

**34<sup>th</sup> RSEP International Conference on Economics, Finance and Business**  
**6-7 March 2024, HCC. ST. MORITZ HOTEL, Barcelona, Spain**

## **Compulsory Earthquake Insurance in Türkiye and the Effect of the 2023 Kahramanmaraş Earthquake on the Insurance Sector**

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DOI: <https://doi.org/10.19275/RSEP/CONFERENCES305>

### **Abstract**

Insurance, simply, refers to a system where individuals transfer their risks to insurers, and protection against the transferred risks is provided by insurance companies. In Türkiye, following the devastating 1999 Marmara earthquake, resulted in significant loss of life and property, Compulsory Earthquake Insurance (CEI) was introduced to minimize earthquake losses. The TURKISH Catastrophe Insurance Pool (TCIP), a legal entity, was established to offer the insurance, both collects premiums and Shares compensations as an insurer. The insurance, substantial compensations were paid due to earthquakes in Van, Elazığ, and İzmir, highlighting the necessity of CEI. However, the impact of the Kahramanmaraş-centered earthquake on February 6, 2023, affecting 11 provinces, was profoundly destructive. Two major earthquakes with magnitudes of 7.7 and 7.6 occurred, resulting in the death of more than 50,000 people.

The total burden of the disaster by the earthquake on the TURKISH economy is estimated to be approximately 1.995 billion TURKISH Liras (103.6 billion dollars), constituting around 9% of the national income in 2023. The total number of residences in the region is approximately 2.6 million, with an insurance coverage rate known to be around 50% on average across the 11 provinces. The insurance sector has paid an estimated damage amount of approximately 5 billion dollars for the mentioned earthquake. In other words, around 5% of the total damage has been covered by the insurance sector.

**Keywords:** Compulsory earthquake insurance, Insurance business, Insurance rate, TURKISH catastrophe insurance pool  
**Jel codes:** G22, G28, G52



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## 1. Introduction

The destructive impact of earthquakes has led to the death of many individuals and caused formidable damages that are difficult to repair for years. In the face of risks that individuals feel threatened by throughout their lives, the instinct for self-protection has sought assurance through insurance. Regulations have been made on the insurance system, which serves as a risk transfer mechanism for natural disasters, one of the biggest threats to Türkiye. After the Gölcük earthquake on August 17, 1999, significant changes were made in disaster management. The most important of these changes was the establishment of the Turkish Catastrophe Insurance Pool.

Until 1999, the state assumed the earthquake risk with the disaster fund. However, with the awareness gained after major earthquakes, compulsory insurance was derived, and starting from the year 2000, the Compulsory Earthquake Insurance (CEI) application, managed by the Turkish Catastrophe Insurance Pool (THE TCIP), transferred this risk to insurance companies (Yörükbulut, 2023). Voluntary insurances, which are an extension of compulsory earthquake insurance, play a crucial role in providing coverage against earthquake risks.

The earthquake centered in Kahramanmaraş on February 6, 2023, has been recorded as the earthquake with the most destruction and loss experienced in Türkiye.

The main reasons for these significant destructions and material losses include rural-to-urban migrations, the opening of unsuitable wetlands for settlement due to rapid urban growth, and insufficient awareness of insurance in society. These migrations, causing an increase in the scale of disaster, have been clearly demonstrated by previous earthquakes such as the 1999 Gölcük and Düzce earthquakes, the 2011 Van earthquake, the 2020 Elazığ and İzmir earthquakes, and the 2022 Düzce earthquake (Akman & Şahin, 2023).

In Türkiye, where earthquakes frequently occur, there are many studies in the literature related to disasters. Kayihan (2004) aimed to clarify the concept of "Compulsory Earthquake Insurance" and discussed legal regulations regarding earthquake insurance after the 1999 earthquakes. Thus, the imposition of compulsory earthquake insurance, followed by the existence of THE TCIP as a public legal entity on the insurer side, was criticized as contrary to the fundamental principles of the private insurance sector. Barlas (2011) focused on the historical development of compulsory earthquake insurance and provided examples of insurance systems implemented against earthquake risks in other countries before it became mandatory in our country. It was observed that the regulations made after the 1999 earthquake were insufficient after the Van earthquake on October 23, 2011. The changes brought about by the "General Conditions of Compulsory Earthquake Insurance and Compulsory Earthquake Insurance Tariff and Instructions," published in the Official Gazette on September 8, 2000, were mentioned. Çilingir Azimli (2019) addressed administrative problems based on the Van earthquake and made suggestions for what can be done to prevent them from recurring. The main focus of Esen's (2023) work, which aims to create resilient cities, was on the inadequacy of compulsory earthquake insurance in reducing risks and the criticism that it functions only as a wound healing mechanism due to increasing costs.

## 2. Compulsory Earthquake Insurance (CEI)

Following the earthquake on August 17, 1999, the limited resources of the state prevented it from fully fulfilling its obligations. Experiencing the inadequacy of state resources in the face of a major disaster led to changes in compulsory earthquake insurance. The purpose of regulating compulsory earthquake insurance is not only to protect the interests of individuals but also to facilitate the state in fulfilling its social and economic responsibilities (Seven, Assessment of Mandatory Mediation in Lawsuits to be Filed Against THE TCIP Under the Disaster Insurance Law, 2023). The first private regulation, based on the authority granted by Law No. 4452 on August 27, 1999, and aimed at financing the elimination of earthquake damages, is the "Decree-Law No. 587." The Turkish Catastrophe Insurance Pool (The TCIP) was established to fulfill the task assigned by this decree, providing coverage for earthquake damages up to the amount specified in Article 10 of Decree-Law No. 587 (Seven, 2023). The legal regulation of disaster insurance was achieved with the enactment of Law No. 6305 on August 18, 2012 (Sağlam, 2021).

According to Law No. 6305 on Disaster Insurance, independent sections within the scope of Law No. 634 on Condominium Ownership, buildings constructed in the form of residences on privately owned immovable registered in the land registry, and dwellings constructed with credit provided by the state due to natural disasters are subject to Compulsory Earthquake Insurance. CEI covers material damages directly caused by earthquakes, as well as damages caused by fire, explosion, tidal waves (tsunamis), or landslides resulting from earthquakes in insured buildings up to the insured amount, including foundations, main walls, common walls separating independent sections, garden walls, retaining walls, ceilings, floors, stairs, landings, corridors, elevators, chimneys, roofs, and similar complementary parts of the structure (The TCIP, 2011). In Türkiye, where earthquakes have destructive effects and awareness of insurance is low, CEI has been partially made mandatory to minimize economic losses after earthquakes. However, the insured has certain obligations to benefit from

earthquake coverage. Failure to fulfill these obligations results in the inability to receive compensation. In this regard, the building owner must never allow damage to load-bearing columns and take necessary precautions against weakening the building. If unauthorized alterations that may adversely affect the load-bearing system are identified, the insured cannot receive compensation. There is no penal sanction for not obtaining CEI. However, according to Article 29 of Law No. 7269 on Measures to be Taken and Aid to be Provided Due to General Disasters Affecting Public Order, "For buildings covered by CEI, the state's obligations arising from this law and other relevant legislation cease to exist if CEI has not been obtained." In this case, it is understood that the state has no responsibility for those who do not have CEI (Sağlam, 2021). The TCIP has created a earthquake insurance fund independent of state resources, funded by premiums collected from CEI policyholders and additional insurance protection obtained from international reinsurers. The TCIP only uses this source to Share for the damage compensation of its policyholders (The TCIP, 2023).

### 3. The Effect of the February 6, 2023 Earthquake on the Turkish Insurance Sector

It is aimed to cover the financial damages resulting from earthquakes under certain conditions with the Compulsory Earthquake Insurance policy, to cover people's losses within the limits specified in the policy and thus to reduce the financial burden of the state.

**Table 1:** Compulsory Earthquake Insurance Comparative Data

	PREMIUM (2022) (\$)	PREMIUM (2023) (\$)	PREMIUM INCREASE RATE(%)	NUMBER OF POLICY (2022)	NUMBER OF POLICY (2023)	POLICY INCREASE RATE (%)
<b>January</b>	11.022.010	16.512.666	93,32	733.416	798.462	8,86
<b>February</b>	11.223.360	29.326.202	61,72	762.381	1.272.623	66,92
<b>March</b>	12.332.872	26.875.178	54,11	769.368	1.246.365	61,99
<b>April</b>	10.050.452	16.934.606	40,65	1.026.363	814.461	-20,64
<b>May</b>	8.868.538	16.607.001	46,59	561.509	850.896	51,53
<b>June</b>	11.996.682	13.034.785	7,96	1.183.677	808.353	-31,70
<b>July</b>	9.699.271	13.550.950	28,42	836.995	899.438	7,46
<b>August</b>	11.400.862	15.419.721	26,06	1.022.176	1.033.648	1,12
<b>September</b>	10.766.563	13.731.738	21,59	974.090	946.814	-2,80
<b>October</b>	10.412.390	12.970.445	19,72	917.838	908.849	-0,97
<b>November</b>	13.535.909	13.802.052	1,92	1.030.955	978.706	-5,06
<b>December</b>	22.518.983	14.853.871	-51,60	1.049.769	1.060.700	1,04

**Resource:** Insurance Association of Türkiye (IAT), <https://www.tsb.org.tr/en>

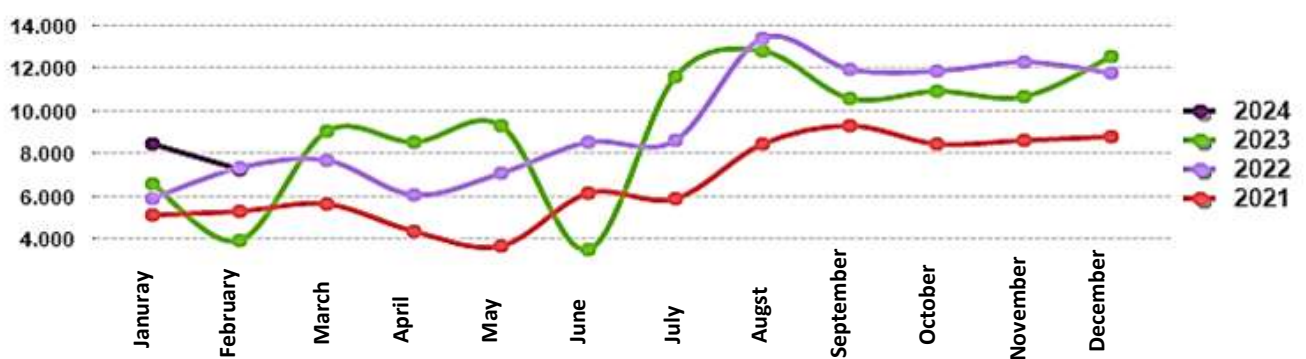
As of December 31, 2023, the CEI premium production increased by 3.84% compared to the same period in 2022, reaching 438,059,995 TURKISH Lira, while the current policy count witnessed an approximate 1.04% growth, totaling 1,060,700. According to information obtained from the official website of the TURKISH Catastrophe Insurance Pool (THE TCIP), the overall insurance rate in Türkiye is 57.50%, with the Marmara region having the highest insurance rate at 65.50%, and the lowest insurance rate observed in the Black Sea region at 46.10% (THE TCIP, Statistics, 2024).

**Table 2:** Insurance Rates in Earthquake Cities

Earthquake Cities	Insurance Rate (2019)	Insurance Rate (2020)	Insurance Rate (2021)	Insurance Rate (2022)	Insurance Rate (2023)
<b>Gaziantep</b>	%52,8	%54,9	%62,1	%64,0	%69,6
<b>Elazığ</b>	%34,6	%52,6	%55,2	%53,4	%67,5
<b>Kilis</b>	%48,4	%47,9	%55,0	%58,7	%67,2
<b>Malatya</b>	%37,6	%52,0	%53,7	%52,6	%62,4
<b>Osmaniye</b>	%38,3	%40,4	%43,4	%42,4	%62,0
<b>Adana</b>	%40,8	%44,7	%47,2	%45,7	%58,0
<b>Kahramanmaraş</b>	%45,5	%46,3	%48,1	%53,6	%55,6
<b>Adıyaman</b>	%43,6	%48,5	%49,0	%44,7	%46,6
<b>Şanlıurfa</b>	%40,1	%58,8	%60,9	%53,5	%46,1
<b>Diyarbakır</b>	%33,8	%36,1	%37,6	%33,4	%38,5
<b>Hatay</b>	%41,2	%42,7	%44,3	%40,2	%38,4

**Resource:** The TCIP, Annual Reports

The table provided in Table 2 illustrates that from 2019 to 2023, the highest rate of home insurance is observed in Gaziantep, while Hatay has the lowest rate. Despite this, it can be argued that the insurance rate is remarkably low in our country, where earthquake risk is high, and considering the painful losses caused by past earthquakes. This suggests that the awareness of insurance in our society is not sufficiently developed, and the importance of the situation is not fully understood. As an example of this situation, the number of policies in Kahramanmaraş and Hatay, where earthquakes are most intensely felt, is presented in Figures 1 and 2.

**Figure 1:** Number of Policies Written in Kahramanmaraş

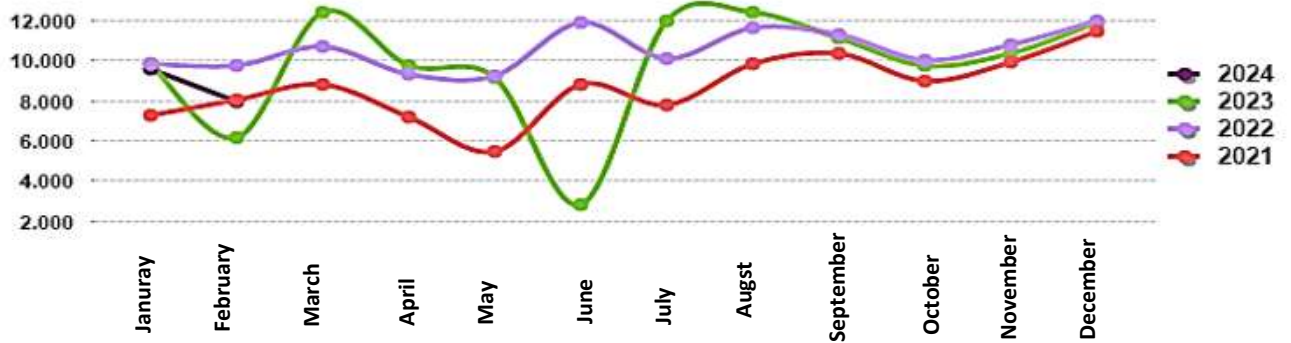


Figure 2: Number of Policies Written in Hatay

Looking at Figure 1 and Figure 2, which provide the number of policies for the provinces of Kahramanmaraş and Hatay, it can be observed that the policy count increased in the two months following the earthquake from April to June, followed by a rapid decline. This is believed to be due to the gradual dissipation of the earthquake's impact and the citizens' preference for cheaper policies when purchasing insurance (Anka, 2023). When examining other months, a consistent number of insurance policies are observed, in line with previous years, alongside the overall increase. There is a pressing need to enhance awareness of insurance among the public.

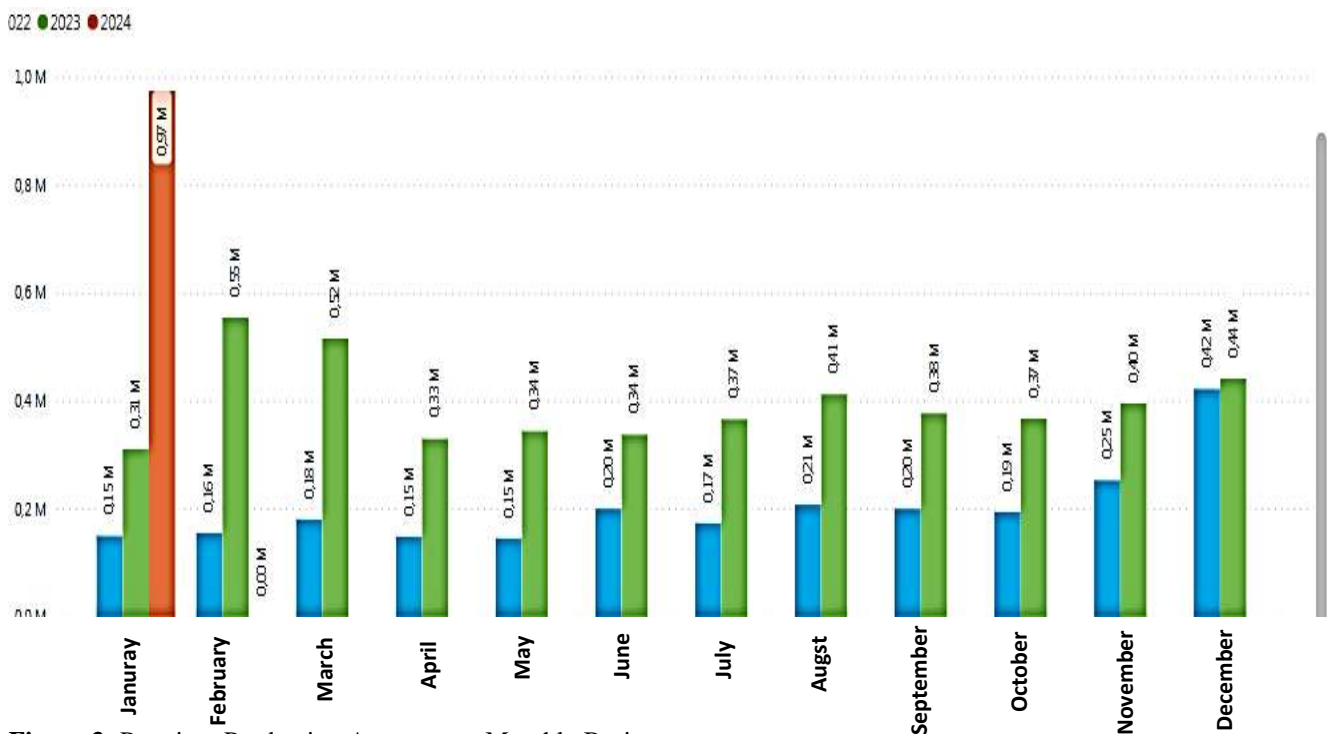


Figure 3: Premium Production Amounts on Monthly Basis

Resource: Insurance Association of Türkiye (IAT), <https://www.tsb.org.tr/en>

When examining the compulsory earthquake insurance premium production data for the years 2022 and 2023, it is observed that the premium production for February 2023 amounted to 554,224,179 Turkish Lira, while the premium production for the same month in 2022 was 155,203,357 TL. Within the year 2023, the highest premium production occurs in February and March, with fluctuations observed in the subsequent months. The increase in policy production following the earthquake on February 6 is indicative of a fluctuating trend in production one month after the earthquake, suggesting that as a society, the dimensions of the destruction caused by disasters and the resulting financial losses are quickly forgotten.

In the region with a total population of 14 million affected by the earthquake, the current number of policies under the compulsory earthquake insurance is 1,219,110. The TCIP has compensated a total of 600,000

residences under the CEI coverage. Despite being an inflationary country, the insured have rapidly accessed their policies, and damage Statements have been expedited (2024).

**Table 3:** Number of Policy

	NUMBER OF POLICY	
	01.01.2022-31.03.2022	01.01.2023-31.03.2023
<b>Disease/Health</b>	1.323.372	1.502.799
<b>Accident</b>	1.847.131	1.960.623
<b>Ground Vehicles</b>	1.626.228	1.725.212
<b>Air Vehicles</b>	201	234
<b>Water Tools</b>	6.651	7.144
<b>Transportation</b>	351.393	348.403
<b>Fire and Natural Disasters</b>	4.121.952	5.175.424
<b>General Damages</b>	1.623.650	3.680.397
<b>Agricultural Insurance</b>	1.290.597	1.288.287
<b>Land Vehicles Liability</b>	4.787.324	4.571.497
<b>KTK ZMS</b>	4.538.597	4.332.572
<b>Voluntary Financial Liability</b>	248.728	238.885
<b>Aircraft Liability</b>	199	112
<b>Watercraft Liability</b>	973	1.247
<b>General Liability</b>	147.939	136.924
<b>Credit</b>	-272	218
<b>Bail</b>	6.157	2.466
<b>Financial Losses</b>	23.000	36.012
<b>Legal Protection</b>	157.453	303.657

**Resource:** Insurance Association of Türkiye (IAT), <https://www.tsb.org.tr/en>

When examining the policy production data for the general branches for the period of January to March between the years 2022 and 2023, it is observed that the difference in production is notable. The policy count for the 1st quarter of 2022 was 17,313,950, whereas for the 1st quarter of 2023, it increased to 19,453,553. Before and after the earthquake on February 6, 2023, it can be observed that policy productions in each branch followed a positive upward trend compared to the same period in the previous year.

**Table 4:** Annual Premium Production Amounts

	2023/12	Share	2022/12	Share	Change	Real Change
<b>Compulsory Earthquake Insurance</b>	4.748.855.983	%1,10	2.427.770.095	%1,20	%95,60	%18,70
<b>Compulsory Earthquake Insurance</b>	12.131.505.772	%2,80	5.186.964.775	%2,50	%133,90	%41,90
<b>Fire Insurance</b>	46.443.126.756	%10,80	19.096.247.025	%9,40	%143,20	%47,60
<b>Kasko Insurance</b>	84.211.963.060	%19,60	44.514.428.282	%21,80	%89,20	%14,80
<b>Share Of Non-Life</b>		%19,60		%21,80		
<b>Share of Entire Business</b>		%17,33		%18,94		
<b>Fire Insurance</b>	46.443.126.756	%10,80	19.096.247.025	%9,35	%143,20	%47,60
<b>Share Of Non-Life</b>		%10,80		%9,35		
<b>Share Of Entire Business</b>		%9,55		%8,12		
<b>Compulsory Earthquake Insurance</b>	4.748.855.983	%1,10	2.427.770.095	%1,20	%95,60	%18,70
<b>Share Of Non-Life</b>		%1,10		%1,20		
<b>Share Of Entire Business</b>		%0,97		%1,03		
<b>Non-Life Total</b>	429.227.987.465	%88,30	204.140.328.876	%86,90	%110,30	%27,60
<b>Life Total</b>	56.692.469.008	%11,70	30.858.298.437	%13,10	%83,70	%11,50
<b>Entire Business Total</b>	485.920.456.472	%100	234.998.627.313	%100	%106,80	%25,50

**Resource:** Insurance Association of Türkiye (IAT), <https://www.tsb.org.tr/en>

When examining the policy production data for different branches between January and December of 2022 and 2023, the difference in production is apparent. In 2022, the total premium production for the sector was 234,998,627,313 TURKISH Lira, whereas in 2023, it increased to 485,920,456,472 Turkish Lira, indicating a growth rate of 106.80%. Specifically, under the Compulsory Earthquake Insurance coverage, the premium production in 2023 reached 4,748,855,983 TL, showing a 95.60% increase compared to 2022. However, the sector's share of premium production decreased from 1.03% to 0.97%.

Regarding the earthquake that occurred on February 6, 2023, the damage amounts incurred based on insurance branches are as follows:

**Table 5:** Amounts of Claims (Compensation)

Insurance Branch	Claims
Fire	2.882.199.792 \$
Engineering	292.655.381 \$
Profit Loss	550.286 \$
Kasko	111.887.123 \$
Personel Accident	10.496.385 \$
Transportation	128.092.292 \$
Life Insurance	45.387.224 \$
Other	1.793.730 \$
<b>Total</b>	<b>3.473.062.213 \$</b>

**Resource:** (NTV, 2024)

#### 4. Assessment and Conclusion

In our country, where the risk of earthquakes is high, the significance of not only Compulsory Earthquake Insurance but also other insurance branches is crucial for covering individuals' earthquake-related damages and reducing the financial burden on the state. When examining the insurance rate, it is evident that the importance of CEI is not adequately understood and valued by society. The increase in the insurance rate, prevention of underinsurance, and public awareness are areas where efforts by the Turkish Catastrophe Insurance Pool (The TCIP) and insurance companies in other branches can minimize potential damages from disasters.

The updated tariff of The TCIP as of January 1, 2024, and the introduction of inflation protection to new policies not only address the issue of outdated coverage but also play a vital role in preventing possible grievances. There is a positive relationship between the prevention of grievances and the increase in trust in The TCIP, contributing to a higher insurance rate.

The economic impact of the earthquake that occurred on February 6, 2023, was 105 billion dollars, and the insurance sector covered only 5% of this amount. As seen, the insurance rate remained considerably low.

While the rate of obtaining CEI throughout Türkiye was 53% at the end of 2022, it increased to 58% after the February 6 earthquake, but by the end of 2023, it had decreased to 57%.

To increase the insurance rate and raise awareness about insurance, a combination of compulsory and Voluntary insurances, simplification of policies, instilling insurance awareness in individuals through education and increased training on this subject, as well as incorporating insurance into school curricula, can be beneficial. It is considered essential to truly enforce Compulsory Earthquake Insurance to reach 100% and implement necessary sanctions to ensure no uninsured homes or workplaces remain.

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