International Labour Organization

The effects of the February 2023 earthquake on the labour market in Türkiye

ILO Office for Türkiye

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▶ Key messages

- 16.0% reduction in economic activity (hours of work).
- The reduction in activity is comparable to the hours of work done by 657,147 full-time equivalent workers.
- Reduction in activity is extremely uneven, it ranges from 0.1% in Adana to 58.8% in Malatya.
- It is estimated that 220,000 businesses are severely damaged and will be demolished.
- US$150 million reduction in labour income for every month insofar the situation continues.

Introduction

Summary of events. On February 6, 2023, in the early morning hours, the south-eastern provinces of Türkiye were hit by a major earthquake of 7.8 magnitude. Nine hours later the region was struck by a second quake of 7.5 magnitude, and, again, on February 20, another earthquake was felt of magnitude 6.4, this on affecting primarily the Defne district. The most-affected areas, which follow the south-eastern Anatolian fault line (figure 1), include a population of **14,021,280 people**[1] **and more than 1.5 million Syrian refugees**.[2] **More than 50,000 people were killed in the earthquakes and around 107,000 were injured**.

▶ **Figure 1. Earthquake epicentres**

Source: UNOSAT

Damages and displacement of affected people. According to an evaluation performed by the Ministry of Environment, Urbanization and Climate Change, **298,448 buildings[3], including 876,569 independent units, have been severely damaged and left unusable**, mostly in the 11 provinces where the state of emergency was declared.

In addition, according to TERRA[4], 3.3 million people have been displaced although such movement of people seem to have stabilized according to Facebook data. This will have massive impact on the labour market and economy.

[1] TurkStat.

[2] Presidency of Migration Management, July 2022 update.

[3] https://www.bloomberght.com/erdogan-deprem-bolgesinde-kullanilamaz-bina-sayisi-298-bin-2327290

[4] Türkiye Earthquakes Recovery and Reconstruction Assessment https://www.sbb.gov.tr/wp-content/uploads/2023/03/Turkiye-Recovery-and-Reconstruction-Assessment.pdf

The labour supply and labour demand dynamics in the region will be significantly altered due to life losses, injuries, damages on workplaces and internal displacement.

Current labour market impact

Overview

The labour market in the affected region consists of nearly **4 million workers**, mostly employed in **agriculture, manufacturing, trade and other, mostly low value-added, services,** according to the 2021 Household Labour Force Survey. The above figure also includes around 150,000 employers and more than 600,000 own-account workers. The earthquake has had a devastating impact on workers and businesses in these sectors.

Almost 220,000 workplaces[5] are no longer in use due to the earthquake effects. **Given such damages, the ILO estimates a 16.0 per cent loss in working hours in the affected areas in comparison with the hours worked in 2021. In the 11 provinces assessed, the hours of work lost are equivalent to the work done by 657,147 workers**. Based on the gender composition of employment in the area, 72.5 per cent of the total hours of work lost affected men and 27.5 per cent affected women. A similar assessment using the formal/informal composition of the workforce indicates that hours of work lost affected both informal (39.6 per cent) and formal (60.3 per cent) workers.

The interruption of economic activities and effects on livelihoods have resulted in income losses. The ILO estimates that the average affected worker will lose, **4,351 Turkish Lira (US$230.6) per month** as long as the situation continues.[6] Overall, the crisis is estimated to **reduce** the **take-home labour income of the affected region by more than 2,859 million Turkish lira (around US$150 million) per month.**

Province and district effects

The earthquakes have not affected all areas of these provinces equally. The residents of the districts that have experienced more damage in terms of collapsed or damaged buildings are also the ones who are expected to have more difficulties to work. This is due to three factors: **1) displacement from their district of usual residence, 2) losing homes and, thus, having more urgent needs to focus on[7]; and 3) workplaces may have been destroyed and cannot be used.** These three factors are taken into account at the district level when calculating the estimates provided in Figure 2.

Overall, the earthquakes have had a much greater impact on the local labour markets in four provinces: **Adıyaman (48.1% of pre-existing work-hours were lost due to the earthquake), Hatay (45.2%), Kahramanmaraş (43.1%) and Malatya (58.8%) (table 1).**

▶ **Table 1. Work hours lost as of March 5 2023 in relation to the baseline (2021), by province (%)**

Province	(%) Hours of work lost	Province	(%) Hours of work lost
Malatya	58.8 %	Gaziantep	5.5 %
Adıyaman	48.1 %	Elazığ	2.0 %
Hatay	45.2 %	Diyarbakır	0.7 %
Kahramanmaraş	43.1 %	Şanlıurfa	0.4 %

[5] According to government sources on February 22, 150,000 workplaces and 600,000 independent units were no longer usable. We have used the workplace to independent unit proportion to estimate the number of workplaces damaged.

[6] This is under the assumption that those formally employed will be receiving support, such as the short-time work allowance.

[7] Psychosocial support has been provided to 614,993 people in the affected region according to AFAD.

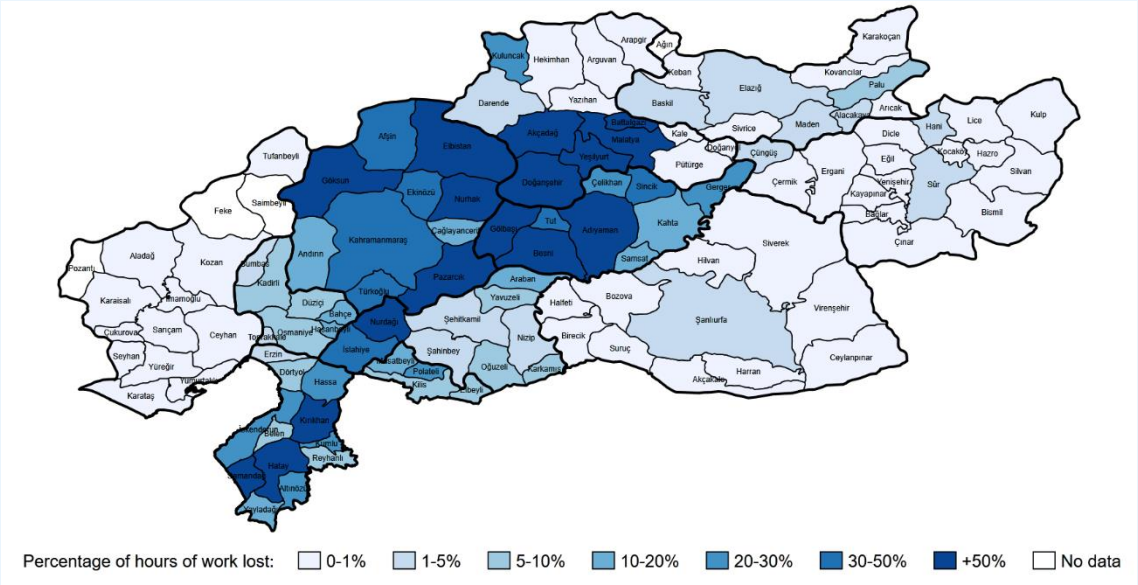
Kilis	6.7 %	Adana	0.1 %
Osmaniye	6.4 %		

Source: ILO estimates based on the population before the disaster (TÜİK), displacement data (Facebook), building damage assessment (T.C. Ministry of Environment, Urbanization and Climate Change) and the capital/non-capital status of the district.

Notes: The table reports the hours of work lost as a percentage of the pre-earthquake hours of work. Working hour losses should not be equated to workers being dismissed. Rather, these are workers who are presumed to be temporarily unable to work due to factors explained above. The percentages are calculated after adding up district-level estimates, see Figure 2.

In spite of the vast damages that occured in western districts of Gaziantep, the overall low level of impact on the labour market (estimated as a 5.5% loss in hours of work) reflects that most of its population is located in the central districts of Şehitkamil and Şahinbey, which were relatively unaffected.

▶ Figure 2. Percentage of hours of work lost by district



Source: ILO estimates based on the population before the disaster (TÜİK), displacement data (Facebook), building damage assessment (T.C. Ministry of Environment, Urbanization and Climate Change) and the capital/non-capital status of the district.

Notes: The percentages refer to the people living in the districts before the earthquake. Estimates are likely to increase when the damage assessment is finalized by the government. Three sources of hours of work lost are taken into account, migration from the district, destruction of houses coupled with a necessity to find another place within the district, and destruction of workplaces.

Other effects on the labour market

Aside from hours of work lost, the ILO warns about fundamental rights at work deficits. Occupational safety and health (OSH) is a main concern due to high volume of asbestos in the region. During the post-earthquake debris removal period, workers face significant OSH risks, including exposure to asbestos and injuries from falling debris, exposure to hazardous chemicals or gases, electrical hazards, and ergonomic risks. OSH needs also to be a priority during the reconstruction period.

Vulnerable groups such as people with disabilities, women, and young people may have a harder time recovering from the tragedy. Special attention would be required to avoid risks of discrimination in employment and occupation, especially for vulnerable groups.

The poverty and social insecurity faced by rural households increases the risk of resorting to child labour as a coping mechanism. Among the affected 11 provinces, Adıyaman, Şanlıurfa and Diyarbakır are being considered as sending provinces in terms of seasonal agricultural families/workers. These provinces send 66.9, 5.0 and 2.4 per cent of seasonal agricultural workers respectively. Lack of safe shelter opportunities and the postponement of school

openings increased the risk of child labour as significant portion of families are involved in migration for seasonal agricultural work.

On the other hand, considerable damage is reported regarding the labour market institutions. Three buildings of the Provincial Directorates of Public Employment Agency (ISKUR) in Adıyaman, Kahramanmaraş and Gaziantep-Şehitkamil are damaged heavily. This will seriously hamper the delivery of public employment services.

Social partners also reported heavy damages in their branch offices in the region. This will likely hinder their capacities to function and to respond to the needs of the workers.

This include civil servants who have left the earthquake region and may not be promptly replaced.

Comprehensive Recovery Strategy is Needed

A comprehensive and multidimensional recovery strategy needs to be developed and implemented in order to re-vitalise the labour market and create sustainable and decent jobs for all, in line with the macro-economic framework already developed in TERRA.

It is of great importance to provide decent job opportunities to all segments of society in the labour market of the region, taking into account the sectoral distribution and the groups, particularly women, youth and refugees, that require specific attention. The recovery and reconstruction strategy needs to consider creating green jobs and digitalization in line with the needs of the sectoral labour market in the provinces in question.

Apart from physical damages, the recovery strategy should address the effective resumption of labour market institutions as they will have a critical function in recovering the health of local labour markets.

Therefore, the ILO proposes a multi-dimensional strategy for a human-centred recovery in the labour market. The main components of this strategy are:

1. Conducting employment impact assessments and analysing the workforce and income losses

A thorough understanding of the effects of the earthquake including disaggregated data at the province/district level as well as by gender, nationality and age is required for an effective roll out of initiatives. In Türkiye official labour market information comes from the Household Labour Force Survey (TurkStat). However, information at the regional level for the affected area is not expected to be available before June 2024. Such information gap needs to be filled with alternative methods in collaboration with TurkStat.

An information management system that relies on three pillars is recommended. First by conducting standalone household surveys (both in previously existing houses and newly developed settlement areas), that would provide with an understanding on employment rates, poverty, impact on people and their living conditions. ISecondly by repeating the survey over time with the same individuals, which would provide knowledge on the effectiveness of policies being implemented in the area.

2. Supporting employment opportunities for all men and women through employment services, employment intensive infrastructure investments, provision of benefits and job placements

The government has announced the construction of nearly 200,000 residential units (i.e., flats). This is 43.3 per cent of all the new units sold in the country in 2021 for which, according the labour force survey, construction companies employed 1.77 million workers. Based on the current ratio of workers to units the ILO expects 766,000 construction sector jobs to be created in the area during the coming year. Such massive creation of jobs should be enough to bring full employment back to the area with possible caveats. First of all, the construction sector is known for hiring almost exclusively men. Second, a fast-track recovery and rebuilding efforts may result in multidimensional effects which may include inflationary pressure, sudden drops in labour demands (once the construction is advanced), possible exclusion of women and vulnerable group. The above less desirable effects can be addressed in the ongoing planning phase.

For example, cash for work and public works programmes could be considered. Focus could be given to people with disabilities, young people and women. A potential sector where it could be implemented is the care sector; due to the increase in the number of injured individuals and potential long-term disabilities there will be a need for care.

Temporary grants to study in local universities and programs to include students in the working life of the region will be key to prevent a brain drain from the area. Temporary research grants for researchers to work in local universities and provision of training adapted to local needs and in coordination with the authorities be developed.

3. Supporting enterprises for decent and sustainable job creation

Alternative scenarios such as the following could be considered:

a. Development of the region's touristic appeal. Support entrepreneurs willing to work in the hospitality sector to provide high quality services. Includes the provision of training to local employers on network development and marketing strategies. Tourism can be sustainable; it is more gender inclusive that the construction sector and provides opportunities for people with lower levels of education to join a career away from seasonal agriculture.

b. Support to manufacturing projects to increase the range of jobs available in the area after the initial construction phase is over. Provision of grants to entrepreneurs, creation of industrial areas with reduced taxation, creation of technological hubs that can absorb high-skilled professionals and creation of bonuses for hiring disfavored groups. The construction sector boom may be used to foster related manufacturing industries. Such development should be e tied to finding alternatives customers for it to be sustainable in the longer run.

4. Support and strengthen the capacity of labour administration and labour market institutions (MoLSS, social partners and labour inspection)

Coordination of activities with the labour inspection, the national employment agency and trade unions so as to provide mutual support and create synergies directed at increasing employment opportunities and improved working conditions.

5. Promoting fundamental principles and rights at work. This could be done by using all new technical cooperation projects to address identifiable needs in relation to the Fundamentals principles and rights at work including the OSH conventions which are part of the ILO Declaration on Fundamental Principles and Rights at Work adopted in 1998 and amended in 2022.

Appendix - Methodology

The number of workers affected and, thus, the hours of work lost due to the earthquake are calculated based on three factors expected to prevent people from performing their usual tasks at work. These three factors are the following:

1) Migration away from the district of usual residence. Since only 4.5 per cent of the workers in the region usually telework from home, it is assumed that displacements have prevented most people from performing their work duties.
2) Loss of their residence. It is assumed that in the short run, those who do not have a house will face difficulties working while they attend to urgent humanitarian needs.
3) Loss of their workplace. Since most people work face-to-face it is assumed that the loss of a workplace will be linked to the inability of its workers to carry out their usual tasks.

These three factors [8]may occur at the same time, possibly resulting in double counting. We have minimized this by developing a model where losses have an upper-bound equal to the total number of workers in the area as well as other controls explained below. Moreover, the number of workers in destroyed shops is likely to differ from urban to rural areas. Urban and rural coefficients are utilized to weight the impact, with a higher weight for urban areas. Finally, people did not migrate from all the region's districts. As such, factor 1 (migration) will only affect so-called migration districts. It should be noted that, in the short-run, it is assumed migrants will not be able to work elsewhere.

Model

The full model is shown in table 2 for each district. At the district level, hours lost are obtained by adding up losses from all three causes. At the regional level the number of hours of work lost is obtained by adding up 124 district-level losses.

▶ Table 2. Affected workers

	Causes of hours of work losses		
Type of district	**Migration (1)**	**Destruction of houses (2)**	**Destruction of workplaces (3)**
Sending & Urban	$M^P P E^R$	$(1-M^P)H(1-D^R)E^R$	$(1-M^P)(U^B B + U^E B)D^R$
Sending & Rural	$M^P P E^R$	$(1-M^P)H(1-D^R)E^R$	$(1-M^P)(R^B B + R^E B)D^R$
Receiving & Urban	0	$H(1-D^R)E^R$	$(U^B B + U^E B)D^R$
Receiving & Rural	0	$H(1-D^R)E^R$	$(R^B B + R^E B)D^R$

In table 2 the variable P refers to the pre-earthquake population, H to the number of homeless people and B to the number of unusable buildings.[9] Moreover, the employment rate (E^R), the rate of building damage (D^R), and the migration rate (M^P) are utilized. At last, two sets of parameters, U^B, U^E for urban areas and R^B, R^E for rural areas are used to estimate employment losses due to unutilized workplaces. The values for the parameters in urban areas are $U^B = 3, U^E = 1.5$, meaning we expect, on average, 1.5 businesses per building in urban areas (and, thus 1.5 employers lost their business on average) and 3 employees per business. The values in rural areas are $R^B = 1, R^E = 0.5$, meaning we expect, on average, half a business per building and 1 employee in rural areas.[10]

Overlapping effects and solutions.

It should be noted that if the whole population of a district were to migrate, losses of hours worked would be 0 in items 2 and 3 (the expression $1 - M^P$ would be 1-1=0) and losses would only come from item 1, migration. In addition, losses in hours worked from house destruction (item 2) would be 0 if all buildings within a district were to be eliminated; in this case, losses in hours worked would exclusively come from item 3 (and maybe 1, of course), as it is assumed all workplaces would be eliminated.

[8] A simpler model that only uses the destruction of workplaces could be used with similar *overall* results but would have negative effects on district-based estimates. By adding migration the model emphasizes employment losses in sending districts.

[9] The word unusable follows the government definition.

[10] Estimates from the LFS suggest that, on average, there are 2 employees per hospitality/trade business in the region.