



TURKISH COURT OF ACCOUNTS

ACTIVITIES OF THE MINISTRY OF PUBLIC WORKS AND SETTLEMENT

IN THE AFTERMATH OF MARMARA AND DUZCE EARTHQUAKES





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ABBREVIATIONS

DGDA	Directorate General of Disaster Affairs
EIB	European Investment Bank
MPWS	Ministry of Public Works and Settlement
GIS	Geographical Information System
ASB	Aid to self-builders
HL	Housing loan
PA	Project Advisor
PIU	Project Implementation Unit
PMU	Project Management Unit
ISASF	Incentive for Social Assistance and Solidarity Fund
TRI	Directorate General of Technical Research and Implementation
MIS	Management Information System
DGBA	Directorate General of Building Affairs

Summary and Recommendations

Summary

1. In 1999, 7.4 and 7.2 magnitude earthquakes struck Eastern Marmara Region of Turkey. In these earthquakes, 18.243 citizens lost their lives with injuries to another 48.901 people, and 376.379 dwelling units and workplaces were damaged according to 1999 data of Prime Ministry Crisis Management Center. Public institutions and organizations charged with implementing activities in the aftermath of Marmara and Duzce earthquakes initiated immediately the restructuring activities at the region. The institution responsible for fulfilling a significant part of these activities is the Ministry of Public Works and Settlement (MPWS).
2. In this report, we seek for the answers of two main questions in order to assess MPWS's activities after Marmara and Duzce earthquakes. Initially, whether there is a convenient environment for effective implementation of activities and then, whether activities are carried out in line with needs are examined.
3. MPWS establishes various organizations at disaster regions after every disaster based on its scale. In order to carry out effective and efficient activities at Marmara regions in the aftermath of 17 August earthquake, MPWS established "Marmara Earthquake Region General Coordinatorship of Disaster Restoration" affiliated to it and "Project Management Unit" for construction of houses financed by external credits after 17 August earthquake. However, duties have overlapped and responsibilities have become ambiguous since the duties, authorities and responsibilities of newly established organizations as well as existing ones both in center and at regions were not clearly set. Ambiguity in authorities and

responsibilities affects adversely the conduct of activities in parallel with accountability and transparency principles and makes coordination difficult. (p. 1.3, 2.5, 2.6)

4. There are a number of institutions and organizations tasked for activities carried out after Marmara and Duzce earthquakes. Attaining optimum results depends on effective coordination and cooperation among all institutions and organizations. Since this could not be achieved, institutions affected each other's activities negatively. (p. 2.7, 2.8)
5. Accountability refers to obligation of those endowed with resources and authorities to demonstrate how these resources and authorities are used. For the good operation of accountability processes, there is a need for tools safeguarding transparency. Activities of MPWS after Marmara and Duzce earthquakes were not carried out in line with principles of accountability and transparency. (p. 2.9, 2.10, 2.18)
6. For execution of activities according to accountability and transparency principles, how expected results can be achieved should be planned; objectives and targets should be clearly set; expectations, responsibilities and authorities should be clarified through negotiation; progresses should be monitored and obtained results should be evaluated and reported. To do all these, there should be a comprehensive management information system. Although activities have not been carried out within this framework, there are positive steps taken towards specification of objectives and targets and development of management information system. (p. 2.11- 2.17)
7. Senior managers are accountable vis-à-vis Parliament for resources allocated to them. To ensure that senior managers fulfill their responsibilities, the Turkish Court of Accounts (TCA) should inform Parliament concerning whether resources are used effectively, efficiently and economically and in line with the aims of the Parliament through reporting. Accordingly, audit area and mandate of the Turkish Court of Accounts should not be limited. It would not be possible to report independently,

objectively and reliably on the extent to which entrusted authorities and allocated resources were well utilized, if the audit area and mandate of TCA were limited. Therefore, limitations introduced with the intention to reduce bureaucracy and to facilitate operations damage transparency and accountability leading to greater problems. Big amount of public resource was used within the scope of activities carried out at earthquake regions. Procedures and audit of expenditures were rearranged by issuance of statutory decrees. (p. 2.18- 2.24)

8. The first activity of MPWS after earthquake was damage assessment. Successful designation of rightful beneficiaries, temporary and permanent housing activities depends on the results of this study being accurate and sound. Damage assessment activities were launched on 25.08.1999. 1200 technical staff was assigned for damage assessment. Within 20 days, 334 business and dwelling units were assessed followed by a time period granted to beneficiaries for objection. Since Duzce earthquake occurred on 12.11.1999 when objections were about to assessed and decided on and this earthquake affected the whole area, reclamation period was extended. According to final results; 112.724 dwelling units and work places were either demolished or severely damaged; 124.131 dwelling units and workplaces suffered moderate damage and 139.524 dwelling units and workplaces were less damaged. (p.3.2- 3.5)
9. There were a great number of objections to results of damage assessments and considerable part of these objections was justified in the second assessments, which indicate that first assessments were not sound and did not reflect realities. Although Duzce earthquake might have an effect on the results of damage assessment, a significant number of inexperienced and insufficiently trained personnel as well as inadequacy of criteria and forms for damage assessments considerably affected the results. (p.3.6- 3.10)
10. According to current legal arrangements, owners of buildings found to be suffering either moderate damage or severe damage or demolished are regarded as beneficiaries. According to

decision taken with this regard, restoration credit of 2 billion TL was granted to owners of houses with moderate damage, and 1 billion TL to owners of workplaces; either housing credit or newly constructed houses was given to owners of houses demolished or collapsed. (p.3.11)

- 11.** As in the case of damage assessment, activities for detecting beneficiaries were not carried out by adequate number of technical staff who had sufficiently trained beforehand. Since owners of more than one dwelling unit are regarded beneficiary only for one dwelling unit, data concerning property and occupation of houses must be reliable. (p.3.12, 3.13)
- 12.** As of 27.10.2000, MPWS detected 107.315 dwelling units to be damaged moderately. 59.533 owners of dwelling units with moderate damaged laid their claims and filed a letter of undertaking to benefit from housing credit; however, 53.955 of them became beneficiaries. 2 billion TL of payment for each beneficiaries was planned to be affected totaling 107.9 trillion TL. (p.3.14)
- 13.** Limited with restoration of houses with moderate damage, MPWS granted 900 real and legal persons certificate of Interim Project Advisor for a period of two years. In the circular issued by MPWS with regard to Project Consultancy Temporary Implementation Principles, it was notified that individuals who were to reinforce their houses with moderate damage were obliged to have their reinforcement and restoration projects prepared, checked and approved by Project Advisor. Project consultancy system is not a new system in Turkey. The Implementing Regulation on Project Control Consultancy was published in Official Journal dated 10.12.1992; but not enforced. Although the circular and the implementing regulation cover similar arrangements, there are significant differences. The implementing regulation entrusts PAs with the control and approval authority on behalf of administration. According to arrangements introduced with the circular; persons who prepare, check, approve, carry out works according to project (contractor) and control the compliance of work with project (technical

officer) can be the same real and legal persons. Authorization of single person with all duties and powers made controls almost ineffective. (p.3.15-3.21)

- 14.** Although responsibility and authority is given to PA with regard to restoration of houses with moderate damage; the power to issue construction license and certificate of occupancy of municipalities still persists. Workload of municipalities has increased due to restoration works of moderate damaged buildings. That most of the damaged buildings are illegal and unlicensed has increased workload still more since these buildings should not be granted construction license and occupancy permit even though they are damaged. Municipalities do not have sufficient number of technical staff for fulfillment of all these works, which hampers achievement of optimum results. (p.3.22, 3.23)
- 15.** With the aim of moving people in tents to more healthy places before harsh winter conditions; MPWS decided to open a tender for 30 m² prefabricated houses and awarded contract to 25 firms for prefabricated houses, cost of which amounted to 1.5 billion TL including their sub-basements expenses. Number of prefabricated houses constructed by firms is 31.393, which does not include 11.521 pre-fabricated houses that were donated. The financial burden of 44.433 prefabricated houses to MPWS is 166 trillion TL in total. (p.3.24, 3.25, 3.27)
- 16.** Construction of prefabricated houses was carried out according to methods and procedures approved by the Ministry as per the arrangements introduced by the statutory decree no: 574 and outside the scope of the Public Procurement Law no: 2886. Obtaining expected results from a tender procedure depends on the conduct of tender in line with principles of competition and openness. Tender for prefabricated houses was announced by means of official journal and was open to everyone, which complies with these principles. However, the location, amount of the work and according to which criteria tenderers would be selected were not specified, which contradicts these principles. (p.3.26)

17. MPWS targeted to finalize the construction of prefabricated houses by 30.11.1999 and to deliver to needers. However, temporary houses could not be finished on projected date. As of 31.12.1999, approximately 80 per cent of houses were finished, but only 50 per cent of houses could be turned over to needers. Although all houses were finished in March 2000, full occupation of prefabricated houses at the region was after breaking the tent camps at the beginning of the second winter. There are two main reasons for failure in achieving objectives set for prefabricated houses. The construction of temporary houses was delayed by the infrastructure works that could not be finished within the planned period. The second reason is that people living at tent camps did not want to move to prefabricated houses (since 100 TL rent allowance paid to them would be cut). (p.3.28)
18. Approximately 30 per cent of people domiciles at prefabricated temporary houses are beneficiaries as their houses were heavily or moderately damaged. There is no information regarding the number of tenants. No policy exists to solve permanent housing problem of those in this circumstance either. Moreover, future use of superstructures and infrastructures of prefabricated houses is not planned. Since policies considering the needs of all residents at the region are not developed, it is highly possible that temporary prefabricated houses will turn into permanent houses. (p.3.29)
19. There are three options offered to beneficiaries whose houses collapsed or demolished at Marmara and Duzce earthquakes with regard to permanent house. The first option was Aid to Self Builders, whereby beneficiaries can receive 6 billion TL aid on condition that they construct their houses on their own lands. In the second option, beneficiaries could choose to receive Housing Loan which is 6 billion TL provided that they buy a finished house. Third option was the grant of permanent houses to be constructed by the state. 18739 beneficiaries received Aid to Self Builders and Housing Loan and 39.370 beneficiaries chose the permanent houses. However, since the number of

beneficiaries was changed due to objections and court decisions, MPWS planned to build 41.403 permanent houses. The responsibility for construction of permanent houses was shared between MPWS and Prime Ministry PIU. Financing of a significant part of permanent houses was obtained through external credit. According to plans of MPWS, 15.118 out of 41,403 houses would be constructed by Prime Ministry PIU, 23.711 houses by MPWS and 2574 houses by donations. Out of 15.118 houses to be constructed by PIU, for 12.068 houses the World Bank credit and for 3.050 houses European Investment Bank credit was obtained. MPWS planned to construct 15.502 houses with credit from European Council Development Bank and 7650 houses with national resources. Additionally, 559 finished houses were purchased from Emlak Bank for beneficiaries in Istanbul. (p.3.30- 3.33)

- 20.** MPWS conducted tender procedures of permanent houses according to procedures and methods deemed appropriate by the Ministry. Tender open also to international firms was deployed on turn-key basis and by sealed proposal. MPWS calculated the turnkey cost of 23.110 houses totalling 12 billion TL (according to April 2000 change rate, equal to 20000 \$) and awarded contract to 52 firms in return for 224 trillion TL. With the discounts, cost of one house decreased to 9.6 billion TL, excluding infrastructure costs. However, as per Decree of the Council of Ministers No: 2001/2862 and dated 12.06.2001, payment of extra over price for temporary houses tendered on turn-key basis increased expenses approximately 21,1 trillion TL. (p.3.34- 3.40)
- 21.** MPWS projected that houses would be constructed within 150 calendar days after handing over the land to contractors. According to this plan, houses must have been finished in November and December 2000. However, construction of houses was not completed within the given period due to time extensions granted to contractors for various reasons. Time extensions were the results of delay in expropriation operations, construction of infrastructure and in progress payments. 33 per cent of houses planned to be finished in November and

December 2000 could not be turned over by September 2001. (p. 3.37)

22. MPWS awarded contract of consultancy, controlling and engineering services to five companies in return for 6.175 trillion TL. Cost of 43.603 houses (including 2200 houses tendered in June 2001) to be turned over to beneficiaries who had chosen to benefit from permanent house option approximated to 1.4 quadrillion TL. It can be said that excluding personnel and administrative expenses, as of September 2001 approximate 1.5 quadrillion TL expenses shall be made for permanent houses when considered the payment of 84 trillion to be made to 14.066 beneficiaries having chosen the Aid to Self-builders option together with 28 Trillion TL paid to 4.673 persons wanted to benefit from Housing Loan. (p.3.35- 3.39)

23. Sizes and qualities of houses constructed by MPWS and the Prime Ministry PIU are different. MPWS decided on building 99 m² houses cost of which is 20 thousand Dollars according to April 2000 exchange rates, while Prime ministry PIU agreed on 80 m² houses the cost of which is 14 thousands Dollars excluding infrastructure costs. As two different institutions, MPWS and Prime Ministry PIU, were held responsible for the construction of permanent houses, houses were constructed with different costs and sizes; namely, unequal options were presented to beneficiaries. (p.3.41)

Recommendations

- A) Accountability and transparency are the two fundamental concepts of modern public management. Successful execution of activities depends on compliance with these principles. Therefore;
 1. **Clear-cut targets should be set.** Objectives and targets related to activities implemented should be set clearly, comprehensibly and measurably within the scope of a strategic plan.
 2. **Authorities, duties and responsibilities should be determined clearly.** How to reach set targets, what type of results are intended

to be obtained, who will be responsible for what, who will use which authorities and resources should be determined through commitment of all parties. There should be guidelines directing those authorized and responsible on how to fulfill their duties and these guidelines should be regularly updated. How inter-institutional cooperation and coordination shall be ensured should be clearly and comprehensibly designated.

3. **There should be a Management Information System that assists in taking accurate decisions and corrective measures, when necessary.** For monitoring activities, timely assessing the extent to which targets have been achieved, and credibly reporting obtained results; a comprehensive management information system should be established, which is appropriate for combining activity-cost data and based on up-to-date, accurate and valid data.
 4. **Coordination and cooperation among relevant institutions, organizations and units should be maintained.** There are a great number of institutions and organizations in public sector, which are responsible for achievement of optimum results. In order to ensure that their individual activities would not affect each other adversely, stakeholders that have different roles should come together within the framework of accountability principle and designate clearly what kind of results are desired to be obtained, who will be responsible for what in obtaining these results through mutual understanding; and an effective cooperation should be ensured.
 5. **No area should be excluded from audit scope of TCA.** Senior managers are accountable vis-à-vis parliament that entrust authority to and allocate resource for them. Audit is the most important factor that strengthens accountability. Fulfillment of this accountability depends on TCA's reporting to Parliament, which informs parliament regarding whether resources are used effectively, efficiency and economically as well as according to objectives of the parliament through its audits. Therefore, audit area and authorities of TCA should not be limited.
- B)** In order to carry out damage assessment, determination of beneficiaries, restoration of buildings with moderate damage and

activities regarding temporary and permanent housing after earthquake according to necessities;

6. **Necessary measures should be taken for execution of damage assessment and designation of beneficiaries properly and within the shortest time.** Sufficient number of technical personnel that are to carry out damage assessment activities and designate beneficiaries should be trained beforehand. Damage assessment criteria and forms should be developed in such a way that accurate results can be obtained.
7. **Legislation and organizational structure should be aligned to Compulsory Earthquake Insurance.** Adoption of the Law on Compulsory Earthquake Insurance requires redefinition of functions of MPWS related to post-earthquake activities such as damage assessment and designation of beneficiaries. The Ministry's organizational structure and legislation related to these activities should be aligned with Compulsory Earthquake Insurance.
8. **Necessary attention should be attached to restoration and reinforcement of moderate damaged buildings.** Since restoration and reinforcement of damaged buildings requires special arrangements for their design, issuance of license and inspections on construction phases. Acceptable risk levels and economical limits for restoration and reinforcement should be put forward clearly.
9. **Temporary and permanent sheltering possibilities provided to earthquake victims should be grounded on need analysis and cost comparisons.** When decisions are taken with regard to temporary and permanent housing, expectations of needers should be considered and options of different quality should not be offered.
10. **Future use of superstructure and infrastructure of temporary houses should be clearly determined.** Considering rental costs of lands used for prefabricated houses; how and when prefabricated houses will be evacuated and how superstructures and infrastructures will be used should be planned as soon as possible.

- 11. Openness and competition should be ensured in procurement procedures of temporary and permanent housing.** Construction, consultancy, engineering and inspection services of houses should be based on predefined procurement principles and procedures so as to secure openness and competition. Openness and competition which are indispensable concepts at tender must be maintained beyond any doubt. Transparency ensured during tendering procedure is at the same time important in the prevention of abuse of public resource and power.

- 12. Construction of houses should be completed without overrun cost and time extensions.** House construction activities should be handled within the framework of resource planning; targets should be set within a plan, and houses should be completed without overrun costs and time extensions.

Background

- 1.1** Turkey suffers frequently from disasters due to its geological structure and geographical conditions. 65 per cent of disaster-caused damages in the last 60 years are associated with earthquakes. According to data obtained from MPWS, 25 destructive earthquakes above 6 magnitude occurred in 1939-1999, and 75.000 people lost their lives during these earthquakes.

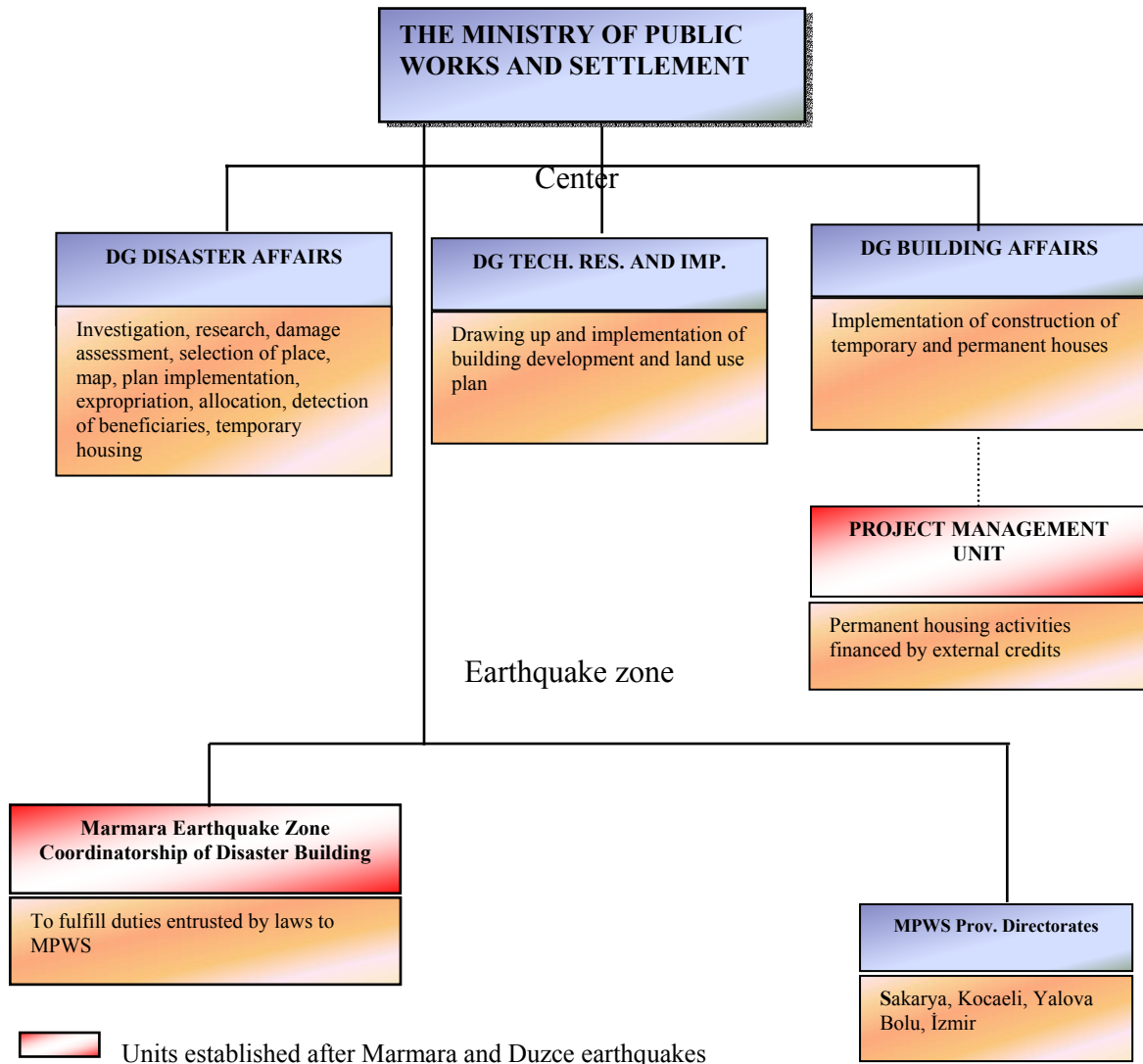


- 1.2** In 1999, earthquakes measuring 7.4 and 7.2 magnitude hit Sakarya, Kocaeli, Yalova, Bolu and Istanbul provinces. During these earthquakes that stroke Marmara region on 17 August 1999 and Duzce on 12 November 1999, 18.243 people lost their lives with injuries to another 48.901 people and 376.379 dwelling units and workplaces were damaged. Marmara and Duzce earthquakes not only affected provinces within the region but also country's social and economic life. After mentioned earthquakes, our community showed full awareness for remedying earthquake damages within the shortest time and relieving earthquake victims. Reconstruction activities were started immediately. Post-earthquake restructuring

activities are carried out under the responsibility of the Ministry of Public Works and Settlement (MPWS).

1.3 MPWS fulfills this duty via Directorate General of Building Affairs (DGBA), Directorate General of Disaster Affairs (DGDA) and Directorate General of Technical Research and Implementation (TRI) at center and at provinces by moderate of Public Works and Settlement Directorates. MPWS carries out activities related to damage assessment, beneficiaries, selection of place, temporary and permanent housing after Marmara and Duzce earthquakes with the organization structure illustrated in Figure 1:

Figure 1: Organization Chart of MPWS after Marmara and Duzce earthquakes



In the aftermath of each disaster, MPWS establishes different organizational structures according to the severity of the disaster in order to handle disaster services in rapid succession implement and finalized them in a coordinated manner. After Marmara and Duzce earthquakes, in order to fulfill duties entrusted to MPWS with the Law on Measures and State Aids for Disasters Affecting the Public No: 7269 and other laws, to enforce its authorities and to act actively and effectively, MPWS established “Disaster Affairs General Coordinatorship of Marmara Region Earthquake”. Established for a period of two years and centered at Kocaeli province, the coordinatorship functions under the Ministry. General Directorate of State Highways affiliated to MPWS as well as General Directorate of Iller Bank associated to MPWS are involved in post-disaster restructuring activities. Besides, for construction of permanent houses, within MPWS, a Project Management Unit (PMU) was established and construction of houses under the supervision of this unit was decided.

- 1.4** With the Statutory Decree on Compulsory Earthquake Insurance No: 587 and dated 25.11.1999, new arrangements were introduced related to MPWS’s activities on damage assessment, detection of beneficiaries and permanent housing. Affected by this development, organizational structure of MPWS was changed. Redefinition of duties, authorities and responsibilities of MPWS in mentioned fields of activity as well as necessity for alignment of legislation with the relevant law was put on the agenda.
- 1.5** As a result of damage assessments conducted by 1200 technical staff after Marmara and Duzce earthquakes, it was detected that 327.871 dwelling units and 48.508 workplaces in total were damaged. 96.785 of damaged houses were either collapsed or heavily damaged; 107.315 with moderate damaged and further 123.771 houses with light damage. Through detecting beneficiaries after damage assessment activities, it was determined that owners of demolished or heavily damaged buildings would be granted housing loan, and 53.955 of owners of buildings suffering moderate damage would be granted restoration loan. State aid amounted to 600 million TL per dwelling was made to owners of houses with

light damage from Incentive for Social Assistance and Solidarity Fund with the help of Governorship.

- 1.6** People that owned collapsed or severely damaged houses were considered as beneficiaries, who were offered three options by the Ministry: Permanent House, Aid to Self-Builders (ASB) and Housing Loan (HL). Those preferred ASB and HL options receive 6 billion TL credit. The permanent houses will be turned over to beneficiaries through debiting them in return for credits opened on cost value. As of September 2001, 39.370 people became beneficiaries for permanent houses, 14.066 person for ASB and 4.673 persons for HL. 107.5 trillion TL was allocated for financing permanent housing and external financing was obtained as well. 2.574 dwellings by donation, 12.068 dwellings by *World Bank Credit*, 15.502 dwellings by *European Council Development Bank* credit, 3.050 dwelling by *European Investment Bank* (EIB), 7.650 dwellings were planned to be constructed by internal resources (appropriation allocated to budget). It was agreed that dwellings to be constructed by World Bank and EIB credits would be under the supervision of Project Implementation Unit, which was newly established within the Prime Ministry. Houses financed by European Council Development Bank would be constructed under the responsibility of Project Management Unit (PMU) established within MPWS.
- 1.7** To respond temporary sheltering needs of earthquake victims, totally 43.454 prefabricated houses were built, 11.521 of which were donated. Infrastructure of all and superstructures of 31.933 prefabricated houses were built by MPWS, the cost of which amounted to approximately 166 trillion TL. 127 trillion of this expense was covered from central aid fund opened at Ziraat Bank (state bank) where national and foreign aid are kept and remaining part from money allocated to Disaster Fund.
- 1.8** Expenditures to be made with national and foreign aids were not subjected to Law on General Accounting No:1050, Public Procurement Law No:2886 and TCA Law No:832 with the Statutory Decrees. Audit of these expenditures is carried out by a

commission composed of two inspectors from Prime Ministry and the Ministry of Finance and one Sworn Bank Examiner.

Scope and Methodology

1.9 This study assesses the performance of the Ministry of Public Works and Settlement in the aftermath of Marmara and Duzce earthquakes. In the examination, the question “**How well are post-earthquake activities carried out?**” was used as a frame.

1.10 Activities of MPWS related to damage assessment, detection of beneficiaries, restoration of moderately damaged houses, temporary and permanent housing after Marmara and Duzce earthquakes are covered within the scope of the audit. Selection and expropriation of lands for temporary and permanent houses; prefabricated temporary houses manufactured by Directorate General of Disaster Affairs and used after earthquake; prefabricated social facilities at temporary settlement areas (such as schools, kindergartens, health centers, laundries, mosques, etc) and other temporary sheltering possibilities are not included in the scope of the study. Temporary and permanent houses constructed by the Prime Ministry PIU with the financing from World Bank and those donated are not included either. Permanent houses constructed by PIU were examined to be used as a benchmark in assessing permanent housing activities of MPWS.

1.11 Effectiveness of MPWS’s activities after Marmara and Duzce earthquakes are evaluated under two parts: *In the first part*, so as to evaluate whether there is a convenient environment for execution of activities in the aftermath of Marmara and Duzce earthquakes, it was examined whether;

- ☞ There were overlapping authorities, duties and responsibilities in the implementation of activities and an effective coordination was established;
- ☞ An effective inter-institutional cooperation was established or not;
- ☞ Activities were carried out in accordance with principles of accountability and transparency.

In the second part; so as to evaluate whether activities after Marmara and Duzce earthquakes were implemented in line with necessities;

- ☞ Damage assessment,
- ☞ Detection of beneficiaries,
- ☞ Restoration and reinforcement of buildings suffering moderate damage,
- ☞ Temporary housing,
- ☞ Permanent housing activities were examined.

1.12 On site examinations were made at Yalova, Kocaeli and Sakarya provinces. It was assumed that with the examinations made at these provinces, it was possible to obtain results representing general situation.

Reasons for selecting these provinces are as follows:

- These provinces cover areas that suffered the most damage during earthquake.
- 77.3 per cent of prefabricated houses for temporary sheltering and 74.2 per cent of permanent houses were in these provinces.

1.13 To understand whether competition and openness was ensured during tenders, files covering 30 per cent of temporary and permanent house tendering procedures were analyzed. 45 files that constitute 5 per cent of 900 authorization documents issued were selected and examined through random sampling with a view to understanding whether Project Consultancy Companies authorized in the restoration and reinforcement of buildings with moderate damage met the conditions provided for in the implementing regulation.

1.14 People with whom interviews were made, institutions, resources of which were utilized, together with the institutions audited are listed in Annex 1.

PART 2

Is there a convenient environment for effective implementation of activities?

- 2.1** This part of the report surveys;
- whether authorities, duties and responsibilities were overlapped and an effective coordination was established in damage assessment, detection of beneficiaries, temporary and permanent housing activities in the aftermath of Marmara and Duzce earthquakes;
 - whether a sound cooperation and coordination was established among institutions responsible for various activities;
 - to the extent to which activities were in line with modern public management principles.

Is there any problem regarding intra-organizational authority and coordination?

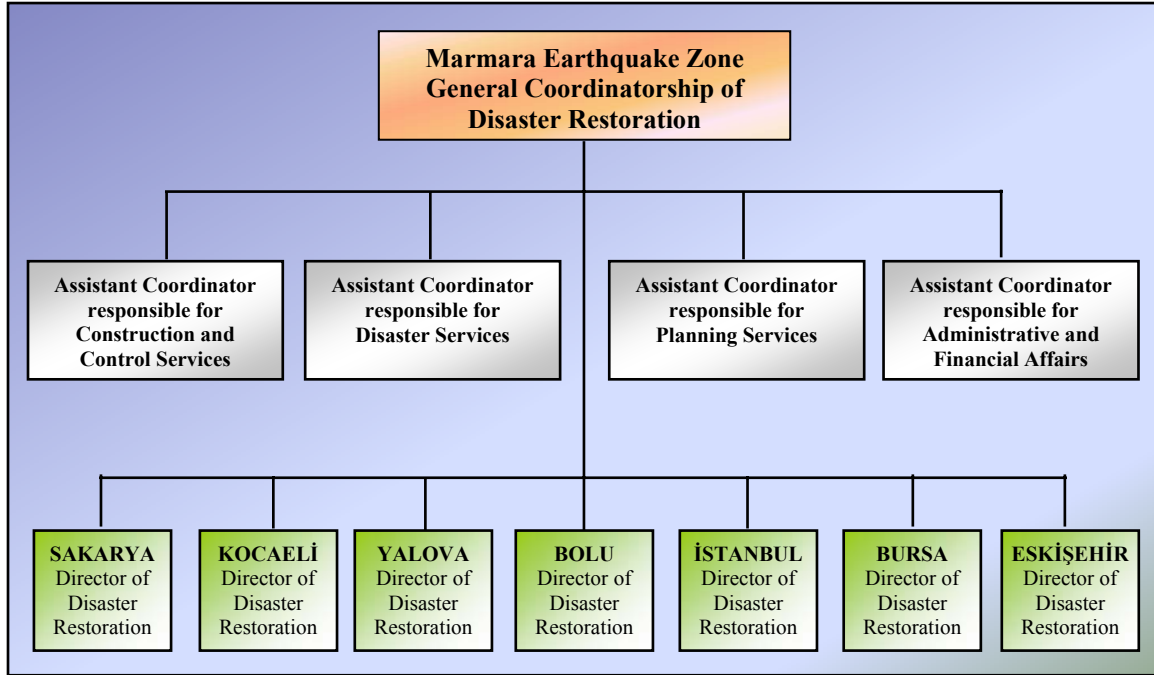
- 2.2** As mentioned in paragraph 1.3 and illustrated in Figure 1; MPWS made certain arrangements in its organizational structure after Marmara and Duzce earthquake. In addition to three Directorates General as main service units and branch offices at provinces, Marmara Region General Coordinatorship of Disaster Restoration for more effective and efficient implementation of post-earthquake activities and Project Management Unit for executing operations related to permanent houses financed with external credit were established.
- 2.3** Duties of Marmara Region General Coordinatorship of Disaster Restoration shown in Table 1 were envisaged to be implemented with an organizational structure illustrated in Figure 2.

Table 1: Duties of General Coordinatorship of Disaster Restoration

<p>General Coordinatorship of Disaster Construction is responsible for;</p> <ul style="list-style-type: none">• Examination and approval of objections to damage assessment reports and notification of examination results to people concerned,• Execution of operations related to detection of beneficiaries and debiting;• Execution of all tendering procedures related to construction of dwelling units and workplaces;• Operating superintendency services of constructions;• Arrangement, approval of progress payments and payment of these on the spot;• Composition of interim and final approval committees, preparation and approval of their minutes;• Designing reinforcement and restoration works, execution of tender and inspection services, provisional and final acceptance;• Carrying out technical experiments and controls of materials to be used at constructions.

2.4 MPWS planned to structure Marmara Earthquake Zone General Coordinatorship of Disaster Restoration as shown in Figure 2, however this plan could not be realized. Marmara Region General Coordinatorship of Disaster Restoration has carried out its functions with a Deputy Undersecretary affiliated to General Coordinator, a Deputy General Director of Disaster Affairs and Deputy General Director of Construction together with sufficient number of technical and administrative staff. Disaster Construction Departments could not be established.

Figure 2: Organizational Structure of General Coordinatorship of Disaster Restoration



2.5 Marmara Earthquake Region General Coordinatorship of Disaster Restoration was not established as a branch unit affiliated to Undersecretariat and General Directorates; on the contrary, it is directly affiliated to the Ministry and entrusted with the duties of relevant Directorates General. However, despite all good will and efforts, targeted effective and efficient results could not be obtained as the spheres of duties, responsibilities and authorities of the Coordinatorship and General Directorates were not separated clearly. Failure in preventing overlapping duties, authorities and responsibilities is the most important factor that hampers effective fulfillment of any activities. There were no guidelines explaining clearly the duties, responsibilities and authorities of units both at center and at provinces, which resulted in overlapping duties, ambiguity in authorities and responsibilities. For instance, tender procedures of temporary and permanent houses were under the responsibility of the Coordinatorship. Despite this assignment, these operations were carried out by main service units of the Ministry. By the same token, tender operations of permanent houses financed by external credits were carried out under the supervision of Project

Management Unit. All these applications were not the results of pre-prepared plans, but stemmed from daily necessities.

- 2.6** Ambiguity in duties, authorities and responsibilities adversely affected the fulfillment of activities in parallel with the principles of accountability and transparency. Moreover, overlapping duties, unclear authorities and responsibilities made coordination even more difficult.

Is inter-institutional cooperation and coordination at a sufficient level?

- 2.7** There are several institutions charged with activities after Marmara and Duzce earthquakes. Disaster Regional Coordinatorship, Incentive for Social Assistance and Solidarity Foundation, Provincial governorships, local administrations, Turkish Red Crescent, etc had different responsibilities. Achievement of optimum results is directly associated with establishment of an effective coordination and cooperation among all institutions.
- 2.8** Since a sound coordination and cooperation could not be achieved, institutions negatively affected each others activities. A first example is related to delay in transfer of earthquake victims to prefabricated houses. 100 million TL rent allowance and daily meals were provided to families living in tents with the help of Incentive for Social Assistance and Solidarity Foundation. Families living in tents did not want to move to prefabricated houses since only foodstuff aid was provided to families living in prefabricated houses, which delayed movement of families living in tents to prefabricated houses. The second example that can be given related to this matter is that beneficiaries were not offered same quality and sized house options. Responsibility of permanent houses financed by World Bank Credit was given to Prime Ministry Project Implementation Unit. The construction of other permanent houses was under the responsibility of MPWS. As sufficient coordination and cooperation could not be established between these institutions, house options with different quality and different sizes were presented to beneficiaries.

Are activities carried out in an environment that complies with the principles of accountability and transparency?

2.9 Acting in line with the principles of accountability and transparency, the most important elements of modern public management, is the key condition of obtaining successful results. Accountability refers to the obligation of persons entrusted with powers and public resources to display how these powers and resources are used. Transparency and accountability are interactive concepts in public management. In other words, to ensure transparency in public management, there is a need for effective and well functioning accountability processes and for accountability processes to function well, there is need for instruments securing transparency.

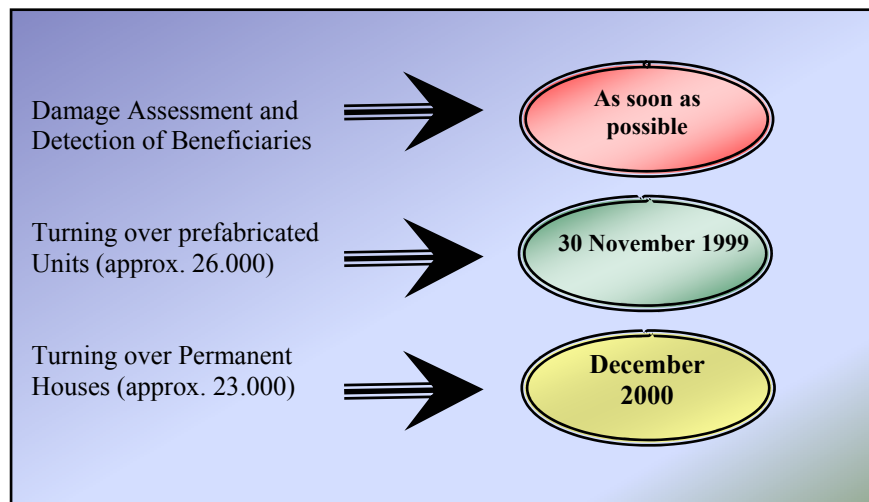
2.10 To act in compliance with transparency and accountability principles in public sector, how targeted results can be achieved should be planned; objectives, targets and expected results should be determined clearly; expectations, responsibilities and authorities should be clarified by mutual understanding of accountable parties; progresses should be monitored and obtained results should be reported after evaluations. Monitoring progress enable administration to take corrective measures when necessary and to make evaluations based on accurate, up-to-date and reliable information, which requires a comprehensive management information system. Without it, accountability and transparency principles cannot be implemented.

2.11 MPWS did not carry out its activities after Marmara and Duzce earthquakes within the framework of procedures explained in paragraphs 2.9 and 2.10. However, it cannot be said that there was no practice that complies with the set procedures. Although there were no objectives and targets set within a plan; there were objectives and targets adopted by senior managers but not known by the staff and a few unclear and immeasurable targets. **Objective** of MPWS after Marmara and Duzce earthquakes is: *Framing restructuring in a way that hampers occurring of similar damages in the future and ensuring region reach again its normal economic levels and return life to normality through providing sufficient temporary sheltering to earthquake victims and constructing*

permanent houses. Its target is establishing organizations mitigating earthquake hazards and providing sufficient temporary sheltering possibilities to victims as well as sustainable, habitable settlement. Targets set by MPWS are listed in Table 2.

2.12 Activities were carried out in order to reach adopted targets and objectives without setting objectives and targets within a plan, determining expected results, designating responsible persons and their sphere of responsibility and who would use which resources through negotiation of relevant stakeholders as well as principles of monitoring and reporting.

Table 2: Objectives set after Marmara and Duzce Earthquakes



2.13 To monitor progress achieved, evaluate to the extent to which targets are reached take corrective measures and report obtained results based on reliable information and data, MPWS should have a comprehensive and competent management information system. Within this context, **MPWS does not have a management information system through which data related to damage assessment, detection of beneficiaries, temporary sheltering and permanent housing activities are correlated on electronic environment; information regarding results and targets can be produced; analysis and evaluations based on complete, accurate, reliable data can be made.**

2.14 Although data related to damage assessment, detection of beneficiaries, temporary sheltering and permanent housing activities are not obtained systematically, there are data that can be collected routinely. These are data and information collected by

means of monitoring forms. During the examinations, it was detected that this data was not sufficiently reliable. For instance, the data given in “Monitoring Table for Temporary Houses planned due to Marmara Earthquake” prepared by General Directorate of Disaster Affairs are not consistent in it. Adding to this, data shown in this table are not consistent with data of Directorate General of Construction Affairs either.

2.15 Being aware of the importance of having reliable data, Directorate General of Disaster Affairs outsourced computer programs in order to carry out damage assessments and detected beneficiaries rapidly and accurately. However, during on the spot examinations, it was observed that due to lack of sufficient number of competent staff, this software was not used.

2.16 It was seen during the examinations that forms used for collecting data were not updated for addressing needs. Middle East Technical University (METU) submitted a report titled “Preparation of Damage Assessment Form for Architecturally Constructed Buildings” to Directorate General of Disaster Affairs in 1994. In this report, damage assessment criteria were set and a new form for damage assessment was developed. Damage assessments after Marmara and Duzce earthquakes were not carried out according to these forms; forms and criteria again prepared by METU in 1990 were used. Report prepared in 1990 was developed to be used at countryside. It cannot be said that the forms used in damage assessment were convenient, since the forms designed for buildings constructed with architectural services were not used at urban settlement areas.

2.17 MPWS has been paying efforts to develop a management information system through various projects. For instance, Geographical Information System shall be developed through Research Center for Earthquake Hazard Mitigation Project, which aims at detecting disaster risks and hazards. Furthermore, with Disaster Management Information System to be developed within Flood and Earthquake Disaster Emergency Response Project, an early warning system shall be established and all data related to disasters shall be accumulated in electronic environment thanks to Disaster Information System of Directorate General of Disaster

Affairs. When all these positive efforts of MPWS can produce a comprehensive and unified management information system that includes activity-cost data and measures the success in reaching targets; actual performance can be displayed accurately and reliably by reports grounded on these data. After examinations; it was detected that there was no such reporting system; on the contrary, reports that cover inconsistent information and communicate problems faced in the region were prepared.

2.18 Head of public administrations are accountable vis-à-vis Parliament for resources allocated to them. For ensuring governments’ accountability vis-à-vis Parliament, conducting audits on behalf of TGNA the TCA informs the Parliament whether resources are used effectively, efficiently and economically and in line with the intentions of the Parliament through its reports. Therefore, the audit area and mandate of TCA should not be restricted.

2.19 A number of Statutory Decree (SD) was enacted after Marmara and Duzce earthquakes based on the authority granted with the Law No: 4452 and dated 27.08.1999. Thanks to these SDs (No:574, 576, 577, 583, 600), TCA Law, State Procurement Law and General Accounting Law, which constitute the backbone of public financial management, were rendered inapplicable. Arrangements in decrees concerning fundamental financial laws are summarized in Table 3.

Table 3: Statutory Decrees issued after Earthquakes

<p>SDs No:574 and 577:</p> <ul style="list-style-type: none"> • Restoration and construction works of Turkish Military Forces • All kinds of expenses for permanent and temporary housing 	⇒	<p>Not subject to the provisions of the Law No: 832 related to visa and registration</p>
<p>SD No: 576 Expenses to be made from central budget (Construction of temporary houses)</p>	⇒	<ul style="list-style-type: none"> • Not subject to the provisions of the laws No: 1050, 2886 and 832 • Audit shall be carried out by a special interim committee
<p>SD No: 581 Expenses as donations made by institutions outside the general budget</p>	⇒	<p>Not subject to the provisions of the laws No: 1050, 2886 and 832</p>
<p>SDs No: 583 and 600 Expenses to be made in case of “emergency” management</p>	⇒	<p>Not subject to the provisions of the laws No: 1050, 2886 and 832</p>

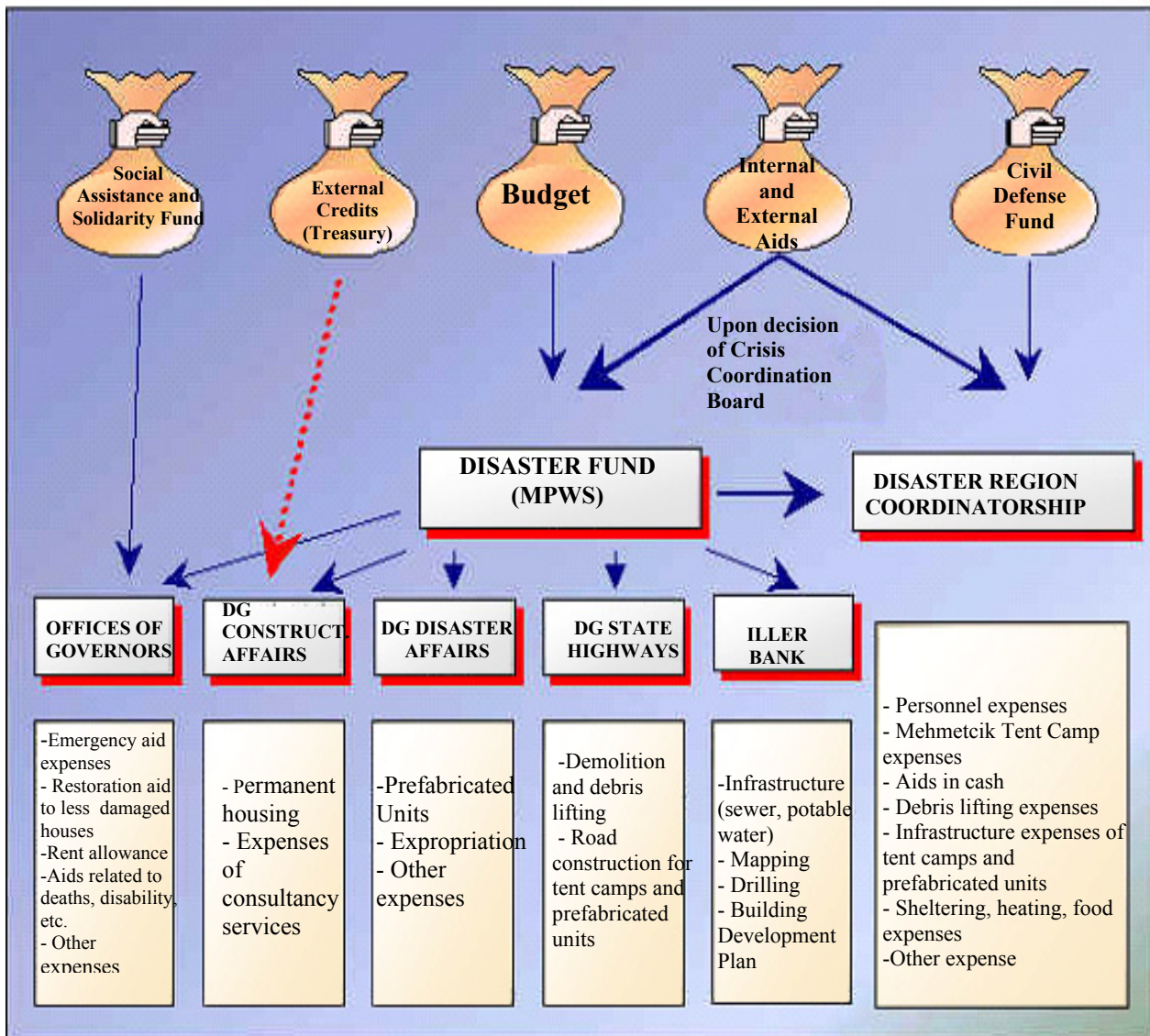
2.20 As it is discussed in forthcoming paragraphs; a vast amount of public resource was used within the scope of restructuring activities at earthquake regions. There is not any significant reason justifying the use of public resources outside the procedures stipulated in main laws of our public financial system. Furthermore, although procedures for reconstruction activities were stated not to be subject to above-mentioned fundamental laws, according to which legal ground these procedures were to be carried out was not determined. For instance, it was stated that works were not subject to the provisions of State Procurement Law; however, how works would be outsourced was not mentioned.

2.21 Non-compliance with procedures stipulated in main financial law is not the sole resulting problem in terms of transparency and accountability. A new practice was introduced for the audit of expenses. A special commission was established with SD No: 576 for the audit of expenses incurred from internal and external relief collected after Marmara and Duzce earthquakes. Whether money allocated from Ziraat Bank Central Aid Account to the region was used properly was audited by a temporary commission established upon the approval of the Prime Minister, which was composed of two inspectors from Prime Ministry and the Ministry of Finance and one Sworn Bank Examiner. The audit would be made by three-month phases and audit reports would be published in Official Journal. This structure was established in lieu of external audit. However, auditing on behalf of the Parliament by independent institutions is the requirement of international auditing standards. It is not possible to consider this structure within the scope of internal or external audit. Likewise, reports of this commission cannot be regarded as audit reports. The commission published three reports on 20.12.1999, 1.6.2000 and 5.10.2001. When reports published in official journal are analyzed, it can be seen that the balance sheet for the relief was drawn up and the expenditure items were showed. However, audit is a systematic, planned and programmed process whereby the results of economic activities and events are assessed based on evidences through analyzing and measuring them independently in accordance with predefined objectives, criteria and standards and obtained results are notified to those concerned. It further helps preventing future errors and development of persons

and institutions; guides the efforts for valid, reliable and consistent financial management and control systems and for improved economy and effectiveness.

2.22 Although the main resource for financing post-earthquake expenditure is the Disaster Fund, resources of Incentive for Social Assistance and Solidarity Fund, Civil Defense Fund, Central Aid Fund of Marmara Earthquake Victims opened at Ziraat Bank, external reliefs and credits together with budgetary resources were used as well. Figure 3 illustrates the resources used at disaster region and their area of use.

Figure 3: Resources Utilized after Marmara and Duzce Earthquakes and Their Usage



2.23 The account balance of Ziraat Bank Central Aid Fund was 161.6 trillion TL as of 1/10/2001. 127.1 trillion TL from this account was transferred to Disaster Fund. The total balance of Disaster Fund reached to 1.2 quadrillion TL (by 1/10/2001, equal to 775 million USD) with transfer of 897.4 trillion TL from the Ministry of Finance and 172.4 trillion TL from European Council Development Bank. When 309.2 trillion TL spent from Incentive for Social Assistance and Solidarity Fund until February 2002 as well as expenditures incurred from other public funds, external credits from external creditors is added to this amount, it is clear that a huge amount of money had to be used for post-earthquake activities.

2.24 Audit mandate of TCA is the precondition for heads of public administrations' fulfillment of their accountability vis-à-vis Parliament. Where audit area and mandate of TCA was limited, the restrictions introduced with an aim to reducing bureaucracy and accelerating procedures would lead to even bigger problems by undermining the principles of transparency and accountability since it would not be possible to report independently, objectively and reliably regarding the extent to which the authorities granted and the resources allocated were used properly.

PART 3

Are activities carried out in line with necessities?

- 3.1** This part of the report analyzes: damage assessment, detection of beneficiaries, restoration and reinforcement of buildings suffering moderate damage, temporary and permanent housing activities in order to assess whether activities of MPWS in the aftermath of Marmara and Duzce earthquakes were carried out in accordance with needs or not.

Damage Assessment Activities



- 3.2** The first activity of MPWS after earthquake was damage assessment. Successful accomplishment of detection of beneficiaries, reinforcement and restoration of buildings and temporary and permanent housing depend to a great extent to accurate and sound damage assessment. Damage assessment teams organized by MPWS for these activities prepared damage assessment reports after examining the condition of the earthquake ground and all damaged buildings.

- 3.3** After 17 August 1999 earthquake, General Directorate of Disaster Affairs appointed 23 technical staff to earthquake zone, 10 of whom were civil engineers experienced in damage assessment. The staff, number of which was inadequate, initially established damage assessment bureaus for organizing works. Then, they gave information to other personnel arrived in region regarding how they were to carry out damage assessment and fill in the forms. After informing damage assessment groups of two people concerning their place of work, the groups started their damage assessment activities.
- 3.4** Damage assessment activities were launched on 23.8.1999. 1200 technical staff was assigned for this activity. Damage assessment teams completed their works within 20 days and examined 334 thousand workplaces and dwelling units. According to preliminary results the details of which are shown in Table 4 (Budget speech of Minister of PWS for the year 2000); it was detected that 77.345 buildings and workplaces were collapsed or severely damaged, 77.169 suffering moderate damage and further 89.872 damaged slightly.

Table 4: Initial damage assessment results after 17 August Earthquake

PROVINCE	COLLAPSED BADLY DAMAGED		MODERATE DAMAGED		LESS DAMAGED	
	HOUSE	OFFICE	HOUSE	OFFICE	HOUSE	OFFICE
BOLU	3095	649	4180	1015	3303	482
BURSA	63	5	434	19	940	68
ESKİŞEHİR	80	19	96	8	314	22
İSTANBUL	3073	532	13339	1999	12455	1239
KOCAELİ	19315	3031	21287	3001	22452	3227
GÖLCÜK	12310	1870	7789	886	9299	1118
SAKARYA	19043	4068	12200	1963	18712	1675
YALOVA	9462	727	7917	1036	12685	1881
	66441	10901	67242	9927	80160	9712

- 3.5** A period of one week was granted to earthquake victims for objecting to damage assessments and subsequently, damage assessment works related to objections received were initiated on 27.9.1999. Before the announcement of assessments related to objections, another earthquake hit Duzce on 12.11.1999. Since this earthquake caused new damages at the region, the objection period

was extended until 7.12.1999 for all provinces. Re-assessments related to objections were finalized at sample selected provinces of Yalova on 24.12.1999, Sakarya and Kocaeli on 3.2.2000. Details of results after final damage assessments (according to data of MPWS) are shown in Table 5:

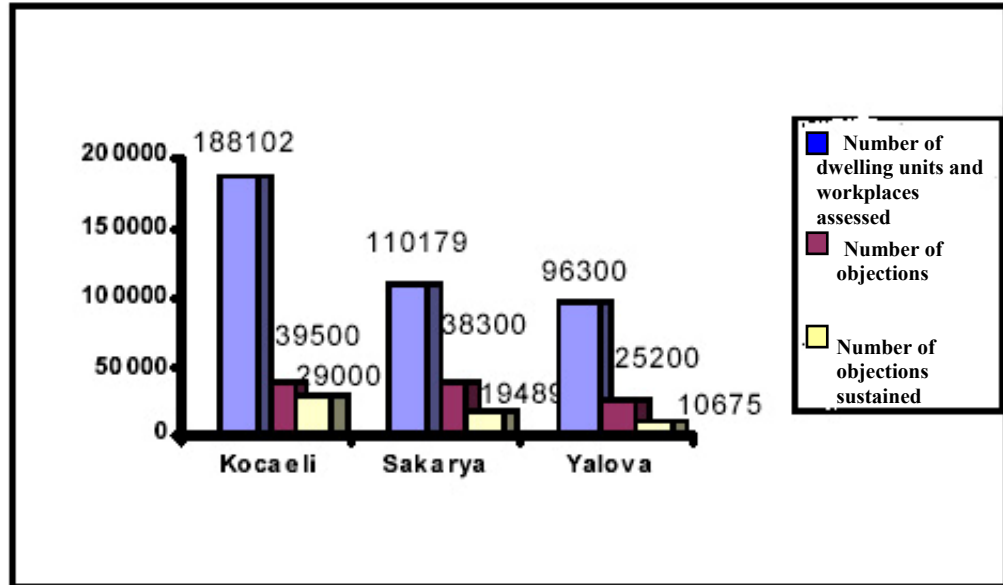
Table 5: Final Damage Assessment Results after Duzce Earthquake and Assessment of Objections

PROVINCE	COLLAPSED BADLY DAMAGED		MODERATE DAMAGED		LESS DAMAGED	
	HOUSE	OFFICE	HOUSE	OFFICE	HOUSE	OFFICE
BOLU	2334	219	6099	902	5757	1016
BURSA	141	3	571	25	1371	5
DÜZCE	16666	3873	10968	2573	13070	1605
ESKİŞEHİR	90	21	167	18	398	32
İSTANBUL	3051	447	15102	2510	17870	2280
KARABÜK			76		106	2
KOCAELİ	35839	5478	41100	5861	45606	6221
SAKARYA	24678	5146	18406	3764	27239	2699
YALOVA	13895	751	14540	1159	11663	1885
ZONGULDAK	91	1	286	4	691	8
	96785	15939	107315	16816	123771	15753

According to results obtained; 112.724 workplaces and dwelling units were either collapsed or severely damaged, 124.131 with moderate damage and further 139.524 suffering slight damage. Accepted objections and effects of Duzce earthquake are the reasons of the difference between the two tables.

3.6 Results of damage assessments at Kocaeli, Sakarya and Yalova provinces are illustrated in Graphic 1. As is seen clearly in the graphic, one third of the damage assessment reports were objected by the earthquake victims. 86 per cent of objectives in Kocaeli, 50 percent in Sakarya, 42 per cent in Yalova were sustained. These results indicate that the preliminary damage assessments were considerably erroneous.

Graphic 1: Number of Damage Assessment, Objections and Objections



3.7 That a huge number of objections were received and most of them were sustained following the second damage assessment indicate that preliminary damage assessments were not sound and did not reflect reality. Although Duzce earthquake had an effect over this result, there are some other factors. For instance, personnel engaged in damage assessment activities were not experienced and trained beforehand as well as the criteria and forms used in damage assessment were not sufficient.

3.8 Both the technical staff of DGDA and of MPWS's other departments were dispatched to earthquake zone for damage assessment. Among technical staff charged with damage assessment, only a limited number of technical staff appointed from DGDA had enough experience. An informative meeting concerning the way to conduct damage assessment and filling forms was made with 1200 personnel assigned duty to conduct damage assessment before the actual work. However, it is clear that this informative meeting is not in the nature of a training that is to ensure the success of the work. As a matter of fact, after the announcement of results related to first damage assessment on 15 September 1999; MPWS organized training seminars of 14 hours in cooperation with TÜBİTAK (The Scientific and Technological Research Council of

Turkey) between 15-26 September 1999 in Istanbul, Kocaeli, Yalova and Gebze. 600 technical staff of MPWS participated to these seminars. The participants were trained on topics related to criteria developed by METU to be used at damage assessments, definitions, and the form of preparing a damage assessment report. These seminars contributed to damage assessment activities and the evaluations of objections after Duzce earthquake; however, it had limited effect on the finalization of assessment within a shorter time and more properly as these trainings were not planned and organized before the occurrence of the earthquakes.

3.9 DGDA and METU carried out a joint study with the aim of developing criteria and forms to be used in damage assessment in 1990. The report drafted after this study covers the criteria and forms to be used for the damage assessment of buildings in rural areas. METU developed another report again for damage assessment in 1994, but in this time for the damage assessment of buildings constructed with architectural services and submitted it to DGDA. This report sets the criteria to be applied in the damage assessment of buildings in pre-designed urban settlement areas and puts forward a new damage assessment form. Damage assessment criteria and forms used at Marmara and Duzce earthquake were criteria and forms developed in 1990 for buildings in rural areas. Sufficient number of technical staff should have been trained beforehand for damage assessment of buildings at urban areas within a short time and effectively.

3.10 Reports prepared by METU, which include criteria and forms for damage assessment are not in the nature of an arrangement of the institution such as handbook, manual or any other document that explains the procure to be followed in assessment process. In order to cover this deficiency, DGDA launched the study “Implementing Regulation on Damage Assessment” in cooperation with universities; however, this study has not yet been finalized.

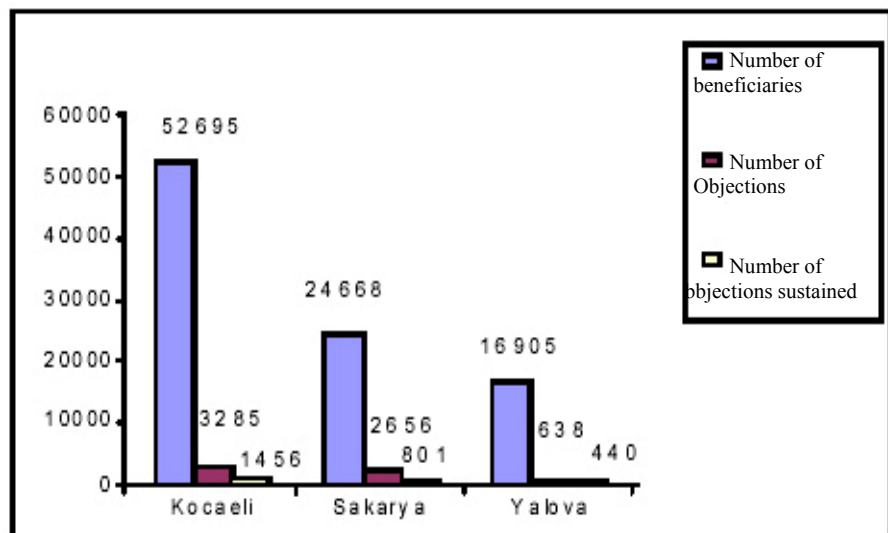
Detection of beneficiaries

3.11 Following the finalization of damage assessment activities; the beneficiaries were started to be detected. There are a number of arrangements on how beneficiaries are designated. According to these arrangements, owners of dwelling units and work places found to be either moderate or severely damaged or collapsed are regarded as beneficiaries. Restoration Loan amounting to 2 billion TL to owners of buildings moderately damaged, 1 Billion TL to the owners of work places was decided to be granted. As for the owners of buildings totally collapsed or badly damaged, either HL of 6 Billion TL or a house to be newly constructed would be given. Restoration of demolished or badly damaged workplaces was carried out by Prime Ministry Project Implementation Unit.

3.12 Works related to detection of beneficiaries were performed by the personnel seconded at the earthquake zone by DGDA. Although the personnel was experienced, their number fell insufficient; only 2 to 3 personnel per province. To assist them, 100 more personnel in situ were assigned. As in the case with damage assessment, works related to detection of beneficiaries were not carried out by adequate number of personnel who properly trained beforehand.

3.13 Number of operations related to beneficiaries, objections and objections sustained at three sample selected cities were analyzed. Graphic 2 provides the results of this analysis.

Graphic 2: Detection of Beneficiaries, Objections and Objections Sustained



3285 objections were raised in Kocaeli for 52.692 operations related to beneficiaries, 1456 of which were sustained. In Sakarya, 2656 people objected to 24.668 operations; 801 objections were sustained. In Yalova, 638 objections were raised for 16905 operations, 440 of which were sustained. At these three provinces, the ratio of objections to beneficiaries operations approximates at 9 per cent; the ratio of sustained objections to total number of beneficiaries is at about 3 percent. These ratios indicate that albeit having been conducted by a few number of personnel, works related to detection of beneficiaries were successful. Since owners of more than one dwelling units are considered a beneficiary for one unit, information related to ownership and occupation must be accurate and reliable. No city information system which also covers ownership and occupation data exist at any of the provinces of earthquake zone. Therefore, the reliability of the results obtained from these operations is questionable. Apart from unreliability of information, incapability to appoint sufficient number of personnel to earthquake zone and complicated legislation related to detection of beneficiaries obstructed the development of an effective internal control system. DGDA had a software programmed which aim at preventing one person to benefit from multiple rights. Accordingly, the Directorate started to detect and disentitle incompliant cases.

Restoration and reinforcement of buildings suffering moderate damage

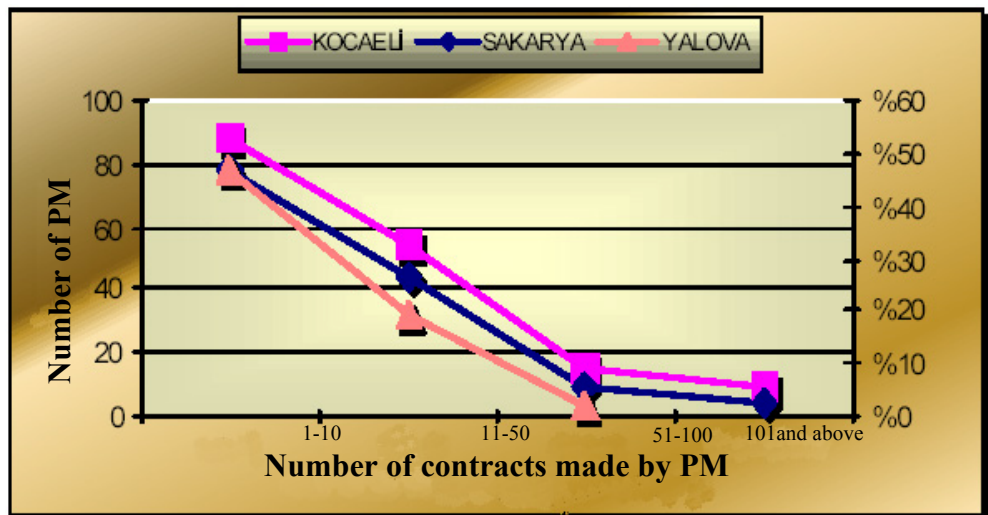
- 3.14** According to detections of MPWS, there were 107.315 moderate damaged housing units as of 27.10.2000. Among owners of moderate damaged buildings, 59.533 owners demanded and filed their written consent for restoration loan, 53.955 of them were found eligible. 2674 beneficiaries residing at rural areas were not included in this figure and in fact, they benefited from self-builders loan. According to program, 2 billion TL for each, totally 107.9 Trillion TL would be granted to 53.955 beneficiaries of restoration loan. This credit would be given in trenches of 10, 30, 40 and 20 per cents based on the progress of the construction.

3.15 MPWS notified those concerned via various announcements that owners of buildings suffering moderate damage must have their restoration and reinforcement projects controlled and approved by Project Advisors (PA) who were certified as per the Implementing Regulation on Project Control Consultancy Service. Limited with restoration of moderate damaged buildings and for a term of two years, 900 real and legal persons received interim PA Certification issued by a commission established by MPWS at centre.

3.16 Under the coordinatorship of TÜBİTAK, a consultation and evaluation meeting was held for restoration and reinforcement of moderate damaged buildings on 3.9.1999. Officials from MPWS, representatives from Union of Chambers of Engineers and Architects and scientists from various universities attended to this meeting. During the meeting, participants decided on organizing a course for training PAs in restoration and reinforcement. Totally 545 persons attended restoration and reinforcement courses. At the end of the course, participants entered to two different exams and their scores were notified to MPWS. However, no assessment was made according to exam results and those that did not attend courses received a PA certificate.

3.17 No restriction was imposed to the number of contracts that can be made by PA bureaus. The number of contracts made by PA bureaus at sample cities of Kocaeli, Yalova and Sakarya with clients (beneficiaries) was searched and results are shown in Graphic 3.

Graphic 3: Number of constructs signed by PAs at selected provinces



As is illustrated in the Graphic, approximately 60 per cent of PA bureaus signed 1 to 10; 30 per cent 10 to 50, 7 per cent 50 to 100 and 3 per cent more than 100 contracts. There are 167 PA Bureaus in Kocaeli as of the date of 23.10.2000. Number of restoration contracts is 4135. There are 26 PA bureaus that made one contract as well as those that made 228 contracts in Kocaeli. There are 135 bureaus in Sakarya as of 30.5.2000. The number of restoration contracts signed with employees is 2494. There are 27 PA bureaus that made one contract as well as those that made 198 contracts in Sakarya. As for Yalova, there are 68 PA bureaus as of 20.10.2000. Total number of contracts signed is 621. 17 PA bureaus signed 1 contract, while there are bureaus that signed 65 contracts in Yalova.

- 3.18** The Implementing Regulation on Project Control Consultancy Service was published in Official Journal dated 10.12. 1992. This regulation envisages the establishment of Project Control Consultancy Bureaus **which shall control and approve, on behalf of the administrations**, the project related to engineering and architectural services either prepared or gotten prepared by institutions and organizations with general and annexed budget as well as provincial special administrations and municipalities.
- 3.19** Although this arrangement related to Project Advisors, who are to control and approve projects on behalf of the administration, was made in 1992, no real or legal person was certified as PA until Marmara and Duzce earthquakes. After occurrence of earthquakes, considering the fact that there were more than 100 thousands buildings with moderate damage and 55.000 of them were found to be eligible for loans; MPWS decided to give interim certificate of PA to real and legal persons such as construction engineers, firms and universities, which enabled them to give services of project design, control and approval related to restoration and reinforcement of moderate damaged buildings for two years and limited with earthquake zone.
- 3.20** MPWS determined the duties, powers and responsibilities of PAs based on the Circular “Implementation Principles of Interim Certificate of Project Advisorship” issued on 27.10.1999 and notified governors that design, control and approval of restoration

and reinforcement projects of moderately damaged buildings must be carried out on the basis of these principles.

3.21 Albeit covering considerably similar arrangements, the Circular “Implementation Principles of Interim Certificate of Project Advisorship” and Implementing Regulation on Project Control Consultancy Services have certain important differences. The most significant difference is that regulation authorizes PAs to control and approve the projects, while the circular authorizes PAs at the same time to design project and have the technical responsibility of constructions after obtaining construction permit from municipality. Since restoration of moderate damaged buildings was carried out according to Circular Implementation Principles of Interim Certificate of Project Advisorship, real and legal persons certified as PA both designed, controlled and approved projects and assumed technical liability of construction after obtaining construction permit. This is not the sole difference between the circular and implementing regulation. Since restoration work (construction business) is, in practice, carried out by real and legal persons with interim certificate of PA (there is not a new arrangement preventing this), the real or legal persons who design, control, approve, construct according to project design (contractor) and control whether construction is done according to its project (technical controller), are all the same real and legal persons. Entitling single person with all these duties and authorities almost eliminate controls over the restoration of moderate damaged buildings. However, control systems are the most significant tool of administrations for achieving optimum results and when used well, give the best results. For instance, a control mechanism used for restoration of moderate damaged buildings made it possible to achieve targeted results. This control mechanism functions as such: PA can notify MPWS that the building which was found out to suffer moderate damage is in fact badly damaged and cannot be restored and accordingly, the Ministry has the building re-assessed and changes the building’s record as badly damaged building. As of the date of 21.11.2000 damage status of 44 dwelling units were changed in this way.

3.22 According to current arrangements, municipalities are in charge of issuing construction permit before restoration and reinforcement work and certificate of occupancy after its finalization. However, municipalities do not have sufficient number of technical staff and therefore, some developed their own techniques to handle these tasks. For instance, a protocol was signed between the municipality of Yalova and Chamber of Civil Engineers. According to this protocol, restoration projects designed by PAs were controlled and approved by the chamber; then the municipality issued construction permit. To eradicate deficiencies mentioned in paragraph 3.19, Yalova municipality prevented PAs to be the contractor and to be the technical controller of the project by means of the same protocol. By the same token, Sakarya municipality introduced ground survey on parcel basis and approval of this survey by university as condition for obtaining construction license.

3.23 Due to their authority to issue construction license and occupancy permit, municipalities alone shouldered all the responsibilities related to restoration of damaged buildings. As most of the buildings are unlicensed, and even if damaged, construction or occupancy permits should not be given to them, the burden of municipalities is further increased. For effective implementation of all these controls and investigations, there should be adequate number of technical staff eligible for these works. Deficiencies of municipalities in this regard make things difficult.

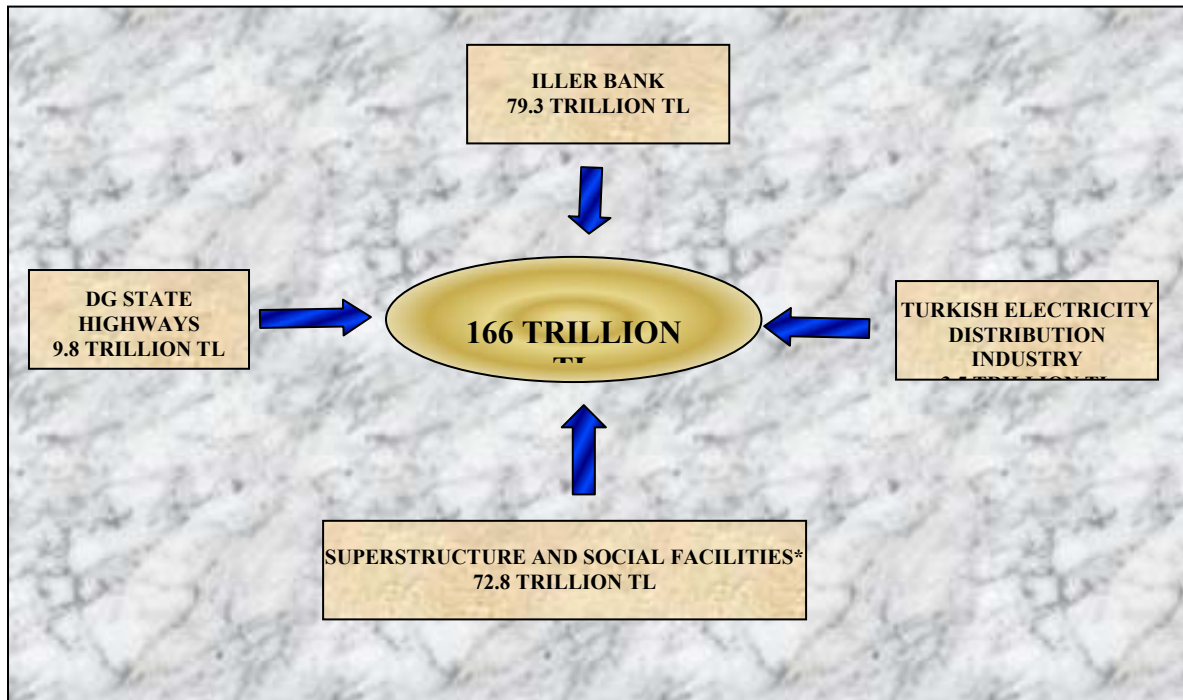
Temporary Housing Activities



- 3.24** Owners of inhabitable houses at earthquake zone were first accommodated in state-owned buildings and tent camps. Before harsh winter conditions, MPWS decided to tender out the construction of prefabricated houses of 30 m² in order to transfer those living at tent camps to more healthy areas.
- 3.25** Tender advertisement of prefabricated houses was published on Official Journal dated 4.9.1999. There is no information concerning the number of houses in the advertisement. According to a provision of prefabricated house contract, MPWS had the right to increase and decrease the number of houses subjecting to tender. After tender announcement published in official journal, 95 firms submitted their tender files, 25 of which were awarded the contract for construction of prefabricated houses, including basement construction, in return for 1.5 billion TL. Contract was signed for 32.039 prefabricated units; however, the actual number of units constructed was 31.933 due to the provision stated in the Prefabricated Housing Contract. 11.521 prefabricated units which were constructed through grants were not included in this figure.
- 3.26** Pursuant to the arrangements introduced with Statutory Decree No: 574, construction of prefabricated houses was outside the scope of the Law No: 2886 on Public Procurement. Which procedures were to be followed was not specified in SD No: 574; therefore, construction was made according to methods and procedures deemed appropriate by the Ministry. The main objective of tendering is to obtain property or services of demanded quality at the most reasonable cost. Obtaining expected results from a tender procedure depends on the conduct of tender in line with principles

of competition and openness. Tender for prefabricated houses was announced by means of official journal and was open to everyone, which complies with these principles. However, the location, amount of the work and according to which criteria tenderers would be selected were not specified, which are practices contrary to these principles. Another deficiency in the construction of prefabricated units was related to controls. In technical specifications, it is stated that the quality of materials used must be eligible for mounting and demounting. However, officials we interviewed with during on the spot audit stated that they controlled units through visual inspection.

Figure 4: Payments affected for super and infrastructures of prefabricated units



* Including costs related to sub-basement and mounting of prefabricated units, the superstructure costs of which were granted as well as costs of prefabricated social facilities constructed at tent camps and prefabricated unit areas

3.27 Super structures of temporary houses were constructed by the firms, while infrastructure was constructed by Iller Bank (water, sewer), Directorate General of State Highways (road) and Turkish Electricity Distribution Industry (electricity). Payments made to contractors for super and infrastructures of temporary shelters are shown in Table 4. The financial burden of 44.433 prefabricated houses to MPWS is 166 trillion TL in total, which also include the

infrastructure expenses of tent camps and of 11.521 prefabricated units constructed through grants. Rental costs of prefabricated units were not included in the cost price.

3.28 As it is expressed before, the purpose of MPWS by constructing prefabricated units was to prevent earthquake survivors spend winter in tents and to ensure them live in a healthier environment. To this aim, the Ministry planned to finalize the construction of prefabricated houses by 30.11.1999 and to deliver to needers. However, temporary houses could not be finished on projected date. As of 31.12.1999, approximately 80 per cent of houses were finished, but only 50 per cent of the houses could be taken over to needers. Although all houses were finished in March 2000, full occupation of prefabricated houses at the region was at the beginning of the second winter through breaking the tent camps, excluding Kocaeli Mehmetçik tent camp. There are two main reasons for failure in achieving objectives set for prefabricated houses. The construction of temporary houses was delayed by the infrastructure works that could not be finished within the planned period. The actual reason, as explained in paragraph 2.8, was failure in establishing effective coordination and cooperation among institutions. 100 million TL rent allowance and daily meals were provided to families living in tents whilst only foodstuff aid was provided to families in prefabricated houses and their rent allowance was cut. Due to this practice, people living in tents did not prefer moving to prefabricated units, albeit harsh winter conditions. Table 6 provides the number of prefabricated units finished and turned over by the end of December 1999, January, February and March 2000 at three provinces selected as sample.

Table 6: Prefabricated Units Substantially Completed and Turned over to Earthquake Victims

	31.12.1999		31.1.2000		28.2.2000		31.3.2000	
	Sub. Comp.	Turned over	Sub. Comp.	Turned over	Sub. Comp.	Turned over	Sub. Comp.	Turned over
KOCAELİ	13.341	-	13.842	5.514	16.248	11.071	16.248	12.242
YALOVA	5.220	2.055	5.220	4.077	5.220	5.220	5.220	5.220
SAKARYA	3.630	3.630	5.881	5.726	5.881	5.865	5.881	5.865

When Table 6 is analyzed, it can be seen that even by the date of 31.3.2000, approximately 4 thousand units were not turned over to victims in Kocaeli; at other two provinces, prefabricated units was started to be turned over by 28.2.2000.

3.29 Approximately 30 per cent of residents of prefabricated units are victims who became beneficiaries since their houses were collapsed, badly or moderately damaged and were entitled to benefit from housing or rehabilitation loan. Beneficiaries are those who owned a house before the earthquake. There were no policies developed for the permanent accommodation of people who did not own houses and were tenants. Moreover, as there are no information regarding to their numbers and as to why they reside in this area, it is hard to say that needs of all residents of earthquake zone were taken into account. In what way super and infrastructure of prefabricated units were to be used after permanent sheltering was not planned. Additionally, as the planning was made without considering the needs of all residents, it is highly probable that prefabricated units constructed for temporary sheltering shall be used as permanent houses.

Permanent Housing Activities



3.30 There are three options offered to beneficiaries whose houses collapsed or demolished at Marmara and Duzce earthquakes with regard to permanent house. The first option was Aid to Self Builders, whereby beneficiaries could receive 6 billion TL aid on condition that they construct their houses on their own lands. In the second option, beneficiaries could choose to receive Housing Loan which is 6 billion TL provided that they buy a finished house. Third option was the grant of permanent houses to be constructed by the state.

3.31 First results of activities related to detection of beneficiaries could be obtained six months after Duzce earthquake dated 12 November 1999. In the light of first results obtained in March 2000, the number of victims likely to benefit from permanent houses was estimated at 41.403 according to which the planning was made. After reaching this result, MPWS and Prime Ministry PIU launched tendering procedure for 34.714 houses in June 2000. Among 58.109 victims in total who approved as beneficiaries as of September 2001, demands of 39.370 people for permanent houses, 14.066 person for ASB and 4.673 persons for HL were accepted.

3.32 Number of beneficiaries for houses to be constructed by MPWS and Prime Ministry PIU and houses planned to be constructed on the basis of provinces are shown in Table 7.

Table 7: Planning in Permanent Housing

PROVINCE	NUMBER OF BENEFICIARIES	A MPWS	B PIU	C GRANT	A+B+C TOTAL
BOLU	1450	1458	-	-	1458
DUZCE	7315	7000	1004	-	8004
SAKARYA	7288	2202	3608	1560	7370
KOCAELİ	17172	6722	10506	656	17884
YALOVA	5133	5120	-	358	5478
İSTANBUL	1012	650	-	-	650
İSTANBUL*	-	-	-	-	559
TOTAL	39370	23152	15118	2574	41403

(*) Finished houses purchased from Emlak Bank.

It was planned that 15.118 out of 41403 houses planned to be turned over to those benefiting from permanent housing option would be constructed by Prime Ministry PIU, 23.711 (including 559 finished houses purchased from Emlak Bank) houses by MPWS and 2574 houses by various institutions and organizations as donations. Out of 15.118 houses to be constructed by PIU, for 12.068 houses the World Bank credit and for 3.050 houses, European Investment Bank credit was obtained by PIU. MPWS planned to construct 15.502 houses with credit from European Council Development Bank and 8.209 houses with national resources.

3.33 As it is shown in Table 7, although 39.370 people were accepted as beneficiary, planning was made assuming that this number would be 41.403. Number of beneficiaries is changing according to court decisions. The Ministry planned to construct additional houses at a ratio of 2-6 per cent of the number of beneficiaries. However, this ratio reached to 20 per cent in Istanbul and Duzce. Due to changes in the number of beneficiaries, MPWS opened a tender for 2200 houses with the residual value of 43 Billion Dollars from European Council Development Bank credit in May 2001 and the number of permanent houses reached to 43.603.

3.34 Activities related to the construction of permanent houses were not subjected to Law on General Accounting No: 1050, Public Procurement Law No: 2886 and visas and approval provisions of TCA Law No: 832 with the Statutory Decree No: 574 and carried out according to procedures and methods deemed appropriate by the Ministry. While determining principles and procedures for tender procedures, MPWS considered European Council Development Bank's condition of international tendering, and tender opened also to international firms was deployed on turnkey basis and by sealed proposal. MPWS calculated the turnkey cost of houses to be 12 billion TL and 23.110 houses were tendered under three groups. The Ministry awarded contract to 52 firms in return for 224 trillion TL. 9 awarded firms committed to construct 2.694 houses with 8-9 Billion TL cost, 33 awarded firms 15.118 houses with a cost of 9-10 Billion TL, and 10 firms 5.298 houses in return for over 10 Billion TL.

3.35 MPWS finalized the tender procedure of 23.110 dwelling units on 9-12-14 June 2000. Tender of consultancy, control and engineering services of these units was made in February 2000 since geologic and geotechnical ground surveys together with development plans were had done by the awarded firms as well. 21 firms were invited to tendering for consultancy, control and engineering services. Bid of 11 firms were found eligible and 5 firms were negotiated and awarded the contract for consultancy control and engineering services with a cost of 6.175 Trillion TL.

3.36 MPWS planned to finalize the construction of houses within 150 calendar days following the allocation of lands to construction firms with the provisions included in the contracts with a view to transferring beneficiaries living in tents to permanent houses. Cases where time extensions can be granted are stated in the contracts and since tender was made on turnkey basis, it was decided that no price difference would be paid. According to contracts made with firms, constructions at Kocaeli, Yalova, Bolu, Gölcük and Sakarya in October 2000; at Istanbul and Duzce must have been finished in December 2000. However, construction of houses could not be finalized since time extensions were granted to firms due to various reasons. Time extensions were the results of delay in expropriation

operations and in progress payments. The most important reason for why time extensions were granted was the delay in allocation of lands due to expropriation and infrastructure works.

3.37 Lack of coordination among MPWS Directorate General of Building Affairs and İller Bank of the Ministry led to failure in the construction of houses in a timely manner, in reaching targets and cost overrun. An extra over price for consultancy, control and engineering services had to be paid as the houses could not be finished timely. By the same token, 33 per cent of houses planned to be finished in November and December 2000, namely 15.626 houses were turned over by September 2001. Locations and numbers of houses finished and turned over are shown in Figure 5. (September/2001)

Figure 5: Houses constructed by MPWS Turned over to Beneficiaries

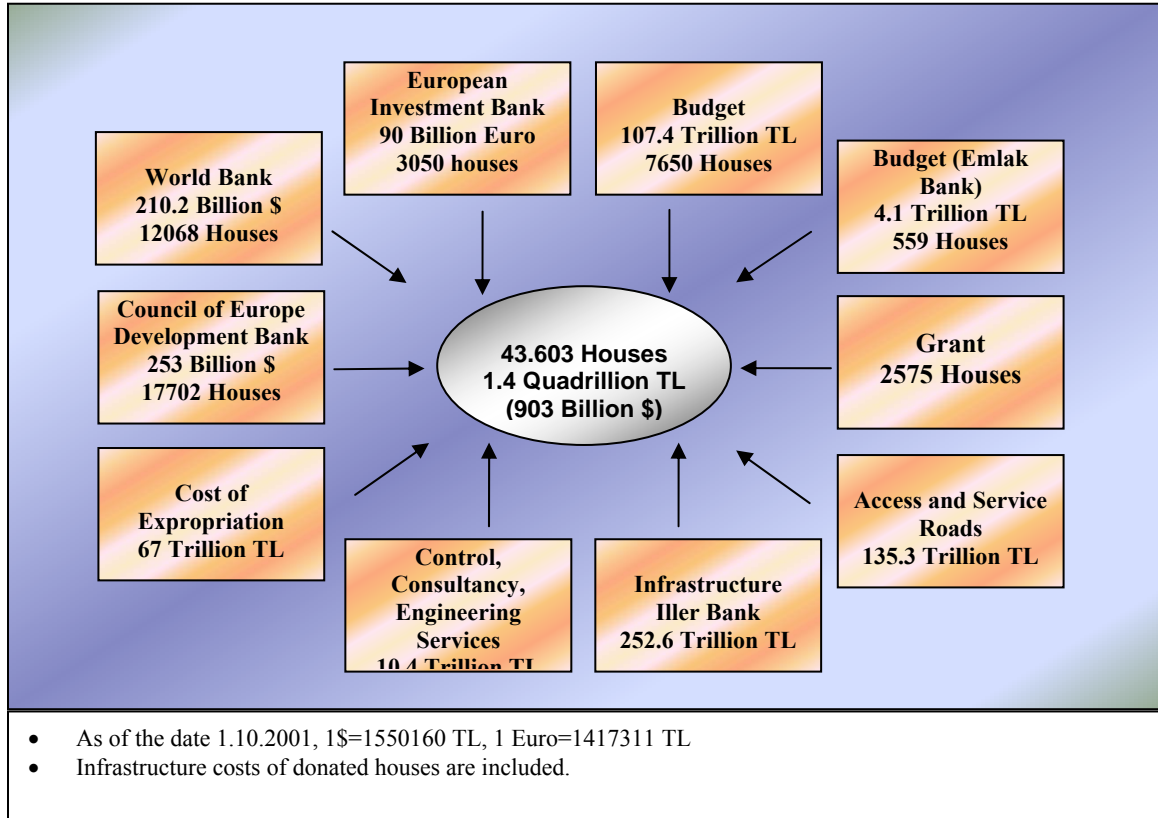
<i>İL</i>	<i>Number of Permanent Houses Finished</i>	<i>Number of Permanent Houses Turned over</i>
<i>BOLU</i>	1458	1458
<i>DUZCE</i>	5516	3108
<i>SAKARYA</i>	2202	1441
<i>KOCAELİ</i>	6722	6239
<i>YALOVA</i>	4614	3380
<i>İSTANBUL</i>	650	-
TOTAL	21162	15626

As it can be seen, as of September 2001, 67 per cent of 23.152 houses tendered out under the first group by MPWS were turned over to beneficiaries; while 7524 houses were not.

3.38 Each 4673 beneficiaries who selected Housing Loan received 6 Billion TL credit, totaling 28 Trillion TL. Payment of 84 Trillion TL to 14.066 persons who selected Self-builders loan was planned. As of 05.09.2001, the realization rate of this loan was approximately 15 per cent. Due to incompliance with building development plans and procedures, not all the people applied could benefit from this loan. In order not to put people who could not get

self-builders credit in a difficult situation, the right to benefit from Housing Loan was granted to them.

Figure 6: Expenses to be made for Permanent Houses



3.39 As is seen from Figure 6; expenditure amounted to 1.4 quadrillion TL shall be made for 43.603 houses to be turned over to beneficiaries who selected the permanent housing option. When 84 Trillion TL for 14.066 self-builders and 28 Trillion TL for 4673 people benefiting from housing loan are taken into account, the total expenditure of permanent housing, excluding personnel and administrative expenses, reaches to 1.5 Quadrillion TL.

3.40 In the past, MPWS put pre-prepared disaster houses projects into implementation after disasters. After Marmara and Duzce earthquakes, instead of this practice, permanent housing projects that considered the life conditions and demands of the earthquake zone residents were got prepared by five firms selected as project control consultant. 7-8 sample projects for each province were

selected among projects with different types and costs. The cost of 2-3 storey houses with a gross living space of 99 m² to be constructed in accordance with international norms and material standards specified by Turkish Standards Institute are calculated 12.000.000.000 TL (according to April 2000 exchange rate, equal to 20.000\$) by MPWS based on unit prices of 2000 and tendered out by turn-key basis over this calculation. With the discounts, cost of one house decreased to 9.6 billion TL, excluding infrastructure costs. Although it was decided that extra over prices would not be paid and so is doing, houses were tendered out on turn-key basis, payment of an extra over price for permanent houses was approved with the Decision of the Council of Ministers No: 2001/ 2862 and dated 12.6.2001 and approximately 21.1 Trillion TL extra over price was paid to firms. Therefore, construction of houses was not finalized with the projected costs.

3.41 As per the provisions of Loan Agreement approved with the decision of the Council of Ministers dated 2 December 1999; the Prime Ministry PIU was authorized in conducting works related to reconstruction with credits obtained from World Bank. The Prime Ministry PIU constructed houses size and quality of which were different from the houses constructed by MPWS. Houses of PIU were approximately 80 m² and costed 14.000\$ excluding infrastructure expenditures. There are also some other differences between the houses constructed by PIU and MPWS. For instance; houses of MPWS were either centrally heated or heated via boilers, whilst the houses of PIU were designed to be heated by stove at certain places (such as Cumayeri and Golkaya). Different sizes of houses of different qualities led to dissatisfaction among beneficiaries.

ANNEX 1: AUDITEES AND PERSONS INTERVIEWED WITH

☞ MINISTRY OF PUBLIC WORKS AND SETTLEMENT

DIRECTORATE GENERAL OF TECHNICAL RESEARCH AND IMPLEMENTATION

- Director General of Technical Research and Implementation
- Head of Construction Project Department
- Assistant Director of Investment Project and International Affairs Department
- Head of Housing Affairs Department

DIRECTORATE GENERAL OF DISASTER AFFAIRS

- General Director
- Assistant General Directors
- Head of Temporary Housing Department
- Head of Planning and Beneficiaries Department
- Head of Disaster Survey and Damage Assessment Department
- Head of Earthquake Research Department
- Head of Fund Management and Supply Department
- Fund accountant

DIRECTORATE GENERAL FOR CONSTRUCTION AFFAIRS

- Deputy Director General of Construction Affairs
- Head of Architectural Project Department
- Head of Plan Project Department
- Head of Construction Project Department
- Director of Detection Specifications Unit
- Director of Housing and Housing Safety Structure Unit
- Director of Detailed Analysis Unit
- Assistant Director of Planning Unit

PRESIDENCY OF RESEARCH PLANNING AND COORDINATION BOARD

- President of the Board
- Head of Budget Preparation and Monitoring Department
- Head of Organization and Method Department
- Head of Planning Coordination Department

HEAD OF PERSONNEL AFFAIRS DEPARTMENT

DIRECTORATE GENERAL OF ILLER BANK

☞ **PRIME MINISTRY PROJECT IMPLEMENTATION UNIT**

☞ **SCIENTIFIC AND TECHNOLOGICAL RESEARCH COUNCIL OF TURKEY
WORLD BANK REPRESENTATIVE OFFICE IN ANKARA**

☞ **INTERVIEWS AT ON THE SPOT AUDITS**

KOCAELİ

- Coordinator governor and Lieutenant Governors
- Governor and Lieutenant Governors of Kocaeli
- General Coordinator of Disaster Construction and its staff
- Staff of Kocaeli Provincial Directorate of Public Works
- Mayor of İzmit
- Gölcük District Governor and Mayor

SAKARYA

- Lieutenant Governor of Sakarya
- Chief Judge of Sakarya District Administrative Court
- Damage Assessment Manager of Sakarya
- Beneficiaries Detection Manager of Sakarya
- Sakarya Director of Public Works and Settlement
- Staff of Sakarya Provincial Directorate of Public Works

YALOVA

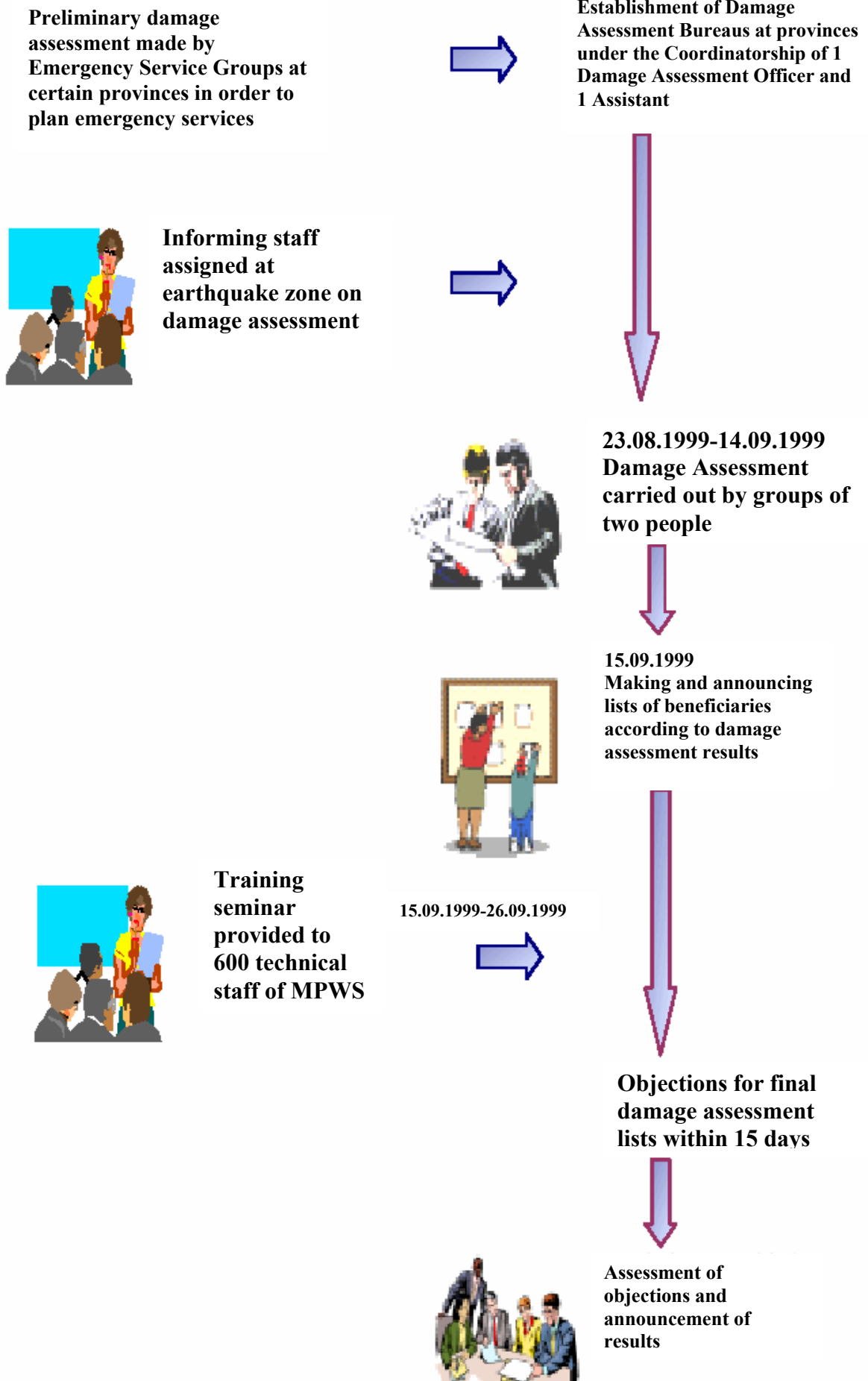
- Governor
- Lieutenant Governor
- Yalova Deputy Director of Public Works and Settlement
- Damage Assessment Manager of Yalova
- Yalova Municipality Director of Building Affairs
- Beneficiaries Detection Manager of Yalova

☞ **NON-GOVERNMENTAL ORGANIZATIONS**

- Representatives of Union of Chambers of Turkish Engineers and Architects
- Representatives of Ankara Chamber of Civil Engineers
- Representatives of Ankara Chamber of Geology Engineers
- Representatives of Yalova Chamber of Civil Engineers

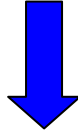
- Representatives of Gölcük Earthquake Victims Association

ANNEX 2: DAMAGE ASSESSMENT PROCEDURE USED AFTER MARMARA AND DUZCE EARTHQUAKES



ANNEX 3: PROCEDURE USED TO DETECT BENEFICIARIES AFTER MARMARA AND DUZCE EARTHQUAKES

**Preparation of Earthquake Victims Lists based on
Damage Assessment Reports**



28.11.1999 **Announcement of explanation related to the procedure for beneficiaries and list of earthquake victims at offices of village headman or reeve.**



21.01.2000-15.02.2000 **Receiving letter of request and undertaking from earthquake victims**



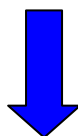
03.04.2000 **Assessment of applications and annexes* by the Local Beneficiaries Committees and Announcement of Beneficiaries list**



03.04.2000-12.04.2000 **Accepting petitions of objections**



Resolving objections by Local Objections Beneficiary Committee



Announcement of results at offices of village headman or reeve

* Deed, real estate disclosure, a copy of identity card, notary lot for cooperatives, electric bill, residential usage license and other supporting documents when necessary.