and to be aware of its characteristics and limitations. The formal/official dimension of risk information encourages institutional endorsement, which in turn supports links between risk management policies and policies that address corresponding financial, social, and institutional impacts.



*Satellite view of Manila*

*Haiti - World Bank Photo Archive*

## 4 IT IS OFTEN NECESSARY TO UTILIZE INNOVATIVE DATA COLLECTION PROCESSES WHERE EITHER EXISTING DATA, BUDGETS, TIMEFRAMES, OR HUMAN RESOURCES ARE LIMITED.

For example, in the Philippines, a state-of-the-art technological approach to collecting exposure data was used at the city level as part of the Greater Metro Manila Risk Assessment Project (GMMA RAP). This approach incorporated data from high-resolution aerial imagery (centimeter resolution) and airborne LiDAR (giving ground and building heights to millimeter accuracy) into GIS data sets to provide information about individual buildings' location and size; it then added further information about building construction type, land-use classification, and residential population estimates.[7] In a separate case in Indonesia, a collaborative and cost-effective approach – crowdsourcing through OpenStreetMap – was used both to collect exposure data in certain cities (including information on building type, building capacity, wall type, roof type, and number of stories) and to create a methodology that could be replicated across the entire country.[8]

**4** *http://bit.ly/urban_risks*
**5** *http://documents.worldbank.org/curated/en/659161468182066104/pdf/709820PUB0EPI0067926B09780821389621.pdf*
**6** *https://www.gfdrr.org/sites/gfdrr/files/publication/Understanding_Risk-Web_Version-rev_1.8.0.pdf.*
**7** *https://www.gfdrr.org/sites/gfdrr/files/publication/Understanding_Risk-Web_Version-rev_1.8.0.pdf.*
**8** *Ibid.*

B

# AREA BASED URBAN RESILIENCE AND TRANSFORMATION APPROACHES

(INCLUDING HOUSING)

1

A HOLISTIC, AREA-BASED APPROACH TO URBAN RESILIENCE AND TRANSFORMATION IS OFTEN MORE FAVORABLE TO REDUCE RISKS ACROSS ASSETS AND COMMUNITIES AND TO ESTABLISH BROADER COMMUNITY RESILIENCE AND WELLBEING OUTCOMES.

This is preferable to property by property or individual sector-focused (e.g. housing OR infrastructure OR community assets) approaches. These latter approaches are often time consuming, complicated and/or can potentially mean the opportunity to identify and resolve cross-area issues are missed. However, area based urban resilience is complex in its own right. For example, the design and implementation of such projects can involve major land acquisition, relocation of communities, compensation, grievance mechanisms, temporary accommodation needs, and community consultation on technical designs for multiple housing and assets.

2

THE PLANNING PHASE SHOULD CONSIDER THE OVERALL GROWTH OF THE CITY AND NOT JUST THE TARGETED REGENERATION AREA.

In fact, scoping can be a tool to help determine the future growth direction of the city. For example, in Buenos Aires, Argentina with the Puerto Madero regeneration project in the 1990s, the scoping phase not only focused on regenerating the port area into higher-value land uses, but it also envisioned the revitalization of the central business district, eventually overcoming years of disinvestment and changing the public's perception of the downtown area.[9]

3

A COMPREHENSIVE PROGRAM TO SUPPORT SEISMIC STRENGTHENING OF PUBLIC AND RESIDENTIAL BUILDINGS - INCLUDING RETROFITTING - IS ADVISABLE OVER A ONE SIZE FITS ALL APPROACH FOR EFFICIENCY OF RESOURCES AND HIGHER EFFECTIVENESS OF INTERVENTION.

For example, in San Francisco, the Mandatory Soft Story Retrofit Program (MSSP)[10] was created in 2013 as a multi-year community-based effort led by the Earthquake Safety Implementation Program and enforced by the Department of Building Inspection (DBI) to ensure the safety and resilience of San Francisco's housing stock through the retrofit of older, wood-framed, multi-family buildings with a soft-story condition. As part of this program, all affected property owners were given notice beginning in September 2013 and were required to have submitted their screening forms to DBI by September 15, 2014. DBI has achieved over a 99% response to the program. Buildings that have not complied with this requirement have been placarded and issued Notices of Violation (NOV). The program encouraged property owners of soft story buildings to take the necessary steps to comply with program requirements by filing for a permit to ensure their properties are seismically safe in anticipation of the next big earthquake.

9 *https://urban-regeneration.worldbank.org/node/6*

10 *https://sfdbi.org/softstory*

## 4 CONSISTENT AND EQUITABLE TECHNICAL AND FINANCIAL SUPPORT FROM THE GOVERNMENT SHOULD BE PROVIDED TO ALL HOUSEHOLDS THAT NEED SUPPORT TO IMPLEMENT URBAN RESILIENCE MEASURES TO DRIVE EQUITABLE OUTCOMES.

Local governments in Japan's Tokai region, centered on Shizuoka Prefecture, are working on earthquake resistance through the TOUKAI-0 project.[11] An important focus of the project is on buildings that were designed before 1981 under the old Japanese Building Standard Law (1950, amended in 2007), which are less resistant to earthquakes. The program offers financial and technical support to owners of wooden and non-wooden houses that were built before 1981, as well as households that are vulnerable to seismic risks, such as those with only elderly residents and/or with persons with disabilities.[12] This support includes:

**Free evaluations from seismic engineering experts.** Owners of eligible wooden houses that were built before 1981 can receive a free evaluation[13] of the earthquake resistance of their home by an expert. Specialists in seismic screening and evaluation will be dispatched to relevant homes.

**Creation of a reinforcement plan.** After the evaluation, if retrofit is deemed necessary, a retrofit plan will be created by an expert or an engineer. A subsidy of two-thirds (which is the upper limit[14]) of the retrofit cost might be offered by national government and local municipalities. The program (i.e., managed by Shizuoka prefecture) also provides an extra subsidy to households that have only elderly residents.

**Seismic reinforcement work.** For earthquake-resistant reinforcement work on wooden and non-wooden houses built before 1981, including retrofitting or replacement with seismic resilient housing, a subsidy up to US$10,000 (JP¥1.1 million) is offered by local municipalities and national government. The exact amount of the subsidy depends on the retrofitting investment requirements of each municipality on the housing type. In addition, to qualify for the subsidy, the retrofitted building must obtain a score of at least 1.0*See the box on page 19 upon final evaluation after the reinforcement work has been completed. For households with only elderly residents, an additional subsidy is provided by the program.

## 5 BUILDING AND LAND RECORDS ARE KEY TO MONITORING RESILIENCE OUTCOMES.

For many reasons, the TOUKAI-0 project has achieved a relatively high rate of retrofitting. Based on the research, the main reasons are that the government has a complete list of all buildings within the municipality, has well-developed building codes and retrofit design codes, and has a clear concept for damage mitigation. In Japan, all buildings, including residential structures, are required to obtain a construction permit and to register with the local municipality. All the basic information, such as the built area, height, structural type, and year built, are recorded on a list that is maintained by the municipality. By using the complete list of buildings, local government can identify vulnerable buildings or neighborhoods without additional investigations. Further, there is strong enforcement of these regulations.

**11** *https://www.iitk.ac.in/nicee/wcee/article/13_1866.pdf. "Tokai" in Japanese signifies both the "Tokai" region, but also another meaning to the word is "collapse." Therefore, the "Tokai-0" project aims to minimize the number of deaths from building collapses. Source: Shizuoka Prefecture. 2013. TOKAI-0. http://www.taishinnavi.pref.shizuoka.jp/toukai0/promotion_of/promotion.html#1*

**12** *http://www.taishinnavi.pref.shizuoka.jp/download/pdf/2014/0926/%E5%88%B6%E5%BA%A6%E4%B8%80%E8%A6%A7.pdf*

**13** *Shizuoka Prefecture. 2014. 2014 Project "TOUKAI-0" Integrated Support Project List. http://www.taishinnavi.pref.shizuoka.jp/download/pdf/2014/ 0926/ %E5%88 %B6%E5%BA%A6%E4%B8%80%E8%A6%A7.pdf*

**14** *This is the upper limit for wooden and non-wooden households built before 1981. For households only with elderly, the public sector covers 100%.*

## 6 ASSESSMENT OF POLICIES IN URBAN TRANSFORMATION TERRITORIAL PLANS IS CRITICAL TO FACTOR IN DISASTER RISK REDUCTION, BOTH FOR NEW RESERVE AREAS AND EXISTING RISKY AREAS.

In New Zealand, under the Canterbury urban reconstruction initiative, a review of local territorial plans was conducted and resulted in the introduction of development controls around subdivision density and the levels of geotechnical investigation required; controls for high-hazard areas or for buildings, such as requiring earthquake-strengthening of certain classes of buildings, requiring raised floor levels in flood hazard zones, and specifying the type of materials for buildings on more vulnerable land; and the identification of emergency response areas (e.g., tsunami evacuation zones).[15]

## 7 RECOGNIZING AND RESPECTING COMMUNITY HOUSING AND LIVELIHOOD NEEDS AND ARCHITECTURAL TRADITIONS IMPROVES SUSTAINABILITY OF HOUSING AND NEIGHBORHOOD IMPROVEMENTS.

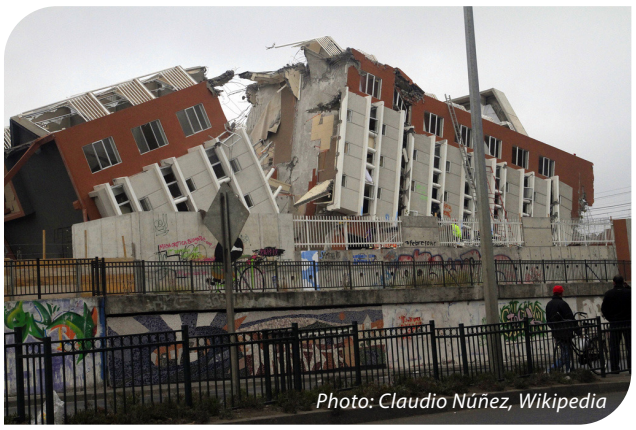


Photo: Claudio Núñez, Wikipedia

In Chile, a 2010 earthquake and tsunami on the coast destroyed 11,400 buildings. The threat from natural disasters was worsened by the type of housing typical of the area: mostly self-built, with few people complying with building regulations and standards. The challenge of reconstructing these houses and livelihoods – so deeply linked to the sea – involved the design of social housing adapted to local needs and resilient to extreme natural events. After the disaster, focus groups with neighborhood leaders identified the most relevant and sensitive topics which needed to be considered for the reconstruction of the coastal villages. Then each family was consulted and asked whether they wanted to stay in the same place or be relocated somewhere safer. The 'pros' and 'cons' of each option were discussed at community workshops. The communities that decided to remain became part of the Resilient Social Housing program. The design proposal was finalized in assemblies or workshops in each locality. The program focused on several related activities:

**IDENTITY AND ARCHITECTURE**
Looking at how traditional materials and elements of architecture could be integrated into the design and architectural style of the houses.

**ECONOMIC ACTIVITIES**
Supporting fishermen and algae collectors to acquire equipment and boats; supporting small and medium sized enterprises to establish commercial activities and a wider program of training.

**CULTURAL ACTIVITIES**
The development of various programs including an annual festival 'Viva Dichato'

The Chilean Government's reconstruction program could have recommended that communities resettle in a safer place away from the sea, but this would have meant not only losing their homes but also their livelihoods and community identity. Instead, a total of 180 'stilt houses' were built in five fishing villages for local families who make their living from fishing or by collecting algae. The new houses are architecturally and structurally designed to offer extra safety to the families and enable quick repairs if they are affected by future tsunamis or rough seas. This resilient social housing has helped to preserve the culture and identity of coastal communities and has supported people's livelihoods.[16]

**15** *https://ndhadeliver.natlib.govt.nz/webarchive/wayback/20190423063418/https://www.eqrecoverylearning.org/*
**16** *https://world-habitat.org/world-habitat-awards/winners-and-finalists/resilient-social-housing/*

8

## WHEN DESIGNING FINANCIAL SUPPORT (INCLUDING SUBSIDIES) PROGRAMS FOR RESILIENT HOUSING, IT IS IMPORTANT TO CONSIDER THE SOCIAL FABRIC AND ECONOMIC OPPORTUNITIES FOR FAMILIES.

After the 2010 earthquake, the Chilean government planned to rebuild or repair 222,000 units for low- and middle-income families. Within a few months of the earthquake, a national reconstruction plan was developed which required special legislation and funding through various business taxes and (non-affected) property tax increases. The budgetary sources for the recovery included taxes on copper mining, tobacco, and non-affected high value properties, international donations, and reallocation among various government budgets.

A critical decision was made to subsidize housing demand rather than direct supply. A "supply-side" subsidy entails government contracting with large local or international companies to build thousands of units on green-field sites. The "demand-side" subsidy was focused on keeping families in place. It meant putting emergency shelters on individual home sites and planning for rebuilding on those same sites. Practically speaking, this meant that the housing reconstruction program would be scattered over towns and rural regions, on individually owned sites. The decision was neither popular with the building industry, nor with many politicians, as it was slow and cumbersome. The use of existing home sites kept people in their communities, with access to their jobs and family members, and the recovery was on their land, where they could monitor the construction. This decision applied to the great majority of disaster-impacted families. Only about 4000 families were housed in temporary emergency camps (out of the 80,000 emergency units constructed), because their home sites or social condominiums were in the tsunami zone or because they were renters in damaged homes who needed new alternative housing.


The Ministry established strict construction norms for all new housing focus on materials, structure, thermal capacity, and habitability (in terms of minimum unit size). Essentially every builder had to have their model units certified by Ministry engineers before it could be presented to a family or community. Second, funding for technical assistance, inspection, quality control, and oversight was built into the subsidies and this went to local architects, local governments, and Ministry offices. Finally, although housing recovery programs were tailored to specific types of damage and specific social conditions, one key principle was that all families would be able to choose from a variety of building types and contractors. For families, the capacity to choose a model home gave them an active role in their own recovery process.

Repair funds were disbursed in three increments (30%, 30%, and 40%) with inspections to ensure that funds were used for construction. Owners needing full reconstruction could select models from pre-certified contractors, do their own construction or buy an existing house. The typical subsidy for each house was about US$18,000 to US$20,000.

# C PRIVATE SECTOR ENGAGEMENT

## 1 REGULATORY INSTRUMENTS ARE NECESSARY FOR LEVERAGING A CITY'S REGULATORY POWERS TO INCENTIVIZE PRIVATE SECTOR PARTICIPATION

(TAX-BASED AND NON-TAX-BASED INCENTIVES, ZONING, LAND-USE REGULATIONS, AND DEVELOPMENT RIGHTS TRANSFERS) AND ESTABLISH PUBLIC-PRIVATE PARTNERSHIPS (PPP).

Policy tools usually involve creating an appealing regulatory environment to attract the private sector. These are non-fiscal tools that depend on the government's land use planning powers and ability to leverage these powers in achieving urban regeneration. In Japan, urban regeneration is a very common approach where the public sector incentivizes involvement of the private sector in strengthening the resilience of disaster-prone CBDs and residential neighborhoods through urban planning, development and renewal legislations and programs. The Act on Promotion of Improvement of Disaster Control Districts in Populated Urban Districts (1997 amended in 2003) aims to reduce fires after large-scale earthquakes through redevelopment and renewal of high-density urban districts vulnerable to earthquakes due to the high concentration of old wooden buildings. This is done through upgrading buildings to meet disaster resilience standards and establishing roads and urban parks to enhance evacuation and disaster response.

Combined with the Urban Renewal Act[17] and the Act on Special Measures Concerning Urban Renaissance[18], etc., the private sector is incentivized to undertake urban renewal projects and to integrate disaster resilience within the redevelopment plan and project through review criteria of the renewal plan, as well as through subsidies for disaster risk assessment and mitigation and preparedness investments. Under the Urban Renewal Act, landowners, tenants, and developers regenerate unsafe areas, develop new transit, and strengthen the competitiveness of the area. The government helps with, and benefits from, this process by changing zoning codes from residential to mixed-use, and/or also allowing for up-zoning. Urban development schemes are implemented in existing urban areas and often involve government rezoning a given area from a low-density (single-family housing) to higher-density (mixed-use or commercial) development. It is usually accompanied by infrastructure improvements (mass transit, such as metro lines) that can support such up-zoning.


**17** *Urban Renewal Act (Toshi-Saikaihatsu Ho; 1969) – Under this Act, urban redevelopment programs and disaster resilient high density urban district programs are implemented where national and local governments provide subsidies to fund part of the planning, land development, public facility construction and/or road construction costs. (Source in Japanese - https://www.mlit.go.jp/crd/city/sigaiti/shuhou/saikaihatsu/saikaihatsu.htm )*

**18** *Act on Special Measures Concerning Urban Renaissance (Toshi-Saikaihatsu Tokubetsu Shochi Ho; 2002 amended in 2020) – The Act supports urban regeneration to enable cities achieve international competitiveness and livability. Urgent Areas for Urban Renewal are defined and designated, as well as mechanisms to identify and support (including subsidies) private companies to undertake the urban redevelopment in the designated Urgent Areas. (Source in Japanese - https://www.kantei.go.jp/jp/singi/tiiki/toshisaisei/yuushikisya/271029/2.pdf).*

*Johannesburg, South Africa - World Bank Photo Archive*

Policy makers in Johannesburg, South Africa used a national tax incentive to leverage private sector investment in regenerating blighted inner city neighborhoods.[19] This law, described as a driving force behind the surge in inner city real estate investments, allowed municipalities to designate priority areas for regeneration efforts listed in their integrated plans as 'urban development zones'. The incentive works in the form of an accelerated depreciation from eligible taxpayers' taxable income, if the income comes from the construction or renovation of all or part of a building in these zones. Johannesburg also legislated city improvement districts to absorb more private funding for security, closed circuit TV cameras, public space upgrades, and social and educational programs.

## 2 IN MANY CASES, CITIES USE AUTONOMOUS CORPORATIONS TO FINANCE AND IMPLEMENT REGENERATION INITIATIVES.

For example, financing the regeneration of Puerto Madero in Buenos Aires, Argentina was implemented through a public limited corporation, which was regulated by the commercial code. The federal government and the city government contributed to the capital stock in equal parts. The company had the ability to issue shares in order to attract private, national, and foreign funds. The decree also transferred the property of the 170 hectares of public land to the corporation. The statute of the corporation set the capital stock in Arg$40 million represented by 40,000 common shares. Each share was entitled to one vote. By a resolution at the ordinary shareholders' meeting, the capital stock could be raised to five times the amount previously set.[20]

## 3 SETTING UP INNOVATIVE PARTNERSHIPS BETWEEN THE PUBLIC AND PRIVATE SECTOR CAN EXPEDITE AND IMPROVE REDEVELOPMENT EFFORTS.

In New Zealand, public-sector clients normally tender out infrastructure projects and competing civil engineering companies bid for the work. The process for awarding just one project can take months and runs the risk of construction delays and cost overruns. After the Canterbury earthquakes of 2010 and 2011, to reduce these risks, the government created a co-operative model called the Stronger Christchurch Infrastructure Rebuild Team (SCIRT).[21] SCIRT comprised three government agencies: the Canterbury Earthquake Recovery Authority, Christchurch City Council, and the New Zealand Transport Agency. The engineering companies were: City Care, Downer, Fletcher, Fulton Hogan, and McConnell Dowell. The public-sector owners of the infrastructure paid for the work and lent staff to SCIRT to manage and coordinate projects and set overall direction. The five engineering firms were participants in SCIRT and lent design and fulfillment teams to sketch out and deliver projects. Companies still competed for projects and received a fee, but the central agency made the big decisions and set priorities for selecting eligible projects . SCIRT determined the budget and the fees and allocated projects. All parties shared the risks of building in a place where the geology itself had changed in ways that are still being revealed; they also shared information with each other on what they were finding when they dug into the ground. Infrastructure being rebuilt was assessed for resilience and criticality, and lessons learnt were incorporated into technical solutions to provide greater resilience.

**19** *https://urban-regeneration.worldbank.org/Johannesburg.*
**20** *https://urban-regeneration.worldbank.org/Buenos_Aires.*
**21** *https://www.govtech.com/em/disaster/Christchurchs-SCIRT-Model-for-Rebuilding.html*

# D COMMUNITY PARTICIPATION

## 1 IT IS IMPORTANT THAT CITY GOVERNMENTS RECOGNIZE THE VALUE OF COMMUNITY, COMMUNITY GROUPS, AND NONGOVERNMENTAL ORGANIZATIONS PARTICIPATING IN URBAN RESILIENCE AND TRANSFORMATION PLANNING TO STRENGTHEN IMPLEMENTATION AND MONITORING, AND TO ASSIST IN DEFINING FEASIBLE PROGRAMS FOR REDUCING RISK.

Community involvement can support the generation of risk data and maps, increase awareness of prevalent risks, and help identify potential actions for reducing communities' vulnerability. There are also cases whereby community participation has not been prioritized and the outcomes have not met the community needs, particularly those who are most vulnerable to disaster and climate risks.

## 2 PLANNED, ADAPTIVE COMMUNITY ENGAGEMENT APPROACHES YIELD BENEFITS FOR THE LONG-TERM SUSTAINABILITY OF URBAN TRANSFORMATION PROGRAMS.

In New Zealand, the focus of urban reconstruction after the Canterbury earthquakes was on creating urban transformation decisions that best met community needs. To understand those needs and to communicate the urban transformation process, community meetings were organized with large numbers of affected residents. Over time, the focus was more on smaller groups of residents with complex needs. In some cases, in larger meetings, "breakout groups" were used to discuss points and provide feedback. The advice from this example has been to actively using the engagement process to learn more about the impact of government decisions on communities. Key lessons include the need to use this type of information to develop more responsive engagement and to be flexible because urban transformation occurs at different rates for different people. Some people are in circumstances that allow them to make decisions more quickly than others, and some groups are more vulnerable than others.

*Key lessons include the need to use this type of information to develop more responsive engagement and to be flexible because urban transformation occurs at different rates for different people.*

## 3 INNOVATIVE APPROACHES TO ENGAGING WITH AFFECTED COMMUNITIES CAN EXPAND PARTICIPATION AND INTEREST.

In the Canterbury urban reconstruction case, the Christchurch City Council launched an internationally awarded six-week engagement campaign, Share an Idea, allowing those in the greater Christchurch area a chance to share their ideas on how the city should be redeveloped following the February 2011 earthquake. Share an Idea generated 106,000 ideas from the community for the redevelopment of the Central City with urban planners, technical specialists and communications advisors setting up community forums and visiting schools to hear ideas from the community. These ideas were used to inform a draft Central City Recovery Plan that was provided to central government for their review, approval and part financing.[22]

**22** *https://ccc.govt.nz/the-council/how-the-council-works/reporting-and-monitoring/share-an-idea.*

## 4 CITIZEN-CENTRIC DESIGN PROVIDES HOLISTIC BENEFITS, IN COMPARISON TO 'PREDICT AND PROVIDE' URBAN RESILIENCE AND TRANSFORMATION WHERE DECISIONS ARE MADE BASED ON WHAT CIVIL SERVANTS THINK PEOPLE NEED WITHOUT ADEQUATELY CONSIDERING THE IMPACTED CITIZEN.

In the case of the Cheonggyecheon restoration project in the Republic of Korea, citizen-centric design focusing on improving the quality of the physical environment has led to numerous co-benefits such as improved citizen wellbeing, air quality and increased biodiversity. Based on the experience, the Government went on to invest in the incorporation of citizen centric technologies to promote behavior change in commuting and reduce single car journeys. [23]

## 5 IT IS IMPORTANT TO INVEST IN WAYS TO TARGET AND INCLUDE MARGINALIZED, VULNERABLE GROUPS INTO THE URBAN RESILIENCE PROCESS.

*Dikmen Valley, Ankara - Photo: Jorge Franganillo, Wikipedia*

The Ankara Dikmen Valley Project in Turkey transformed the valley, which was an important development axis, into a center of attraction for commerce and cultural investments, as well as a recreational destination. The project accomplished this vision through a participatory process by including the residents of the informal housing settlements in the redevelopment of the valley. Instead of using the typical expropriation method, new housing units were offered in exchange for the properties of the informally housed owners and would generate financing through other investments. For the project to start, consensus was reached with the informal owners in the first stage site. The principles for consensus were that the housing units built in the valley would be exclusively given to shareholders, the value of the new housing units will be calculated based on the existing lot and house sizes. In exchange for the 80 square meter houses, shareholders that fell below the average score would pay a contribution, and shareholders that had above average scores got compensated. Every shareholder received only one housing unit, and shareholders were paid rent allowance until new houses were delivered.[24]

## 6 ONGOING PUBLIC INFORMATION PROGRAMS ARE ESSENTIAL TO PROMOTE CITIZENS' AWARENESS OF RISK AND THE CORRESPONDING EFFORTS BEING UNDERTAKEN BY THE CITY GOVERNMENT TO REDUCE RISK.

This can sensitize key stakeholders to the basic concepts of disaster risk management and climate change adaptation through workshops and information sessions. Participants of these meetings would ideally be composed of a broad range of stakeholders, including municipal staff engaged in urban planning and environmental services, disaster preparedness and response, water supply and sanitation services, civil defense, fire departments, and health services. To promote visibility and engagement on these issues, the private sector, insurance companies, university staff, and community leaders should also be included. The Urban Resilience Project in Bolivia[25] – supported by the World Bank - includes a communications strategy to raise awareness at the community level and engage beneficiaries in a sustained, two-way communication around the project and its associated benefits. The strategy promotes the active and ongoing participation of beneficiaries in Project design and implementation, taking into consideration a range of aspects, such as gender, youths, and accessibility for the elderly and disabled in order to take into account their needs and preferences (for example these groups would be included as stakeholders in the participatory process for the design of public space and urban upgrading investments to be financed under the Project).

**23** *https://urban-regeneration.worldbank.org/Seoul.*

**24** *https://www.worldbank.org/en/news/opinion/2015/06/09/turkeys-growing-cities-are-good-for-development.*

**25** *https://www.worldbank.org/en/news/loans-credits/2020/02/20/bolivia-urban-resilience-project-p165861.*

7

THE RELOCATION OF INHABITANTS CAN ADVERSELY AFFECT PROPERTY OWNERS, TENANTS, AND THE NEIGHBORHOOD AT LARGE WHEN THE COMMUNITY NEEDS ARE NOT CONSIDERED INTO THE RELOCATION PROCESS AND NEW HOUSING OR NEIGHBORHOOD DESIGNS.

In Fiji, where climate change has been causing adverse impacts on communities, four communities have already initiated or completed the task of moving their homes and livelihoods to less exposed locations, with numerous other communities earmarked for future relocation. The case in Fiji illustrates that planned climate-induced relocations have the potential to improve the livelihoods of affected communities, yet if these relocations are not managed and undertaken carefully, they can lead to unintended negative impacts, including exposure to other hazards. Inclusive community involvement in the planning process, regular and intentional monitoring and evaluation, and improving livelihoods through targeted livelihood planning should be accounted for in future relocations to ensure outcomes are beneficial and sustainable.

# CONCLUSION

These experiences provide valuable lessons for both the national government and Turkey's municipalities as they move through their urban resilience and transformation process – including the development and implementation of city-wide risk assessments, when navigating the often complicated and sensitive process of urban regeneration including housing, and ensuring citizen participation and beneficial private sector engagement in the processs.[26] It should be noted that there are 6 million citizens living in 1,492,000 independent units located in Transformation Areas (Risky Area, Reserve Construction Area, Urban Transformation and Development Project Area, Renovation Area) and risky buildings. So far, the Ministry of Environment and Urbanization has allocated approximately 16,675,000,000 TL to the relevant municipalities, Mass Housing Administration (TOKI), other stakeholders and citizens for the realization of transformation activities that will ensure the safety of life and property (including rental assistance and interest rate subsidy support, project and expropriation expenses, etc.). With this commitment, the Government of Turkey, at both central and local government levels, has elevated the importance of urban transformation practices. In particular, Turkey is a party to the framework of the "2030 Agenda", and urban transformation studies are considered as an integral part of sustainable development and urbanization, directly related to SDG11.

Other key recommendations that national and municipal governments should consider include:

**1.** Utilizing and sharing open data, for example, public access to information on flood hazards and buildings under seismic risk (New Zealand[27] and Bucharest municipalities publish this data); and

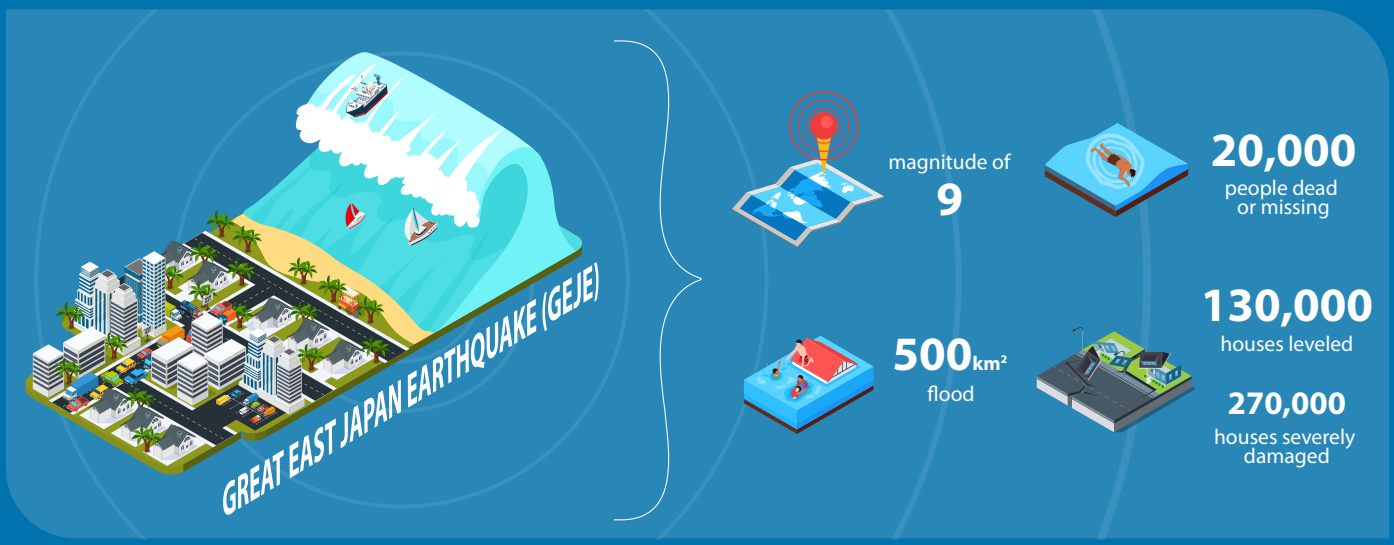
**2.** Given the rapid urbanization of Turkish cities there is a need to model future risk that illustrates where investments will make the future riskier or reduce the risks urban areas face.

The World Bank team will facilitate knowledge exchanges with some of the key case studies based on the level of interest from the Turkish government.

**26** *Mikio Ishiwatari [editor]; Ranghieri, Federica [editor].2014. Learning from Megadisasters : lessons from the great east Japan earthquake (English). Washington, D.C. : World Bank Group. http://documents.worldbank.org/curated/en/478711468038957554/Learning-from-Megadisasters-lessons-from-the-great-east-Japan-earthquake*

**27** *New Zealand: for more information on this approach and their tools see: https://niwa.co.nz/natural-hazards/hazards/floods; https://catalogue.data.govt.nz/group/flood; and https://data-niwa.opendata.arcgis.com/datasets/933e8f24fe9140f99dfb57173087f27d*

## BOX 1: LESSONS FROM THE GREAT EAST JAPAN EARTHQUAKE




On March 11, 2011, an earthquake of magnitude 9.0 occurred in the Pacific Ocean off the coast of Japan's Tohoku region. The quake shook the ground as far away as western Japan and lasted for several minutes. A half-hour later, a tsunami of unprecedented force broke over 650 kilometers (km) of coastline, toppling sea walls and other defenses, flooding more than 500 square kilometers ($km^2$) of land, and washing away entire towns and villages. The devastation left some 20,000 people dead or missing, with most of the deaths caused by drowning. The tsunami leveled 130,000 houses and severely damaged 270,000 more.[28]

Japan is recognized as a global leader in building resilience through DRM policies and practices, built through years of experience combating the adverse effects and loss caused by numerous natural disasters. Today, despite its high exposure to earthquakes and other hazards such as tsunamis, tropical cyclones (typhoons), and flooding, Japan has a built environment that is among the safest and most disaster resilient in the world. Notably, Japan's approach is aligned with that of the Sendai Framework for Disaster Risk Reduction 2015-2030.

The Great East Japan Earthquake (GEJE) demonstrated that if it were not for Japan's long-standing history of coping with natural risks and disasters, and of continuously learning and improving its DRM system, the loss of life, land and property could have been even more devastating. The main elements of that DRM system are:

- Investments in structural measures (such as reinforced buildings and seawalls), cutting edge risk assessments, early-warning systems, and hazard mapping - all supported by sophisticated technology for data collection, simulation, information, and communication, and by scenario building to assess risks and to plan responses (such as evacuations) to hazards. For instance, structural measures include the Urgent Earthquake Detection and Alarm System (UrEDAS), used by Japan Railway (JR) Group, that shuts off the power supply system of running rail services automatically -when preliminary earthquake tremors are detected. During GEJE, UrEDAS successfully activated emergency brakes to slow down 27 Shinkansen high-speed rails that were in operation . The Earthquake Early Warning System (EEWS), a nation-wide alert system operated by Japan Meteorological Agency was also launched in 2007.[29]

**28** *World Bank. 2014. "Learning from megadisasters: lessons from the Great East Japan Earthquake". \http://documents.worldbank.org/curated/en/478711468038957554/Learning-from-Megadisasters-lessons-from-the-great-east-Japan-earthquake.*

**29** *World Bank. 2019. "Information and Communication Technology for Disaster Risk Management in Japan: How Digital Solutions are Leveraged to Increase Resilience through Improving Early Warnings and Disaster Information Sharing" https://reliefweb.int/sites/reliefweb.int/files/resources/Information-and-Communication-Technology-for-Disaster-Risk-Management-in-Japan.pdf*

- A culture of preparedness, where training and evacuation drills are systematically practiced at the local and community levels and in schools and workplaces - special days designated by the Government for getting people's attention on preparedness and DRM. The Comprehensive Disaster Management Drill Framework was established after the Great Hanshin-Awaji Earthquake in 1995, and the drills are conducted at the national, local, and community levels on designated days, with the aim to guide the comprehensive and systematic execution of disaster response drills while linking disaster management entities with one another. [30]

- Stakeholder involvement, where the national and local government, communities, NGOs, and the private sector all know their role and advocating that resilience requires engagement of all through a combined approach of "Self-Reliance", "Mutual Support", and "Public Aid".

- Effective legislation, regulation, and enforcement. For example, building codes, the Disaster Countermeasures Basic Act, the Basic Act for National Resilience and several other policy and plans have been kept current or revised as per the need after different disasters. There are policy and guidelines for every sector guiding every Government authority for disaster risk reduction activities.

- The use of sophisticated instrumentation to underpin planning and assessment operations. For example, a GIS-based disaster information management system has been used during disasters in Japan. The helicopter satellite communication system transfers photos taken from helicopters in real-time via satellite to disaster management centers and other organizations, and the disaster damage map enables officials to compare aerial photographs of impacted areas before and immediately after a disaster. These systems assist with rapid damage assessments, helping to determine priorities of search and rescue activities.[31]

Understanding that the risks from natural hazards can never be eliminated, Japan has, since 2011, further increased its level of disaster preparedness, and invested in new infrastructure and education programs, incorporating community-based prevention and evacuation, and risk-related finance, insurance, and land-use regulation. Today, Japan is placing even heavier emphasis on recognizing and respecting complexity and residual risk, designing and managing systems that "fail gracefully"- where structural risk reduction measures mitigate damage to the greatest extent possible, but combining this with strengthened preparedness and response measures through better land-use planning, urban development, and evacuation. The importance of establishing multiple lines of defense, combining structural and non-structural measures, shifting from a "single line of defense" based on tsunami dikes to a "zone defense" through integrating disaster resilience within various infrastructures such as roads, river dykes, public buildings, are lessons learned from GEJE that are helping cities in Japan strengthen its resilience.

Furthermore, as described earlier, the growing importance and need to engage the private sector in improving the resilience of cities has led to the establishment of various incentives for private sector to invest in resilience, such as constructing facilities that serve as evacuation centers, or additional floor-space ratios for evacuation spaces on high floors are given as bonuses to incentivize private sector engagements. Additionally, learning from the long and complex reconstruction process post GEJE, Japanese cities are now encouraged to discuss, agree, and develop an urban reconstruction or development plan before such large-scale disaster strikes in order for quicker, participatory, and meaningful post-disaster reconstruction and redevelopment. To support this, Earthquake and Tsunami Resilient Urban Development Guidelines[32] have been developed and applied in urban areas with high risks to future earthquakes.

**29** *World Bank. 2016. "Learning from Disaster Simulation Drills in Japan". http://pubdocs.worldbank.org/en/419601484285362538/011717-drmhubtokyo-Learning-From-Disaster-Simulation-Drills-in-Japan.pdf*

**30** *https://reliefweb.int/sites/reliefweb.int/files/resources/Information-and-Communication-Technology-for-Disaster-Risk-Management-in-Japan.pdf*

**32** *https://www.skr.mlit.go.jp/kensei/saigainituyoi/nankai_taikeizu/zu2015/saigai_2015_pdf/02_02_gaid8_01_mokuji_02.pdf ; https://www.mlit.go.jp/common/001246099.pdf*

## THE 1.0 IS THE SEISMIC RESISTANT CAPACITY INDEX IN JAPAN

The 1.0 is the **seismic resistant capacity index**. In Japan, there are 2 types of seismic resistant capacity index: 1) **Is** for RC buildings and 2) **Iw** for wooden structures.

For wooden buildings that have seismic resistance capacity index equal or higher than 1.0 (1.0 ≤ Iw) is deemed to have a low possibility of severe damage or collapse subject to the Japan Meteorological Agency (JMA) intensity 6 to 7 earthquake event.

FYI for RC buildings, buildings that have seismic resistance capacity index equal or higher than 0.6 (0.6 ≤ Is) is similarly deemed to have a low possibility of severe damage or collapse subject to the Japan Meteorological Agency (JMA) intensity 6 to 7 earthquake event.

More info can be found on the seismic resistance capacity index (though focused on the RC buildings) in Box 5.1 (page 52) of the report HYPERLINK "http://documents1.worldbank.org/curated/en/674051527139944867/pdf/126547-23-52018-14-36-49-GFDRRConvertingDisasterExperienceintoaSaferBuiltEnvironmentlow.pdf" Building regulation for resilience: converting disaster experience into a safer built environment - the case of Japan (English) .

# ANNEX - LIST OF CASE STUDIES

- **COLOMBIA:** BOGOTA'S USE OF THE URBAN DISASTER RISK INDEX (UDRI)
- **SAO PAULO, BRAZIL:** MULTI-HAZARD URBAN ASSESSMENT
- **CHILE:** SOCIAL HOUSING RECOVERY - 2010 EARTHQUAKE AND TSUNAMI RECOVERY AND RECONSTRUCTION
- **NEPAL:** SEISMIC RESILIENCE IN THE KATHMANDU VALLEY'S EDUCATION AND HEALTH INFRASTRUCTURE
- THE WORLD BANK PROBABILISTIC RISK ASSESSMENT (CAPRA) PROGRAM FOR **LATIN AMERICA AND THE CARIBBEAN EXPERIENCE**
- **PHILIPPINES:** PRIORITIZATION METHODOLOGY FOR SEISMIC UPGRADING OF SCHOOLS
- **PHILIPPINES:** THE GREATER METRO MANILA RISK ASSESSMENT PROJECT (GMMA RAP)
- **PHILIPPINES:** LEGAZPI MULTI-RISK ASSESSMENT
- **NEW ZEALAND:** THE CANTERBURY EARTHQUAKE RECONSTRUCTION PROCESS AND SCIRT MODEL
- **UNITED STATES:** FEMA'S RAPID VISUAL SCREENING (RVS)
- **UNITED STATES:** SAN FRANCISCO, THE MANDATORY SOFT STORY RETROFIT PROGRAM
- **UNITED STATES:** WASHINGTON, DC'S REGENERATION OF THE ANACOSTIA RIVER
- **JAPAN:** DRM INITIATIVES AFTER THE 2011 GREAT EAST JAPAN EARTHQUAKE
- **JAPAN:** TOKAI REGION EARTHQUAKE RESISTANCE THROUGH THE TOUKAI-0 PROJECT
- **JAPAN:** URBAN REDEVELOPMENT LAW
- **JOHANNESBURG:** NATIONAL TAX INCENTIVE
- **INDIA:** AHMEDABAD, REGENERATION OF THE SABARMATI RIVERFRONT
- **ITALY:** URBAN TRANSFORMATION COMPANIES
- **SINGAPORE'S URBAN WATERFRONT REDEVELOPMENT**
- **CHINA:** SHANGHAI, THE REGENERATION OF THE TAIPINGQIAO NEIGHBORHOOD
- **REPUBLIC OF KOREA:** CHEONGGYECHEON RESTORATION PROJECT
- **BOLIVIA:** THE URBAN RESILIENCE PROJECT
- **BUENOS AIRES:** THE PUERTO MADERO REGENERATION PROJECT
- **TURKEY:** ANKARA DIKMEN VALLEY PROJECT