



2023

KAHRAMANMARAŞ AND HATAY EARTHQUAKES REPORT



March 2023

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Road Transport

Short Term:

- Repair the damage to the road infrastructure.

Medium Term:

- Include EGM buildings in the definition of the buildings required to be utilized after the earthquake in the Building Earthquake Code of Türkiye, upgrade the building importance coefficients in the design of such buildings.

4.2.5 Communication

4.2.5.1 Pre-Earthquake Situation in the Region

As of 2021, there are 1,191,981 fixed telephone access lines and 12,002,276 mobile telephone subscribers in the 11 provinces in the earthquake-affected region. In terms of internet subscription, there are 2,004,473 fixed broadband internet subscribers and 10,488,915 mobile broadband subscribers. While the pre-earthquake rate of fixed telephone subscribers (number of subscribers in 100 persons) stands at 14.5% across Türkiye, this rate is around 8.6% in the earthquake-affected region. For the mobile subscriber rates, the national average is 101.9% while the average of the region is 86.4%. The key indicators for 2021 for the electronic communications sector in the earthquake-affected region are presented in the table below.

Table 41. Key Indicators for Electronic Communications Sector, by Province (2021)

	Number of Fixed Telephone Access Lines	Number of Mobile Phone Subscribers	Number of Fixed Broadband Internet Subscribers	Number of Mobile Broadband Subscribers	Fibre Optic Cable Length
Adana	223,688	2,264,528	439,737	1,970,465	10,459
Adıyaman	53,844	631,291	73,010	605,646	2,984
Diyarbakır	102,842	1,446,818	180,712	1,145,563	6,198
Elazığ	73,164	524,379	90,557	439,433	4,475
Gaziantep	187,299	1,866,506	376,784	1,627,258	7,651
Hatay	161,455	1,495,348	281,416	1,295,280	5,432
Kahramanmaraş	115,174	981,572	169,214	848,666	5,979
Kilis	14,215	169,305	28,185	145,276	1,021
Malatya	110,152	697,626	137,849	612,496	5,409
Osmaniye	49,969	444,550	85,330	406,044	2,569
Şanlıurfa	100,179	1,480,353	141,679	1,392,788	5,730
Regional Total	1,191,981	12,002,276	2,004,473	10,488,915	57,907
Türkiye	12,310,016	86,288,834	18,135,736	70,029,003	471,020

Source: ICTA

4.2.5.2 Damage Caused by Earthquake

Damage control efforts by public institutions and the private sector are underway, and the determined damage situation as of 06.03.2023 is as follows:

According to the information received by the Information and Communications Technologies Authority (ICTA) on the electronic communications infrastructure, there is a total estimated damage of 2.117 billion TRY, including 439 million TRY to operator devices at the exchange points,

272 million TRY to the network infrastructure, 1.275 million TRY to base stations, and 131 million TRY to end-user equipment. It is considered, however, that this estimate may only become clearer as the damage control efforts progress.

Damage assessment for the 2006 base stations in the region has not been completed. While the base stations on towers are mostly estimated to be undamaged or lightly damaged, damage control efforts are continued in the base stations that were built on collapsed buildings and in crowded areas of city centres.

It was reported that the Diyarbakır Yenişehir Regional Directorate Building of ICTA had been moderately damaged, but the costs are yet to be calculated.

According to the assessments, 8 of the 394 offices of PTT A.S. (Postal and Telegraph Corporation) in the region collapsed, 92 were severely damaged, 23 were moderately damaged, 207 were lightly damaged, and 50 were undamaged; the total damage cost is estimated at 1.3 billion TRY. Damage control efforts are ongoing in 14 offices.

94 TRT transmitting stations in the region are lightly damaged or undamaged, as they are small stations mostly built on mountainous areas. The total damage to the TRT Regional Directorate buildings and government housing units in Çukurova and Diyarbakır was reported to be at approximately 2 million TRY.

Table 42. Itemized Distribution of Assessed Damage in the Communications Sector

Ownership	Item	Unit	Quantity	Unit Cost (TRY/unit)	Cost (TRY)	Data Source
Public	PTT Office	m2	139,487	6,267	874,101,860	PTT
Public	Mail Processing and Distribution Centres	m2	63,350	4,078	258,358,570	PTT
Public	PTT Office Equipment	Piece	473	346,502	163,895,500	PTT
Public	Mail Processing and Distribution Centres	Piece	22	1,213,757	26,702,650	PTT
Public	Government Housing	m2	11,208	6,651	74,548,800	PTT
Public Total					1,397,607,380	
Private	Telecom Exchange Assemblies	Piece	367	1,195,175	438,629,136	ICTA
Private	Network	Piece	9,922	9,436	93,627,487	ICTA
Private	Network	km	15,212	139,641	178,619,100	ICTA
Private	Base Station	Piece	1,203	1,059,887	1,275,044,036	ICTA
Private	End-User Equipment	Piece	202,996	648	131,442,270	ICTA
Private Total					2,117,362,029	
Grand Total					3,514,969,409	

4.2.5.3 Post-Earthquake Actions

After the earthquake, a crisis table under AFAD was established by the Ministry of Transport and Infrastructure (MoTI) and the ICTA officials to coordinate the works related to the recovery of the communications infrastructure in the region. VSAT satellite communication terminals, mobile base stations, emergency communication vehicles and generators were delivered to the earthquake-affected region after the disaster.

Coordination efforts are carried out for the determination and repair of broken fibre connections, energy supply to and recommissioning of the base stations with service interruptions, and rebuilding mobile networks through mobile base stations. According to recent information, around 160 million TRY has been spent by operators to sustain the infrastructure.

The interruptions to mobile communication and internet services after the earthquake were primarily caused by the power outages in the earthquake-affected provinces. While mobile base stations were sent to the region, limited service could be delivered through generators that could

only provide an average of 3-4 hours of energy. With the decrease in energy outages, communication services began to be delivered for longer periods of time. Damage control and new investment planning efforts for base stations and fixed infrastructure are underway.

4.2.5.4 Long-Term Recovery Framework

Policies should be followed that aim to increase efficiency and competitiveness in the economy, and ensure the access of individuals to quality communication services at affordable prices.

A response plan should be drafted that follows the vision of diversifying nationwide communication infrastructure and prioritizes next-generation mobile infrastructure in which common infrastructure use is strengthened, number of tower-type base stations is increased, and in which base stations are built at points that were tested for earthquake resilience. In this context, it would be advantageous to explore new means of communication, including personal satellite communication, and begin their services in Türkiye. It is deemed important to establish a holistic structure in which 5G infrastructure are reinforced with fibre connections, accompanied by the fixed infrastructure, will serve at the backbone level and the mobile infrastructure will serve at the user level.

4.2.5.5 Needs Assessment

It is important to assess the need for support to the sector within the framework of concession contracts and authorizations, without imposing disproportionate financial burdens on the public, and by taking into account the fact that electronic communications services are delivered by the private sector.

Operators are not expected to undertake a rapid investment process in the provinces of the region. It would be beneficial to use public resources and ownerships with a new investment approach and by considering the sectoral competition, which is currently not strong, in order to overcome the shortcomings in the fiber infrastructure and to strengthen the mobile infrastructure.

Furthermore, current transfers may be introduced to the agenda in order to reduce service access costs at the user side.

In order to project the resources that will be required for the complete restoration of communication services, first, the damage to the infrastructure should be determined more clearly. Based on the existing data, the damage caused by the earthquake is valued at around 1.4 billion TRY in the public sector and 2.1 billion TRY in the private sector. Yet, it is known that there are regions where no damage control has been performed yet. Therefore, larger figures are envisaged in the more extensive damage control works that will be conducted in the upcoming period. In addition to the replacement of damaged infrastructure, new infrastructure investments will need to be made in the new regions that will be opened for settlement in the case that urban land development plans are renewed. In this context, based on sectoral experience, the total required resources are estimated to reach around 10 billion TRY, which is twice the amount for the damage assessed.

4.2.5.6 Policy Recommendations

Short Term:

- Review the damaged infrastructure in the region and ensuring uninterrupted and quality communication service delivery,
- Use the resources transferred from electronic communications operators to ICTA revenues to restore the broadband infrastructure in the affected areas,

- Explore the possibilities of next-generation base stations that are portable and may be less affected by earthquake,
- Make new investment plans based on the changing socio-economic and demographic conditions of the region.

Medium Term:

- In the medium term, evaluate communications infrastructure hand-in-hand with other infrastructure investments, and implement within the framework of a strategy. Arrangements such as shared facilities, permissions and right of access, etc., should be effectively implemented by ICTA in order to establish the infrastructure that will allow for fast and quality service delivery.
- An assessment should be made regarding the need of public funding for fibre infrastructure installations, and a support mechanism should be designated if required.
- The settlements to which service will be delivered as part of universal services should be re-designated with respects to the situation after the earthquake.
- Provide domestic base station equipment such as ULAK, ÇINAR and MILAT to electronic communications operators, at a reasonable profit level.
- Provide fibre infrastructure support in industrial zones
- Draft regional action plans that designate coordination and response mechanisms for public institutions and private operators to ensure continued communications during disasters

Long Term:

- Ensure that in the new authorizations to be made upon the termination of the concession contracts of operators, the clauses related to communication requirements in disasters and emergencies are set out in detail.
- Effective regulation should be ensured in the earthquake-affected region, as with the whole country.
- Make necessary regulations for broadband services delivered through low earth orbiting satellites, broadcasting through LEO satellites instead of VSAT after disasters,
- Develop a fibre support model, in line with the new land development plans for the relevant provinces, in order to ensure the delivery of the 5G infrastructure, which is expected to become available soon in Türkiye, in the earthquake-affected region as well.