

Is the Management of Tehran Disaster through Designated Auxiliary Provinces Scientific and Practical?

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Following the earthquake in different regions of Iran in 2017, the consequences of the earthquake in Tehran metropolitan area and how it is going to be managed has been the topic of scientific, political, and media talks as well as a conversation topic among the general public. Meanwhile, the use of the auxiliary provinces approach in response to disasters (earthquake in particular) in Tehran that had previously been suggested received renewed attention.

Although this method which is based on the use of resources and facilities of neighboring provinces, basically seems to be a suitable and useful solution, there are drawbacks to implementing it.

The idea of using auxiliary provinces for disaster response in Tehran dates back to the middle of the 20s. For example, based on the information available in 2006, the map of the divisions of Tehran among the auxiliary and successor provinces was developed and published (**Figure 1**). Obviously, in the new division that has been revealed in January 2018, the 2006 map and its divisions have not been used, yet.

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Given the missions and responsibilities that have been delegated to the designated auxiliary provinces, it appears that the operations of the response phase including search and rescue, and relief are also among the missions of the auxiliary provinces.

It appears that the determination of auxiliary provinces A and B was mainly based on the geographical neighborhood rather than the area size of the relief-receiving province. For example, because Isfahan province shares geographical borders with more provinces, it has a larger number of auxiliary provinces compared to some other provinces such as Kermanshah, North Khorasan, or Azerbaijan. In January 2018, however, another type of auxiliary provinces has been developed for Tehran. According to the Interior Minister, for each of the 22 districts of Tehran, a province has been determined as an auxiliary province.

For example, District 3 of Tehran was delegated to Hamadan Province, District 4 to Markazi Province, District 6 to Sistan and Balouchestan Province, District 9 to Qazvin Province, District 10 to Ardabil Province, District 11 to West Azerbaijan Province, District 14 to Yazd Province, District 16 to Mazandaran Province, and District 18 to Khuzestan Province, and so on.

In introducing this new version of the auxiliary provinces for Tehran districts, the Interior Minister also said: "we coordinated with the mayor of Tehran to provide a suitable space for all the provinces in these areas in order to create shelter and store equipment and facilities for rapid deployment, so that in the conditions where help is needed, they will be able to respond within the smallest and the least time, and some exercise was also planned in this regard".

While determining the auxiliary provinces for neighboring provinces is generally appropriate and necessary, the geographical assignment of provinces or their cities among auxiliary provinces, as proposed for Tehran, is neither scientific nor practical.

However, we need to point out that our discussion here does not address the methodology of the division and technical-executive problems raised in this regard. For example, some argue

about the appropriateness and capability of the assigned provinces for the districts that have been delegated to them, and they are trying to show that the needs of the district delegated to the province in the event of a disaster are far more than the province's ability. Similarly some experts argue raise questions about the inaccessibility of some districts delegated to some provinces. For example, District 3 of Tehran has been delegated to Hamadan province, and it is argued that because the city entrance and exit roads in the early hours are likely to be congested or the traffic will slow down, it will be very difficult for provincial forces to arrive at the District immediately. Although, these and many other points should be taken into account, this letter addresses the approach in principal and the problems that it will bring about. In other words, even with the assumption that the above mentioned defects can be resolved, this approach remains inefficient and problematic.

Two basic and major problems with this approach are briefly discussed below: The first problem arises from the complexity of the disaster management system. The suggested plan means that the disaster management system, which in itself should be very simple, will become far more complicated. For example, according to this approach, in 22 municipal districts of Tehran, 22 provinces each with at least 20 to 30 provincial organizations will start taking action. This means that a very complicated mechanism will govern disaster management, which is very difficult to coordinate quickly when a disaster occurs. Basically, the Incident Command System (ICS) or Incident Management System (IMS) has been suggested to resolve this complexity in disaster management (1). In this system, all forces, regardless of where they have come from, are assigned to the operational and non-operational units (logistics, administrative, planning, or financial) in which they have specialized, instead of being allocated to a particular location beforehand. They are then allocated depending on the needs to geographic spaces (districts) that are in more need of that type of operations and resources. In Iran, this system is well known, and

our experts have also used it properly in the past, and it is better to use this system here as well.

Another problem with this approach is that this kind of division eliminates the need for the flexibility that is most needed in disaster situations. Basically, one of the benefits of the IMS or ICS is its vertical-horizontal flexibility (2). Imagine that only some municipal districts of Tehran are affected by an earthquake and a lot of damage has occurred. With respect to the way in which the districts are divided among the provinces, does this mean that only the provinces whose respective districts have been damaged should start taking action? Also, assume that the damage situation is such that the affected districts have been delegated, to provinces that are far from the Capital or are relatively less capable. Will other provinces, in spite of being able to arrive faster and having more capabilities and resources, concentrate on the district delegated to them?

We know well that this division will inevitably change in the real situation and will be replaced by something that the Incident Command System or Incident Management System suggest, but the difference is that a great deal of time will be lost before the situation will become clear for auxiliary provinces.

References

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However, based on the IMS, as soon as the resources arrive to Tehran and regardless of which province they are from, missions in the areas most in need, based on rapid assessments, are assigned to them proportionately regardless of their province and geographical regions. Therefore, instead of dividing provincial resources to different districts, it is recommended that provincial resources are distributed based on a pre-defined and coordinated IMS so that they can be designed and deployed for the level of disaster. For this to be effective, plans need to be developed, exercised, and coordinated accordingly.

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Authors' contribution

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