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After the Kahramanmaraş
Earthquake



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In this article, I will not embark upon placing the responsibility for the disaster at the level of the morality of individuals, instead, I will act within and through an analysis that seeks the responsibility not in the individuals, but in the whole society, that is, us. The adoption of such an approach does not mean that identifying criminals is not important. Without a doubt, those who have violated the existing rules must pay the penalty they deserve.

If we look for responsibility in individuals and their morals, we cannot record any progress in our approach to the earthquake problem. However, if we look for responsibility in ourselves, determine what we have failed to achieve and seek solutions to them accordingly, we can bring new insights into our approach to the problem. Since we will take on such a route in this article, I will start with making some determinations about what we have failed to achieve so far.

Prof. Dr. İlhan Tekeli

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Preface

In the days we were preparing this issue for publication, Turkey (and Syria) was trying to recover from the destruction caused by the Kahramanmaraş-centered earthquakes on February 6, 2023. Experiencing one of the biggest earthquake disasters of the last century inevitably forced Turkey to face the bitter fact that nothing had changed after the 1999 Gölcük Earthquake. While trying to heal the wounds with civil solidarity on one hand, yet the disaster also created a possibility for us to discuss what we fundamentally need in order to live humanly in Turkey. In this context, as KA Academy Journal, we are happy to share with you Prof. Dr. İlhan Tekeli's article, "Examining the Validity of Türkiye's Earthquake Strategies and the Quest for Solution in the Wake of the Destruction of the Kahramanmaras-Centred Earthquakes in 2023", second piece of the series focusing on the earthquake and the subsequent reconstruction process.

Established in 2002 as a social enterprise aiming to contribute to the social development of Turkey, Development Workshop officially started its activities in 2004. We have been carrying out our activities for 19 years in line with the aims and objectives stated in the cooperative's by-law. KA Academy Journal, periodical of our organization which focuses on the themes in terms of the programs and projects implemented by the Development Workshop, issues academic articles in consideration of our target groups and gets published at times when it secures a resource of its own.

Ayşe Özsoy

Introduction

On February 6, 2023, Turkey was shaken by, and suffered enormous and painful losses due to two magnitude 7.7 and 7.6 earthquakes centred in Pazarcık and Elbistan districts of Kahramanmaraş. Looking back, there have been many such disasters since the great Erzincan earthquake in 1939, and new settlements were tried to be established after each of these disasters, ones that would not be affected by the earthquake according to the scientific knowledge of the time. After the 1939 earthquake, a modern city plan was prepared by Celal Ulusan for Erzurum. The buildings were kept low-rise in this plan. Afterwards, informative posters were hung in village cafes on how one should reinforce the adobe houses by placing beams¹ within their walls, to prevent them from collapsing in future disasters. These efforts could not provide a lasting solution and Erzincan was demolished again in 1992. Turkey rebuilt the city with the loans provided by the World Bank and in the best way possible according to the knowledge and technology of the time, but the story of disasters did not cease. With the Kocaeli and Düzce earthquakes in 1999, Turkey faced again great losses and pain. The demolished places were again tried to be rebuilt in the best way according to the knowledge and technology in hand. This time, Turkey focused on the issue more intently than in previous years. Earthquake regulations were changed, ready-mixed concrete and ribbed iron started to find use in buildings. Urban transformation laws were enacted, earthquake taxes were introduced, and new institutions were created for coping with disasters. An increase was scored in the academic researches on the issue of earthquake. A belief began to spread that the earthquakes of 1999 were a “Milestone”. The Kahramanmaraş

earthquakes showed us that such an optimism had no empirical basis and not much has changed in 24 years. Although less demolition in the buildings built after the 2000s was expected due to the changing regulations, their collapse rate was still high. This is the result which surprised the society the most. Furthermore, there was a significant decrease in the state’s post-earthquake aid effectiveness as compared to 1999.

Of course, after such a great disappointment, the society started to discuss how to cover the damages again. Looking at these, one can see that what has been done can be gathered in two groups. The first one focuses on the experiences along with the inadequacies encountered and spreads the sensitivity about the pain caused by the disaster. As a result, a widespread and deep awareness and high level of solidarity has emerged in Turkey. The second group of discussions focuses on identifying and punishing those responsible from the contractors to the governors. I think it would be worth elaborating on what it means to seek the responsibility for the disaster in the individuals and their moral weakness. If the society addresses the problem at the level of the individual’s morality, it means that it has no doubts about two issues. First, there is no lack of information in the society about how to act in the face of an earthquake risk. Second will be the assumption that the public is sufficiently informed about what are the institutions that should take part in this issue as well as how their members should behave. Only under these circumstances, it would be justified to blame individuals in the society. In this article, I will not embark upon placing the responsibility for the disaster at the level of the morality of individuals, instead, I will act within and through

¹ It is a kind of beam made of wood, brick or concrete which is placed horizontally inside the wall to distribute the weight horizontally and prevent vertical cracking of the walls.

an analysis that seeks the responsibility not in the individuals, but in the whole society, that is, us. The adoption of such an approach does not mean that identifying criminals is not important. Without a doubt, those who have violated the existing rules must pay the penalty they deserve.

If we look for responsibility in individuals and their morals, we cannot record any progress in our approach to the earthquake problem. However, if we look for responsibility in ourselves, determine what we have failed to achieve and seek solutions to them accordingly, we can bring new insights into our approach to the problem. Since we will take on such a route in this article, I will start with making some determinations about what we have failed to achieve so far.

- The first problem is this: Why cannot Turkey develop its capacity to produce solutions by taking lessons from its disaster experiences? This is what we should do as human beings capable of developing earthquake culture. However, this did not happen in Turkey. We could explain this situation by reference to the inadequate political culture, the adoption of elitist positions in the solution of the problem and the exclusion of the people in the search for a solution, the excessive centralization of the administration, the inadequacy of the bureaucracy, the lack of historical memory, the loss of transparency of the government in favour of the *raison d'état* and accordingly, the prevention of the dissemination of information throughout the society, or the making of bureaucracy on the basis of political loyalty concerns rather than merits. To make this question clearer, let's formulate it as follows: "Why do we deal with the things, as if the aim is not to achieve them but to go around bans?"

- Second problem is the adequacy of not only Turkey's level of contribution to the production of scientific knowledge and technology developed in this field in the world in order to solve the earthquake problem, but also its success of transforming this knowledge and technology into a country strategy of living with the earthquake.

The first problem is, of course, a very fundamental one. It requires a very comprehensive examination of the state and the politics in Turkey. However, in this article, it will suffice to draw attention to the importance of the problem without making any evaluation in this field. The main topic of the article is rather to question the adequacy of Turkey's relationship with the fields of science and technology while developing its strategy to live with the earthquake. To embark upon such a task, we first need to determine the content and scope of the earthquake problem.

1 The Scope of the Earthquake Problem and Its Dynamics

The earthquake problem begins with the movement of Earth's crust. If the magnitude of the earthquake is small and the structures and infrastructures at the scene are not damaged, no earthquake problem arises. As such, it ends as soon as it starts. But if the structures and infrastructures are destroyed and damaged, and there are casualties and injuries, it means that the earthquake has become an issue. The higher the magnitude of the earthquake, the closer the *epicentre*² is to the surface, the greater the damage and loss it causes. As the problems created by the earthquake grow, the intensity and level of the intervention also increase. The degree of these damages and loss can even reach the level that affects the economic performance of the country as a whole.

When an earthquake problem arises, regardless its size, the needs of the inhabitants of this settlement must be met as soon as they arise. But they are not static, they even constantly change as the disaster constantly renews the needs. Therefore, those tasked with responding to the earthquake have to meet different needs. This constant change brings along with it also the change of who should be the actor providing the solution. A preliminary phasing can be introduced to picture the nature of this change.

When the earthquake problem arises:

- **In the first phase**, it is obligatory to start the rescue operation without any delay, providing drinking water, nutrition, sanitary facilities, and other basic life needs.
- **In the second stage comes** comes the accommodation requirement that arises due to building collapse as well as the fact that the people cannot enter the remaining buildings due to the ongoing aftershocks. This period, which is often called the “tent city stage”, is characterized by the attempts to meet deficiencies rooted in the collapse of basic infrastructure such as commu-

nication, natural gas, electricity etc., as well as by the initiation to create a new infrastructure for health services.

- **In the third stage** the solutions produced in the second stage are transformed and made sustainable until permanent solutions are secured. This stage is generally referred to as the transition from tent settlements to container settlements.
- **The fourth stage** is the provision of a permanent solution.

The main feature of this four-stage process is the necessity to act quickly. But the speed required in the first stage is not the same as that in the last stage. In the first stage, it is almost a race against time, since it is a question of minimizing the loss of life. To be able to win this competition, it is worth remembering that the preparations made in advance by the institutions in charge are of special importance. As we move on to the next stages, the amount of resources needed to be mobilized for the solutions to be effective increases. The number and diversity of those who need to show solidarity and make sacrifices increases and spreads to the whole society. In this article, I will not dwell on all stages of the earthquake problem. I will only evaluate/examine the last stage where the permanent solution is produced. At this stage, we need to act with common sense regarding the speed of the search for solutions and their implementations, and thus, we must find a way to provide sufficient time to those who will develop the solution and prepare the plans. To secure such time without turning haste into permanent mistakes, it is necessary to make sure that the quality of life provided in the third stage is at a sufficient level. In other words, the high quality of the services to be provided in the third stage will reduce the time constraints in making the fourth-stage decisions.

² Earthquake Focal Point: The point on the ground, just above the place where the underground fault broke as a result of an earthquake.

2 An Inquiry into the Level of Scientific Knowledge Used in Reaching Permanent Solutions of Earthquake-related Problems and the Adequacy of Using This Knowledge in Reaching Strategic Selections

There are three academic fields that are directly related to the replanning of the settlements that experienced a disaster. These are:

1. Geosciences that examine the movements of the earth's crust and try to predict its future,
2. Architecture and civil engineering that design the structures and infrastructures in a settlement and provides the construction of the projects,
3. Urban and regional planning areas/disciplines that plan how the settlement projects should be carried through.

It can be said that, in none of these three areas, Turkey does have a significant problem in terms of contributing to and using the scientific knowledge and technology that the world has produced until now. There are enough capable earth scientists in Turkey who produce the necessary scientific knowledge in the field of earth sciences. A similar situation is true for architects, engineers, and urban and regional planners. Therefore, we cannot say that there is insufficient capacity for knowledge production, design development and project preparation. Claims of inadequacy generally focus on two issues: The **first** is the inadequacy of existing knowledge, technologies and their capacities to develop strategic choices for permanent solutions. The **second** is the problems related to a part of the contracting sector that ensures the implementation of the prepared plans and projects.

Turkey's construction sector has a dual structure. Its developed part obtains contracts from all around the world and delivers finished projects to the employer after successfully carrying them out. This part of the contracting sector is strong and competes successfully in the world. Turkey ranks second among the countries with the highest number of companies in the global list of successful contracting companies. However, there is a second part of the sector called "build-and-sell", which suffers from limited financial resources while large in number. Cities that suffered disasters have been built by these weak build-and-sell contractors. Their inadequacies were exposed recently by the experiences of February 2023. This is an important issue in itself but we will not address it at length in this article. In this article, we will confine ourselves particularly with the inadequacies in making strategic choices for the development of long-term permanent solutions. Two topics in particular will be discussed to illustrate these inadequacies. These are:

1. How should the economic dimension be taken into account in the development of permanent solutions?
2. How can the capacity and support of the society become part of the solution?

Let's start with the examination of these five topics with regards to strategic choices concerning permanent solutions to the earthquake problem.

2.1 What Are the Contributions and Limitations of Geoscientists' Findings regarding Permanent Solution Strategies?

According to geoscientists, the Earth's crust is made up of plates and that the S-waves, that arise when the accumulated energies of these moving plates are released through their frictions, lead to earthquakes and thus the destruction of buildings. These earthquakes create fault lines/cracks in the earth. Geoscientists, who research these faults and draw their maps, can predict whereabouts and approximate magnitude of a potential earthquake on earth. Still, when the earthquake will occur remains uncertain. After long historical observations, namely with the knowledge of how many years of accumulation it takes for a fault line to break, we can only make predictions whether the re-breaking of an active fault line is far or close.

The knowledge provided by geoscience studies indicates a very clear strategic choice. If we know the place and not the time of the earthquake, the way to avoid it is to move away from the old settlement and establish the new settlement in a place with no earthquake risk. This is what is rational at first glance. However, this strategic choice is often not implemented for practical reasons, and in practice, most of the cities are rebuilt where they were destroyed. Among many reasons behind it, one is the fact that the property owners in the destroyed city do not usually want to move away from the old city as they want to benefit from the values of their lands. Generally, cities are not destroyed as a whole. The buildings that did not collapse have passed an important test and have shown that they are solid. Leaving the city completely and building it at a new point are very likely to drastically increase the cost. Often there are no resources to cover it. In addition, the attempts to establish a new city leaving the old are not successful either. City dwellers are loyal to their old city and refuse to go to a new place. For instance, after the 1999 earthquake, such an initiative was attempted in Düzce, yet it shortly after proved unsuccessful as the people did not adapt to the new location.

There are also other reasons for a new settlement in Turkey to be built on the site of the destroyed city. The areas with earthquake risk throughout the country make up 70 percent of the country and the number of known faults increases with new studies, and that in turn brings about also an increase in the rate of risky places in new earthquake risks maps. As a result, due to the existing vision of Turkey's settlement order and the logic behind this vision, it becomes impossible to establish new permanent solution strategy on the logic of displacement. Another reason for not abandoning the damaged areas is related to the fact that the interval for the fault lines' breaking is around 250 years. That means that if an earthquake leads to building collapse, the risk of new earthquakes in the same area decreases for around 250 years. This period is much longer than the economic lifespan of the buildings built in the city. In this case, it becomes economically feasible to erect the city in its old place.

After every large-scale earthquake disaster in Turkey, geoscientists complain that the government does not take adequate precautions although they have predicted the forthcoming earthquake. Before making a judgment about the irresponsibility/insensitivity of the state, we need to carefully examine the matter. Due to a number of particular factors including low probability of the reported risk, long-term & resource-intensive transformation nature of the measures to be taken as well as the uncertainty of their success, along with the fact that the political authority is elected for five-year terms, a geoscientist's such statement as "There is a risk of an earthquake here" is not enough to alarm the administrators. Put it shortly, buildings with the risk of collapsing and those that need to be demolished in a city should naturally be determined and demolished. After all, this is a concrete intervention, but the field works carried out show that there are many buildings that need to be strengthened in order not to collapse in an earthquake. It is necessary to implement the measures to be found out by researches on how these buildings should be strengthened. On the other hand, eart-

hquake experience reveals that such interventions often do not yield positive results. In short, there is a significant uncertainty in this regard. There is no need to prolong this discussion here. In any case, it is necessary here to be aware of the fact that the nature of the risk reported and the offered solution being not feasible and productive have also a high share in managers not assuming the responsibility expected from them.

Once it turns out that the strategic choice reached by geoscience studies to initiate new constructions in places where there is no earthquake risk is not applied for various practical reasons, it is necessary to seek the decisive strategic choice in the preferences of architects and civil engineers regarding urban structures to be built. This shift in focus creates a new demand for geoscientists, namely microzonation studies. Fault line passing through a place does not make that place uninhabitable in any way. In the earthquake regulations of different countries, there are rules about how many meters can be approached to a fault line. In the photographs taken after the earthquake, the fault lines and the nearby solid buildings are seen together. The damage assessments made after the earthquake reveal that a significant part of the buildings collapses due to ground problems and insufficient foundations even though they are well constructed. For places destroyed by the earthquake to be reconstructed, geologists and geophysicists should carry out microzonation studies in those areas. For example, the regulations in Iran necessitates to carry out microzonation studies as a necessary step for city plans.

2.2. On the Nature of the Strategic Preferences Developed by Civil Engineering and Architecture for the Permanent Solution of the Earthquake Problem

The basic strategic determination of those who design architecture and civil engineering of buildings

to be built after an earthquake disaster in a city is formulated as “Earthquake does not kill, building does”. This determination does invalidate the strategic choice of geoscientists not to reconstruct in an earthquake-prone area and to change the settlement area. Those responsible for the design of the buildings claim that they have the capacity to construct buildings that will endure the earthquake once they are given acceleration and ground conditions of the earthquake approaching. This reduces permanent solution of the earthquake problem to a very simple either-or solution which reads “either do not construct buildings to be demolished or construct buildings that will not be demolished”.

In order to ensure construction of a building that will not be demolished, the practitioners of this discipline develop regulations and supervision processes to keep the construction process under control. For this reason, supervision of the competence in design and project planning processes as well as the procedure on how to issue building permits are regulated at the outset. They decide what kind of ground surveys should be done in order for the design of a structure to be sufficient, and accordingly, test the adequacy of the foundation system proposed in the design on the basis of the data obtained throughout these surveys. For example, if the ground surveys detects a liquefied soil, it is required to drive piles into the ground to consolidate it, and to build a raft-general on it. An adequate design and engineering project is a prerequisite for the construction of a building that will not collapse, but it is not sufficient on its own. Adequate implementation of the project should also be ensured. For this aim, the existing regulations determine how the construction process should be supervised by independent control firms. The quality of ready-mixed concrete, ribbed iron and other similar materials likely to be used is determined to ensure the durability of the structure. After the building is completed and inspected by the local bureaucracy of development, a residence permit is issued. From this point of view, Turkey’s earthquake and building regulations are generally sufficient. The problem arises from the fact that it is implemented by the government and

contractors not to ensure everyone's safety but rather "to get around the bans". How should the performance of the public bureaucracy be questioned? No serious progress has been made in this regard.

Today, only one of the possible ways to build an indestructible structure is emphasized. It concerns the building gaining an indestructible quality particularly by increasing their rigidity/durability. In particular, the ones aimed to be indestructible are reinforced concrete constructions. We could say that this is an expensive way to ensure indestructibility, whereas there are also cheaper alternatives. For example, we can try to ensure indestructibility not by increasing the rigidity of the structures, but by increasing their flexibility. The flexibility of the half-timbered construction system used in the Balkans and Anatolia in the past is an interesting and successful example in this regard. It is also a cheaper solution than producing a solution with rigid buildings. This type of construction has lost its prevalence today. The reason for this disappearance is not its failure to withstand earthquakes. Half-timbered houses of İzmir have successfully survived major earthquakes. In the face of increasing land prices in Turkey's rapid urbanization, the middle classes have become unable to house on a single parcel, that is, on a parcel with a single owner. When the residences on a single parcel started to turn into multi-storey apartments within the scope of the ownership principle of the property law, the half-timbered constructions disappeared after proving no longer able to meet the new need.

As a result, we should not confine ourselves to single-channel solutions while rebuilding destroyed parts of a city after an earthquake. We need to keep in mind that it is possible to use more than one building procurement format in developing indestructible housing. For example, earthquake isolator systems used in rigid buildings have also verified the approach for solution in allowing building motion in the earthquakes.

2.3. On the Nature of the Strategic Preferences of City and Regional Planners in Planning New Settlements as a Permanent Solution to the Earthquake Problem

The quality of the third occupational group, which plays a role in the production of permanent solutions following the earthquake, is different from the first two groups. The professions in the first two groups are separate disciplines. These disciplines have produced two very different strategic choices. The field of city and regional planning is not an individual discipline but an interdisciplinary field of activity. Members of this profession prepare the plan of the new settlement expected to be permanent in the period after the earthquake. For this reason, they try to create highest quality of life by fully applying the urban planning approach of their field by taking contributions of the other earthquake-related disciplines as well. In such an approach, there is no room either for hasty solutions or for tolerating lower quality of life. If there are errors in the existing urban planning and implementation practices, they should be avoided. The necessity for such an attitude stems from the fact that what is aimed at will become a permanent solution.

For this, while initiating a planning process in earthquake-affected areas, the city planners not only carry out microzonation studies in those places and contribute to the realization of the urban physical structures within the process stipulated by the newly developed regulations, but also try to create an adequate "network of public areas" in the city by including sufficient earthquake assembly areas in this network. In one word, they make up for the shortcomings of the city, which necessarily also include preparing new development regulations specific to the new plan prepared for that city.

Those from the field of City and Regional Planning know that in order to implement the development

plan prepared for the city, it is necessary to prepare development regulations specific to that plan. However, there is a strange practice in this regard in Turkey as its central institutions are trying to implement a single set of development regulations throughout the country. We can see this situation as a disaster in terms of its consequences as it makes all the newly built urban areas of the country similar to each other, which brings in turn loss of identity in the cities. For this reason, cities' search for identity in today's Turkey is reduced to protecting their historical regions. On the contrary, if separate regulations are implemented in each city, the way will open up for new areas of the cities to develop with a particular identity. Therefore, this article recommends not to repeat this mistake when a re-planning is initiated in a city in the period after the earthquake.

2.4. How to Tie Economic Development of the Country with Permanent and Long-Term Solutions?

Considering, with a modernist logic, the solution of constructing buildings that do not collapse in an earthquake in terms of a single-channel approach means nothing but actually offering a very expensive solution that cannot be supported by the national economy and the reality of income distribution within the country. The national income level of Turkey is not at the middle level and there is clearly a large income inequality. No one can defend uniform solutions in such a country. Those who want to develop the technology of making indestructible buildings in Turkey should propose more than one way for this at different costs. This is possible, given that even within the scope of this article I was able to point out the possibility of more than one rigid and flexible solution. Other than the reinforced concrete construction, we can also propose wood and steel construction alternatives. All of these can be translated, in the context of Turkey, into different forms of providing hous-

ing and regulations at different costs. If diversifying the ways to construct indestructible buildings suitable for the affordability of different income groups would be sufficiently ensured, the possibilities both to develop cities with different identities and to solve some other crises in urban life before they arise will also expand.

Even though the financial issues with such monotonous solutions can be solved in one way or another during the construction phase, I will examine what kind of crises they create in the long run through the example of *gecekondu* (squatter houses in Turkey). Politics in Turkey has not adequately grasped the economic functions of the *gecekondu* phenomenon in society, and thus, has not been able to relate to it in a creative way. No matter if it was converted into four-storey build-and-sell apartments with the development improvement plans prepared particularly during the Motherland Party period, or into multi-storey apartments with the urban transformation projects carried out during the AK Party period, the construction of monotonous apartments presented itself as a solution to squatter houses. This has been a relatively expensive way of delivering a solution in terms of both providing houses as well as ensuring their earthquake resistance. Financial means have been provided for the realization of these solutions in one way or another, but the inconsistency of this solution with the country's economy manifested itself, after a certain period of time, as a rent crisis during the 2022 economic crisis. In this period, rent increases were also very high, as houses became expensive everywhere. As low-income people can no longer find affordable housing, they either leave the cities they populated for the cities with cheaper rents or are obliged to rent a room instead of a whole house. If the slums had not been demolished or if cheap solutions had been used to rehabilitate them, however, such a crisis would not have arisen. In order for the solutions to be compatible with the economy, solutions with multiple and varying costs need to be developed, putting aside the existing singular and all-encompassing approach.

2.5. How Centrally Driven Bureaucratic Modernist Quests for Solution to the Issues of Earthquake Disable Societal Capacity for Solidarity?

In the analysis of earthquake problems and the quest for solutions in Turkey, modernist attitudes and the prevalent approach of extremely centralized administration largely disallow for utilizing solidarity capacities of the society in the solutions to be reached. The government usually considers what shall be done after the earthquake as a benevolence of the state. They want people not only to be content with their fate without questioning the officials, but also be grateful to the state for the service necessarily provided. The 6 February 2023 earthquakes in Turkey provided another example of this. The central government took time to take action after the earthquake, causing the loss of valuable hours in terms of saving lives. On the other hand, the public, non-governmental organizations, and local governments have shown an extraordinary capacity for solidarity. Many of the positive results achieved have been achieved through their efforts. Under such circumstances, one may normally expect from the central government to encourage such contributions of the society for benefiting from their potential as much as possible. However, the central government in Turkey has attempted to associate all the work done directly with its own sphere of authority. The efforts of the central government to keep everything under its own control have led to a huge performance loss and democracy deficits.

However, in crises experienced in such large areas, the quest to deliver solutions through a single centre by keeping everything under the control causes a significant loss of time, sending away the right forms of intervention, and thus, limiting solutions to the creativity level of that centre with significant performance losses due to the inability to produce sufficient diversity. In such a crisis period, however, the centre's management

should be put in use specifically to ensure the operation of the decision system and to pave the way for the local management initiatives to cover the entire disaster area in a decentralized manner and strengthened as much as possible by external and local civil participation. Such a decision system will be able to produce much more diverse decisions that bring locally appropriate solutions to the problems, and thus, time losses in interventions will also decrease. The centre will make the administrative decisions supporting the operation of this system, meet the resource needs, and ensure the operation of the logistics system at the country level. Such a system will not only have an increased performance in solving earthquake problems, but also it will create, if at all, less democracy deficit.

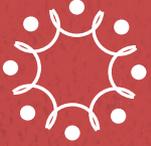
The implementation of the management approach proposed in the first three stages of the four-stage earthquake problem solving process as we have discussed thus far will not allow the society to remain outside the solutions produced. Now let's take the fourth stage, namely, let's examine what our strategic choice should be for the production and implementation of a permanent solution. The fourth stage is qualitatively different from the first three stages. Since the settlement plan to be prepared at this stage will be permanent, there should be no rushing as every mistake on that ground will also be permanent. It should rather be carried out in a fashion as close to the normal processes as possible, in accordance with the principles of urbanism. In today's urban making practices, a city plan prepared behind the closed doors, with elitist arguments, and as a fait accompli for the citizens, cannot be considered legitimate. Normally, the city plan should be prepared with the participation of the public. This participation should not be excluded from the plan preparation in the fourth stage arguing that there is an urgent need of the rapid solution for the earthquake problems. Despite the time constraints, there are ways to planning that do not preclude participation and openness.

3 Choosing the Strategic Preferences for the Replanning of a City Devastated by the Earthquake

Finally, we have come to the end of the article which aims to dwell on the nature of Turkey's earthquake problem exhibited lastly on 6 February 2023 by Pazarcık and Elbistan-centred two devastating earthquakes with magnitudes of 7.7 and 7.6. The focus of this inquiry has been the Turkey's quest for solutions, approaches to scientific knowledge throughout this and the strategic choices that have been developed accordingly. In concluding such an article, it would be appropriate to summarize the strategic preferences determined throughout this inquiry and to be used in future urban planning studies to be produced in the fourth stage of dealing with the earthquake:

- The first strategic decision suggested that the new planning will be done in the destroyed old city. Before planning, a comprehensive microzoning survey needs to be carried out in the area. In the absence of a microzoning study and ground surveys in adequate quantity, no planning decision could be made and approved by the relevant authorities.
- The second important strategic decision is to ensure the construction of the buildings that will not collapse in an earthquake. For this to happen, regulations should be implemented in real terms, that is, to get results. For this, asymmetric multiple control channels should be created to eliminate the practice of getting around and thus bypassing the bans. The most important strategic decision reached in this article is to multiply the ways to construct buildings that will not collapse in a disaster, with varying cost for each. This, in turn, principally requires the elimination of the existing single form of building supply and developing different building regulations.
- The third strategic decision is to save the new city plan, in consideration of its intended permanency, from causing permanent errors as a result of a hasty attitude to be adopted on the basis of the earthquake emergency. While being prepared in a sensitive way to the earthquake problems and risks, the new plan will also take decisions to improve the quality of urban life while remaining sensitive to the globally accepted principles of urbanism. A strategic choice necessary to emphasize in this respect is the need to prepare separate building regulations for the planning processes in different cities. This will also preclude the spread of the uniformity of the building stock in a city for the reason/pretext of responding to earthquake-related problems.
- The fourth strategic decision is, in order to be able to restructure a city in accordance with its economic structure (patterns of income inequality), to diversify the construction processes (forms of provision) of buildings that will not collapse, and accordingly, to prepare new city plans and regulations in a way that will facilitate this diversity.
- The fifth strategic decision is that new plans in the earthquake zones should not be prepared, on the grounds of time constraints, through non-transparent processes and in a way that excludes the society. If necessary, alternative ways of participation should be developed in order to meet the time requirements.

And finally, these strategic choices should always remain open to improvement and development as they are implemented.



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