



Turkish Court Of Accounts

Performance Audit Report

PROTECTION OF FORESTS



SEPTEMBER 2004

“Turkish Court of Accounts (TCA) Report on Protection of Forests”

Upon the decision of the General Assembly of the Turkish Court of Accounts dated 13.9.2004 and no. 5100/1, this Report is deemed appropriate to be submitted to the Turkish Grand National Assembly pursuant to additional Article 10 of the TCA Law no. 832.

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FOREWORD

- Forests which have major immeasurable benefits and functions, and which do not only constitute a single stand-alone source but also a means of safeguard for other sources as well are reducing due to several reasons in Turkey as they do worldwide.
- Within the scope of the audit related to “Protection of Forests” conducted by the Turkish Court of Accounts (TCA) Performance Audit Group in order to assist in implementation of safeguard activities in a more effective and efficient manner by way of identifying the risks threatening forests, mainly the activities of General Directorate of Forestry were subject to review.
- Interviews were held with General Directorate of Forestry central and local organisation staff in charge with the primary role for protecting forests and conducting successful activities in this field within the limits of their capacity and with experts in the field and professional organisations; documents were obtained from the relevant agencies and organisations and reviewed, and observations were done in forest fields within this audit work conducted.
- Documents, interview notes, on which the findings are based and working papers prepared related to the audit are maintained by the Turkish Court of Accounts.
- Views of the General Directorate of Forestry on the draft report on “Protection of Forests” were received and amendments on the report were made where necessary.

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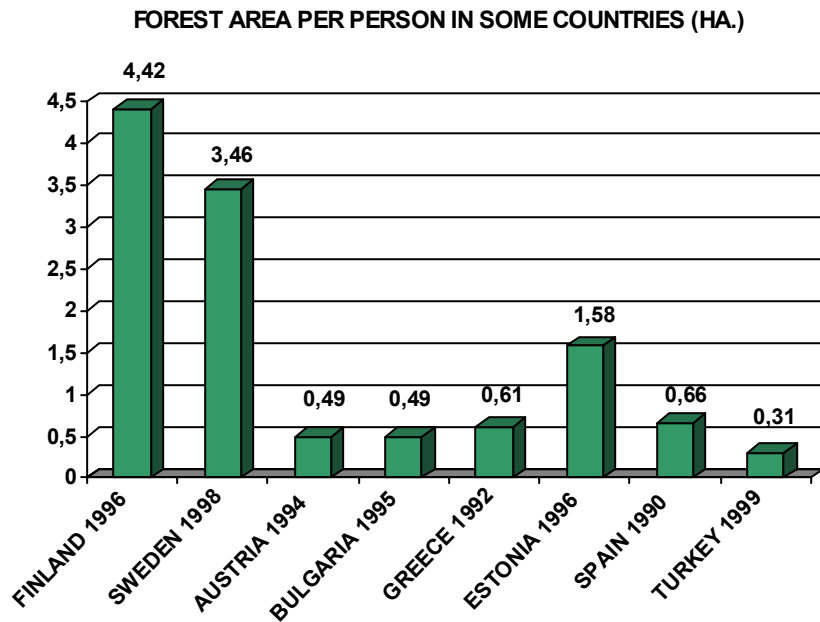
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Introduction

1. Forests, the main constituent of which is tree, nestling a variety of living things and constituting a biological ecosystem are not only a single stand-alone source but also they serve as a safeguard for other sources as well. Forests serve many vital functions which can't be distinguished easily but economic value of which can't be measured, such as preventing climate change, air pollution and erosion, storing energy, providing recreational space, producing clean water and oxygen, ensuring a habitat for various living things and development of all systems in nature by ensuring the balance of soil-water-carbon.
2. As elements in the forest ecosystem are interlinked to each other by functional linkages, an impact on one of these elements spreads over the whole ecosystem. For instance, logging a tree causes increase in the sun radiations reaching the soil, hence rapid dissolution of the organic substances on the ground; it endangers negative effects on the living things in soil such as their dislocation and loss of life. Forest resources, therefore, have to be made use of in a way causing the least damage.
3. Even though the side effects of deforestation are a well-known fact, it has been identified by various surveys that the world is undergoing deforestation. For instance; Central Anatolia is among the regions facing the danger of very high and high desertification in the World Desertification Map, prepared based on the data from Action Plan on Combat Desertification adopted by the member states in the United Nations Conference on Desertification. It is estimated that the forest area ruined between the years 1980 and 1990 worldwide was 130 million hectares and that the current forest area which is 3,4 billion hectares will have been reduced to 3,1 hectares by 2010.

4. Total area of forests in Turkey is 20,7 million hectares, approximately half of which consists infertile forests. In the report named “*State of Europe’s Forests 2003*” published by the United Nations Commission For Europe in 2003; it was indicated that the forest area per person was approximately 0,31 hectare as of 1999 in Turkey; whereas it was 4,42 hectares in Finland, 3,46 hectares in Sweden, 1,58 hectares in Estonia, 0,66 hectare in Spain, 0,61 hectare in Greece and 0,49 hectare in Austria and Bulgaria according to the estimations for the period between 1990-1998.



5. In line with the developments worldwide, forests in Turkey show a declining tendency due to various reasons. Fires, diseases, natural ravages due to pests and harmful mushrooms, destructive winds and snow, illegal actions, unsuccessful forestry applications, highway and energy line locations are mainly the reasons in the decline of forests. On the other hand, some actions such as launching the forest areas for settlement and agricultural use, allocation of these areas to forest, allocation for tourism activities based on legal regulations also impact existence of forest assets.

6. Article 169 of our Constitution stipulates provisions for protection of forests such as necessary laws shall be passed and measures shall be taken for protection of forests and enlargement of fields, the oversight of forests is under the State's mandate, property of State forests cannot be transferred, such forests cannot be owned due to timeout and cannot be subject to easement right apart from that of public benefit, no action or activity harming the forests shall be permitted and no political propaganda causing destruction of forests shall be undertaken.
7. Despite the fact that the main element of forests are trees, it is a generally accepted definition that forest is a unity of life consisting of small systems made of various plants, animals, bacteria and microorganisms. Article 1 of the Forest Law no. 6831 defines the forests as "*Groups of trees and small trees growing naturally or grown by people are considered forest together with the land where they stand*" and also includes exceptions of this definition within the rest of the article.
8. Responsibility of protecting forests is assigned primarily to the General Directorate of Forestry with the "Law no. 3234 on Amendment and Adoption of the Decree Law on the Organisation and Functions of the General Directorate of Forests". General Directorate of Forestry, which is an annexed budget department and an incorporated body, is a line agency of the Ministry of Environment and Forestry pursuant to Article 31 of the Law no. 4856 on the Organisation and Functions of the Ministry of Environment and Forestry. Central Ministry organisation is made up of General Director, Deputy General Directors, consultation and inspection units and main service units as well as supporting units; whereas provincial Ministry organisation is made up of 27 regional directorates, 217 forest management directorates, 1335 forest management chieftaincies. In addition to its duties stipulated by Article 2 of the Law no. 3234, it has also other functions such as:
 - Ensure enhancing forests, protecting them against irregular and illegal interventions, natural disasters, fires and miscellaneous pests and ensure necessary controls,
 - Carry out the permission, usufruct and easement procedures with regard to forest survey and ownership in line with the relevant legislation,
 - Identify forests and firebreaks for production, forestation and fire lines and carry out their projects,

- Ensure access to production, forestation and fire fields in line with the rules and principles to be identified by the Ministry.
9. Responsibility to identify timber lines, which is the first prerequisite for protection of forests lies with the Cadastre and Property Department. Pursuant to Article 8 of the Law no. 3234, the Cadastre and Property Department carries out the survey of forest lands, identification and assessment of lands to be excluded from timber lines, actions and procedures related to conflicts on State forests, inspection of private forests, and carries out permission, usufruct and easement procedures.
10. General Directorate of Forestry performs its duties on protection of forest through the Forest Protection and Anti-Fire Department, which is one of its main service units. The roles of the Department stipulated in Article 7 of the Law no. 3234 are :
- Protect forests from irregular interventions,
 - Prevent diseases and any kind of pests damaging the forests and fight against them,
 - Regulate ranging in forests or in meadows, pastures and winter pastures in forests,
 - Prepare plans and programs to prevent and fight against forest fires, supply tools and means, ensure construction of facilities and take other necessary precautions,
 - Ensure internal and external cooperation, raising public awareness and information for fight against forest fires.

SUMMARY

11. Surveying activities for identification of legal timber lines of Turkey have not been completed yet and the majority of those completed haven't been registered. This affects forestry activities and safeguard actions negatively. Corrective actions on faulty surveying works due to several reasons or their cancellation by court decision are not only one of the reasons preventing completion of these works but also they cause waste of time and resources. *(paragraph 37-41)*

Surveying activities should be carried out in accordance with realistic work programmes prioritising the places where the property problems and interventions in forests are observed most widely, prioritising valuable fields and considering the estimated numbers of the current and future forest survey committees as well as their working conditions; measures should be taken in order to encourage working in these committees to compensate the lack of committee chairman or members, and communication of correct, up-to-date and complete information to the committees by setting up an information system where all records including legal disputes related to the lands subject to surveying should be ensured.

12. Identification of fields that are disqualified from forest is not based on scientific and objective criteria. Survey committees sometimes undertake faulty practices; as a result, fields still qualified as forest are excluded from the timberlines. This situation does not only reduce forests but also causes many legal disputes. *(paragraph 42-50)*

Identification of fields disqualified from forest should be done in line with objective and scientific criteria and in line with measurement systems to be developed by legislation.

13. Pursuant to the third paragraph of Article 17 of the Forest Law no. 6831, licenses given for establishment of refuse disposal areas, market halls, cemeteries, sports facilities, foundation universities, military divisions in forests, (which is a controversial investment requirement given that these facilities are obliged to be established in forest areas) have reduced the forests and no system permitting these investments with the least harm to the forests has

been set up. Lack of a definition of “*Public benefit*” and inability to identify under which circumstances it will take place, inability to compare the public benefits to be provided by the facilities to be set up in forest areas to the advantages of leaving these areas as forest created an argumentative ground for majority of the licenses given. Article 17, which was repealed by the Resolution of the Constitutional Court dated 17.12.2002 and no. E.2000/75, K.2002/200 and which was revised with the Law no. 5192 on Amendment to the Forest Law taking effect by publication on 3 July 2004 restricts the activities to be subject to utilisation license and required the facilities to be set up on State forests to fulfill the condition of “*public benefit and necessity*”. However, the term “*necessity*” indicated here was left to discretion as in the case of “*public benefit*”. (paragraph 56-63)

As regards the licenses to be granted pursuant to Article 17 of the Law no. 6831, systems should be developed to prove the necessity of investments to be made in forest areas and to prove that the area requested for investment fulfills the actual area needed and systems should be developed to ensure comparison of public benefit with the advantage of maintaining forests.

14. Due to the lack of efficient audit in private forests the construction threshold which was set as 6 % of the vertical area was exceeded and some of the private forests were disqualified from forest. (paragraph 64-66)

In order to protect private forests and stay within the lines of construction threshold, an efficient internal audit mechanism should be set up and full compliance with the relevant legislation provisions should be ensured.

15. It was observed that professional experience and qualifications that might help in the fight against fires such as previous experience in the same region were not sought in forest management directors and chiefs assigned in regions vulnerable to fire, that the staff did not stay in their posts not long enough to enable them to learn the characteristics of the region and fire, that staff replacements happened during the period when forest fires occurred most and also that there were vacant management chieftaincy positions in regions vulnerable to fire as in the overall country. (paragraph 81/1-2)

Fight against forest fires will be more successful if forest management directors and chiefs to be assigned in high fire-risk regions are selected among those experienced and who have received training on the fight against forest fires and who know the region well. In addition to this, these staff should be ensured to stay long enough in their respective regions to familiarise with the region and fires, they shouldn't be appointed to other tasks during or close to fire season, a staff policy filling all the vacant positions in sensitive areas should be developed to increase the efficiency in the fight against fires.

16. Training activities on the fight against forest fires and international developments in this area are unable to fulfill the expectations of provincial offices; no activity is carried out for specialisation in fire management. (paragraph 81/3)

The training programs organised for fight against forest fires should take into consideration the needs of the staff assigned in provincial offices. Opportunity to follow the developments worldwide and specialisation in fire management should be ensured.

17. There is no procedure in place to identify the level of fire risk that the facilities located in forest areas carry. Refuse disposal areas and energy transmission lines in forest areas cause risk of fire and fires due to burning of the stubbles cannot be prevented even though they have shown a decline in recent years. (paragraph 84-88)

Risks that carry the facilities in forest areas should be identified, measures to be taken should be determined and procedures should be set up to ensure monitoring and control of these measures. In fire-sensitive areas, risky utilisations should not be permitted as much as possible. Energy transmission lines in such regions should pass along the roads, through weaker parts of the forests or underground and construction of such lines should not be permitted in areas where intervention is not possible.

18. Due to the lack of staff and vehicles at the Ministry offices, adequate measures cannot be taken against irregular and risky usage of forests especially in

coastal areas. Entries to and exits from forest areas cannot be controlled as necessary, which increases the risk of fire. (paragraph 89)

In regions and seasons with high risk of fire, activities related to the control of entries to forest areas and prevention of irregular utilisation should be carried out with the law-enforcement officers, and the means of using voluntary environmental organisations input should be investigated.

- 19.** Forest firebreaks and security lines that were planned could not be completed. It was found that these breaks were inadequate in some areas vulnerable to fires. (paragraph 94-96)

Works for completing the forest firebreaks should be accelerated by prioritising the risky regions, construction of fire security breaks and security lines should be continued taking into account both their harm on forests and their benefits in fire extinguishing activities and density of forest in places where firebreaks are not applicable should be reduced.

- 20.** There is a lack of fire-resistant garments, gas masks and similar tools that will ensure security of fire extinguishing team and the relevant officials indicate that problems were experienced with hand wireless devices with which communication is set during fire extinguishing. (paragraph 97, 98)

Deficient tools and devices to ensure security of fire extinguishing team should be supplied and problems experienced with communication should be settled considering the opinions and recommendations of those who are actively involved in these activities.

- 21.** Lack of staff at watchtowers during the time other than fire season and lack of fire extinguishing teams restrict adequate and timely intervention, which, as a result, aggravates the damage caused by fire. (paragraph 99)

Fire extinguishing teams and watchtower staff should be made available during the time other than the fire season in risky places and in regions where forest fires have occurred most in recent years according to the statistics.

22. Measures to prevent spread of diseases and pests within or outside of the region are not sufficient. Forest assets imported alive or logged brought pests that are not found within the local nature. Types of trees used in forestation in some regions but which are not adaptable to the environment in which they are tried to be grown have become inclined to get weaker in time and open to the impact of diseases and pests. *(paragraph 115, 116)*

In order to prevent the spread of disease and pests, trees with diseases or insects should be taken out of the forest before they harm the other trees. In order to prevent spread of pests to other regions, the barks should be peeled and forest engineers should be used when necessary for control of imported forest products at customs and in the forestation works the kinds of trees that are suitable for the growing field should be preferred.

23. The relevant officials indicate the need of staff specialised in the fight against forest pests and diseases. A system which would enable specialisation in this field hasn't been established yet. *(paragraph 118, 119)*

In order to carry out an effective fight against forest pests and diseases, regular training should be offered to forest guards and technical staff, an accessible information and statistical network including the works and experience of forest management and chieftaincies and the opportunities to benefit from other countries' experiences should be improved.

24. Despite the fact that collective safeguard team, sectional, immobile and mobile safeguard teams where forest guards work and which are affiliated to the forest management chieftaincies have been established so as to protect forests against illegal interventions and the minimum and maximum number of staff that should be employed in these teams has been identified by legislation, employment of the minimum number of staff hasn't been achieved. There is a declining tendency in the number of forest guards. In addition to their inadequate number, training background of forest guards is also inadequate. This situation increases the workload of forest management chiefs. *(paragraph 125-128)*

Deficiency of forest guards in forest safeguard teams should be supplied; number of forest crimes, their variety and their occurrence pattern should be

taken into account in distribution of the guards, and a systematic and comprehensive training should be ensured for them.

25. System for inspection of the activities of safeguard teams cannot be put into practice, forest management chiefs who have roles and responsibilities in almost every activity related to forests are not able to perform their monitoring and inspection duties with regard team to the safeguard teams due to their workload. *(paragraph 124)*

Necessary coordination should be ensured to narrow down the sphere of duties of the forest management chieftaincies and their number should be increased or in order to benefit from the nationwide security forces to combat forest crimes.

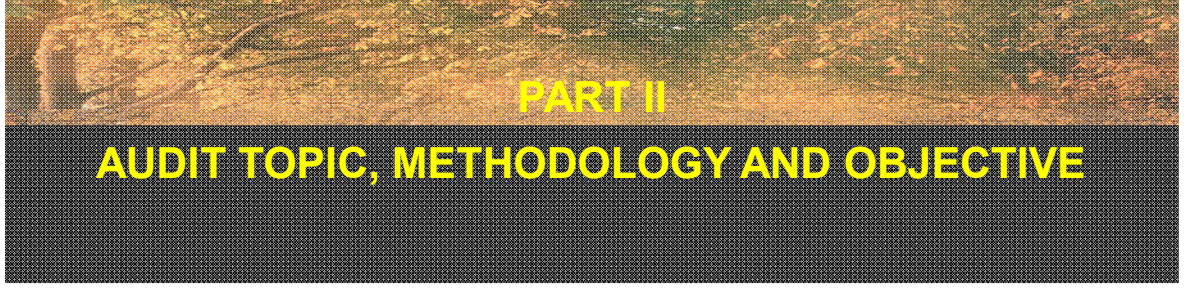
26. High turnover rate at forest management directorates and chieftaincies does not allow the relevant staff to familiarise with the region and local people. The life safety risk faced by the forestry staff fighting against illegal actions on forests during safeguard activities and during execution of court decisions reduces the effectiveness of their performance. *(paragraph 129, 132)*

The provincial Ministry staff should be ensured to stay in their workplaces long enough to be able to familiarise with their sphere of responsibility, forest-human relationships and the problems in the region and to be able to bring solutions to the problems; and necessary measures should be taken in order not to expose them to any pressure during the conduct of safeguard activities and execution of court decisions.

27. It is observed that in regions where land is precious, actions to occupy and make use of the lands are increasing and that there is an increasing tendency nationwide in the forest areas damaged by occupation and settlement. There are places where the deforestation is observed due to illegal settlements and where execution of court decisions on demolishing these illegal constructions is not possible. *(paragraph 130, 131, 133)*

Measures should be taken in order not to lose forest areas due to illegal settlements and necessary coordination should be ensured to prevent delivery

of municipal services to these settlement places. Legal actions should be taken to impose legal sanctions on municipal and other institutional officials providing delivery of water, electricity, sewage services and the forest administration should be assigned with the responsibility of monitoring these actions.



AUDIT TOPIC

28. Adequacy of the activities of the General Directorate of Forestry has been reviewed within the scope of the audit. Given the necessity of having an awareness of the timber lines primarily in order for protection of forests, the activities related to this, exclusion of lands from timber lines and licenses issued to make use of forests have fallen under the scope of the audit.
29. The following topics are covered by this audit work:
- Activities related to identification of timber lines,
 - Licenses given for various forest utilisation purposes,
 - Fight against forest fires,
 - Combat forest pests and diseases,
 - Combat illegal actions against forests.

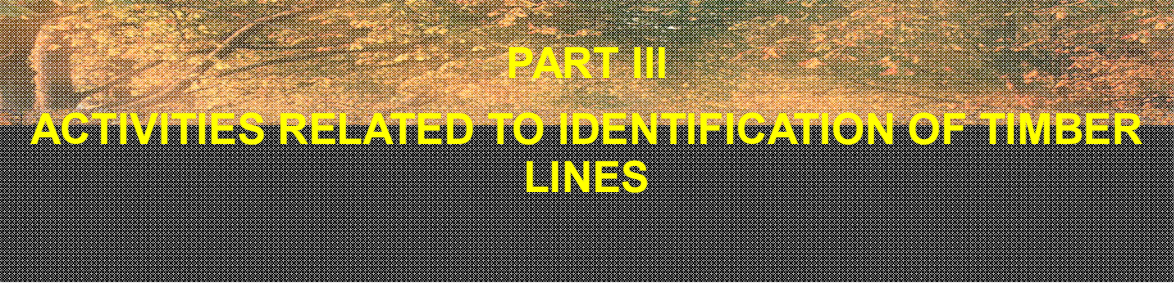
AUDIT METHODOLOGY

30. The legislation was reviewed in order to understand the legal bases of safeguard activities for forests, how these activities were being carried out and in order to identify the relevant risks and audit criteria; meetings were held with the officials of General Directorate of Forestry and documents obtained from them were reviewed; and information and documents received from the Chamber of Forest Engineers and Turkey Foresters' Association through interviews were used.

31. Documents with statistical information related to recent years were reviewed, regional directorates were evaluated based on their activities with regard to illegal actions against forests, fires, pests, diseases, activities to exclude lands from forest areas and licenses given for forest fields and on-site audit was carried out in İstanbul, Antalya, Muğla and Trabzon Regional Directorates.
32. In the regions covered under the audit, documents received from management directorates were reviewed, relevant works were carried out in 15 management directorates, structured interviews were held with 64 management chiefs, reviews were made in watchtowers and fire intervention centers selected through sampling, illegal actions together with the impact of pests and diseases were observed in forests and observations were made in sample regions selected among those exposed to fires and those subject to licenses.

AUDIT OBJECTIVE

33. Objective of this audit is to ensure;
 1. identification of legal and administrative regulations preventing effective and efficient conduct of forest protection activities together with risky factors in implementation and taking necessary measures,
 2. that the General Directorate of Forestry carry out its activities in line with realistic and clear aims and objectives,
 3. conduct of productive activities for more effective protection of our forest assets.



PART III

ACTIVITIES RELATED TO IDENTIFICATION OF TIMBER LINES

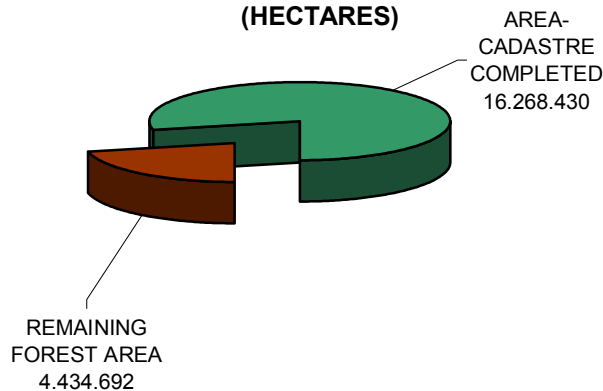
- 34.** Audit criteria are defined as;
1. Conduct of forest surveying activities within the scope of a plan with attainable annual objectives and in line with priorities,
 2. Ensure land registry of the completed surveying activities,
 3. Ensure timely and complete access of survey committees to the information they need during the course of their activities,
 4. Practice exclusion of lands from forest areas based on scientific principles and procedures.
- 35.** This part of the report reviews;
- whether the activities related to identification of timber lines is done in line with a specific plan and objectives,
 - what the difficulties encountered are in the course of conduct of forest surveying activities and their reasons,
 - whether the completed surveying activities are registered or not,
 - to what extent the exclusion of lands from forest areas is practised properly.
- 36.** In order to protect forests, first and above all, the legal timber lines should be known. However, as the surveying activities cannot be completed, it is not possible to learn the exact legal timber lines. The distinction of forest surveying from the surveying in general sense, which means measuring geometrical shapes of immovables and planning them as well as ensuring legal assurance for them by registering is that it is done in forest areas by commissions established by special laws.

FINDINGS

Current Situation at Surveying Activities

37. Forest surveying was addressed for the first time in the Forest Law no. 3116 which took effect by publication in 1937 and it was targeted that the demarcation of forests would be completed in 10 years' time by Forest Demarcation Commissions, however this target could not be materialised. In the Key Forestry Plan pertaining to years 1990-2009, it was envisaged that considering the possibility of tendering out benchmarking, measurement and mapping works in sub-provinces, towns and villages where forest surveying had not been done, a survey committee could circle an area of 8000 hectares and could carry out application on 6.840 hectares of land as well as executing Article 2 on this area; thus it was laid out that demarcation of all forests could be completed by 2004. During the 8th Five Year Development Plan period, the forest survey target was the conduct of application and execution of Article 2 on 750.000 hectares annually. During the review of the Progress Report of General Directorate of Forestry, Cadastre and Property Department, it was understood that the actual completed survey field as of 31.12.2001 was 15.998.879 hectares, that this area was 77% of our overall forest fields and that 58% of the 2001 target was attained. It is understood from other records of the General Directorate of Forestry that as of 31.12.2002, demarcation/survey of 16.268.430 hectares of forest fields was completed and the achievement ratio was %79.

**CADASTRAL STATUS OF OVERALL FOREST AREAS
(HECTARES)**



38. As well as Article 13 of the former Regulation, Article 16 of the “Regulation on Forest Survey in accordance with the Forest Law no. 6831” that took effect by publication on 15 July 2004 stipulates that provinces and sub-provinces where forest survey will be carried out shall be identified by prioritising the places where property conflicts are most common, State investment areas, and places which are included in the land registry and surveying activity programme. Letter sent by the Cadastre and Property Department to regional directorates regarding the preparation of work programs and the work programs sent by the same Department to the regional directorates after endorsement were reviewed; and it was found that even though in the letters sent to the regions it had been indicated that the provinces/villages that would be found appropriate by the regional directorates to be covered under the program due to several property problems as well as the other points to be considered during the preparation of the program would be identified and would be ranked according to their priority, the team observed that no explanation was provided with regard to which priorities were considered in the work programs.
39. In the regional directorates that were audited, the cadastral status of the forest management bodies undergoing many legal conflicts and trespassing the forest areas was reviewed based on the documents obtained from forest management directorates and some examples selected among the findings are provided below:
1. In Milas Forest Management Directorate, 109.747 of the overall 154.767 hectares of forest area were surveyed and no survey was done in 6 villages undergoing the most intervention due to the prevalence of property conflicts and stone pine. Approximately 215 hectares of the 2.072 hectares excluded from the forest area could be registered with the register office. Number of cases still processed only with the cadastral court was found to be 145.
 2. It was observed within the purview of Marmaris Forest Management Directorate that the cadastral procedures had been completed, the number of cases still processed with the cadastral court was 59 and the number of relevant cases being processed with the civil court of first instance was 142 and that approximately 182 of the 243 hectares of land excluded from the forest area within sub-provincial boundaries

of Marmaris in the province of Muğla had not been registered. It was also identified that within the boundaries of Datça (sub-province) 93 parcels of land excluded from forest had not been registered yet due to uncertainty of the area of these parcels and that measurement needed to be done on these lands again.

3. Surveying on the 44.292-hectare-forest area of Ula Forest Management Directorate was completed however 24.304 hectares of land had been registered to date. 8 hectares of the 78-hectare-land excluded from the forest area could be registered.
4. Of the 55.964 hectares of general forest area belonging to the Yatağan Forest Management Directorate, surveying of 47.793 hectares was completed and no land had been registered yet. 40 hectares of land out of 119 hectares that had been excluded from forest was registered.
5. 7491 hectare-land of the overall 57.305 hectares of forest area, most of which had already been circled, was registered. Application of Article 2/B on 508 hectares had been cancelled due to faulty application and that 85 cases were still underway related to cadastral disputes.
6. Even though most of the forest survey within the boundaries of Köyceğiz Forest Management Directorate had been completed, it is understood from the records obtained from the forest management chieftaincies that only 2 of the 104.286 hectares of land of which the survey had been completed were registered. It was identified that the number of cases being processed related to property conflicts was 55.
7. Most of the demarcation survey of 97.589 hectares of forest area within Fethiye Forest Management Directorate had been completed and 23.051 hectares of land had been registered. The audit team understood that in Üzümlü Forest Management, 26 of the 43 cases related to objections to the survey results since 1993 had been concluded fully against and the rest of the cases had been concluded partly against the forest management.
8. Upon the review of 2002 Work Program of Antalya Regional Forestry Directorate it was understood that 757.865 hectares of State forests

out of 1.118.917 hectares of forest area in total had been subject to demarcation.

9. It was observed that surveying activities in Kumluca Forest Management Directorate had not been completed yet; only 21.396 hectares of the 58.122 which had undergone demarcation survey out of 81.446 hectares of the total area could be registered. It was also observed that the number of property-related cases filed and concluded in courts since 1993 to date was 348 and that the 30 cases were still being processed, some of which were on appeal only in cadastral court.
10. The area of which the demarcation survey had been completed in Serik Forest Management Directorate was 37.392 hectares but these lands had not been registered yet. The number of property-related cases being processed was 78.
11. It was identified that the area which had not been surveyed within Manavgat Forest Management Directorate was 44.823 hectares.
12. It was observed that 5.542 of 12.950 hectare-land that had been surveyed in Gündoğmuş Management Directorate was registered and that the land that was not registered was 101.902 hectares.
13. In Akseki Forest Management Directorate, 38.051 of 48.139 hectares which had been surveyed was registered whereas 62.631 hectare-land had not been surveyed yet.
14. It was observed in Alanya Forest Management Directorate that 73.880 hectare-land had been surveyed however was not registered yet. There had been no survey on 24.344 hectare-land yet and the number of property-related cases being processed in courts was 709.

Difficulties encountered in surveying

40. The surveying that would reduce legal disputes, improve the relationships between the forest and people and ensure more effective safeguard for forests could not be completed due to following reasons:
 1. The number of survey committees, which was expected to be 200 as indicated by experts during the interviews reduced over time and declined to 115 in 1999; and to 103 in 2002. Among the committees, 22 of them don't have chairman, 14 don't have forester member and

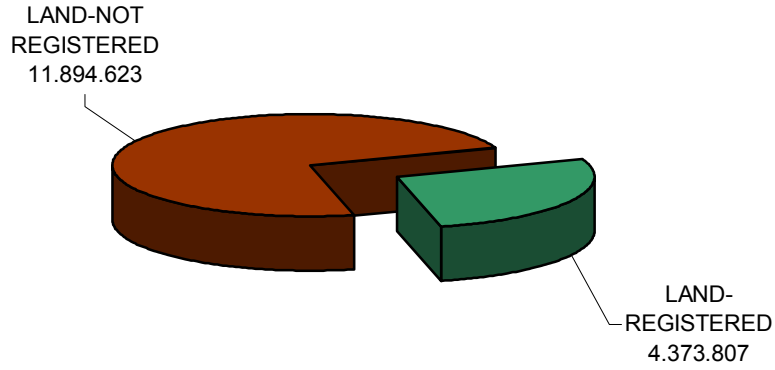
10 of them don't have agriculturalist member and lack people are tried to be compensated by appointments among them. For instance, in the region of Muğla there are 7 survey committees, however none of them are completely established, 4 of them don't have chairman and 3 have lacking members and the activities are carried out by proxy. Term of office of the 68% of the staff assigned in committees is 25 years or more. It is estimated that the number of committees will decline in case these staff take retirement and no new staff is employed. From the interviews held with the officials, it is understood that people do not want to take a role in committees as the conditions are hard, economic return is low, and they are open to various pressures.

2. Legal changes that have a direct or indirect impact on the definition and demarcation of forest areas, made in the Forest Law no. 6831 have required duplication of the previous works.
3. Reasons such as lack of technology or information or negligence cause faults in survey activities. It was observed during the review of files selected through sampling in the General Directorate that duplicated actions had been taken in the same place, the coordinates had been identified incorrectly due to different methods used, and there were cases where all activities needed to be checked and identified again due to incorrect implementation of faulty applications on the land. An information system that would ensure timely access to the necessary information needed by survey committees could not be established. Collection of necessary information was up to well intentioned efforts of the committee chairmen. The interviews held revealed that difficulties were being encountered sometimes in collection of sufficient and sound information from regional directorates and chieftaincies and that this situation caused faulty surveys hence legal disputes; for instance it was indicated that a piece of land could be excluded from the timberline contrary to Law no. 6831 if the officials did not know that the land had already been exposed to fire, and that one of the problems encountered in practice was that the forest administration could not obtain information about the court resolutions on cases related to forest but which the forest administration was not a part to.

Problems encountered in registering the final cadastral surveys

41. In reviewing the records of General Directorate of Forestry, it was observed that only 4.373.807 hectares of land out of approximately 16.3 million hectares on which surveying had been completed could be registered by the end of 2002, that the registration ratio was 26 % and that the amount of land excluded from forests which had been registered was low. In our interviews, the relevant officials indicated that the problems experienced in registration were due to the difference in the registration regulation of General Directorate of Land Registry in addition to the deficiencies in forest surveying activities. Some of the maps were more in the nature of sketch rather than map in technical terms, the coordinates in the maps prepared through air photography were not definite, after 1983 during when ground methods had been in use, adequate training could not be offered, as a result some committees could not carry out these activities on sound basis. In brief, the lands could not be registered due to non-compliance of forest survey maps with technical requirements. As a part of registration procedures, General Directorate of Land Registry requires the maps prepared by forest survey committees to be in compliance with the Regulation on Large Scale Mapping and to be endorsed and signed by a topographic engineer who assumes the authority and responsibility. Regulation on Forest Survey in accordance with the Forest Law no. 6831” that took effect by publication on 15 July 2004, Article 51 stipulating that “*All technical works are carried out within the framework of the Regulation on Large Scale Mapping and the regulation on registration developed by the General Directorate of Land Registry*” and Article 52 stipulating that “*...authority and responsibility in technical works lie with the topographic and surveyor engineer*” are considered as major steps in settling the problems experienced in land registry.

REGISTRY OF LANDS WITH SURVEYING COMPLETED (HECTARES)



Practice of exclusion of lands from forests

42. Articles 169 and 170 of the Constitution allows for exclusion of lands that are not seemed worth maintaining as forest and lands which were disqualified from forest before 31.12.1981 under certain conditions.
43. Sub-paragraph (A) of the first paragraph of the amended Article 2 of Forest Law no. 6831 stipulates that lands which are not worthy of maintaining for scientific purposes, on the contrary, which would provide more benefits if used as agricultural land and lands covered with shrubs and maquis still included within forest regime but which would provide more benefits if transformed into agricultural land to settle a part or whole of villagers shall be excluded from forest. Sub-paragraph (B) stipulates that among the lands which were disqualified from forest in scientific terms before 31.12.1981, those considered beneficial if used for agricultural purposes such as arable field, vineyard, garden, orchard, olive grove, hazelnut grove, pistachio grove, (pistachio, pine nut) and for animal husbandry purposes such as meadows, pastures and winter pastures and those including urban and rural settlements shall be excluded from forests. Second paragraph of the same article stipulates that the land in question shall be excluded in the name of the Treasury if it belongs to the State, in the name of legal public bodies if it belongs to them, and in the name of the property owners if it is private forest and that once the relevant action is taken

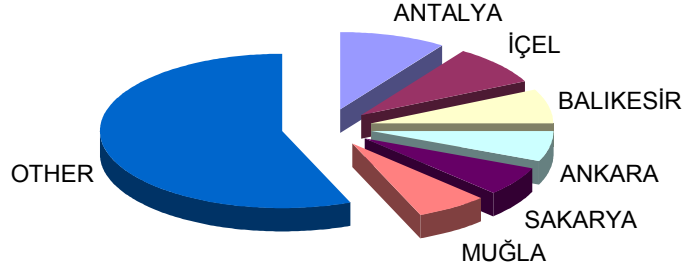
definitely such land shall be subject to final amendment and registration in the land registry office.

44. Practice of exclusion of lands which were disqualified from forest in scientific terms before 31.12.1981, attracting major interest from the media recently, was in place according to the principles defined with the provisions of “Regulation on Forest Survey in accordance with the Forest Law no. 6831 and Application of Article 2/B of the Same Law” until 15 July 2004. In the relevant Regulation, lands disqualified from forest in scientific terms are defined as *“Places with no tree or groups of trees on, which are not worth establishing forest on for forestry activities and forest economy”*; and lands considered to be beneficial if used as agricultural land are defined as *“lands that have been transformed into arable field, garden, orchard, olive grove, hazelnut grove, pistachio grove (pistachio, pine nut), teagarden and similar fields, which bring more advantages than being forest”*. Village, district and town settlement areas are defined as buildings and facilities which were completely disqualified from forest in scientific terms before 31.12.1981 and became a part of the ancient villages and rural settlements upon the start of construction works before this date.
45. Even though the Regulation on Forest Survey in accordance with the Forest Law no. 6831 taking effect on 15 July 2004 and abolishing the former regulation includes provisions similar to those of the former Regulation related to exclusion, the condition of commencement of construction before 31.12.1981 as stipulated in the former Regulation was not required for exclusion of a land from forest, to become a rural or urban settlement area.
46. Answer to the question of how the forest areas would naturally lose their qualification of forest scientifically could not be found in the documents reviewed and in interviews with experts. In review of regulations on principles and procedures of exclusion practice, it was observed that the lands which had been disqualified from forest in scientific terms and which had been considered more beneficial if used in other ways and had been evaluated in this direction based on scientific criteria were not subject to be launched for agricultural, animal husbandry, settlement or for other purposes. It was understood that those lands had already been opened for other uses, occupied and had started to be used in agriculture, animal husbandry and settlement illegally and these

already-occupied lands were being subject to exclusion procedures. The condition of “*Disqualification from forest in scientific terms*” has been defined without referring to scientific criteria. Meaning of “*not beneficial for establishing forest in terms of forestry activities and forest economy*” is ambiguous. Regulations do not cover objective criteria related to the identification of forest areas being more useful if used for agriculture and animal husbandry, there is no measurement or benchmarking system in place and a procedure that legalises the actual illegal situation by narrowing the timber lines has been put in place. The same case also applies to the places with mass town, district and village settlements. Full disqualification of these places from forest in scientific terms has been considered enough to practice exclusion.

47. In sample files reviewed in relation to the topic, it was observed that survey committee proceedings were prepared similarly; it was indicated in these proceedings that “.....it has been decided in unanimity that as a result of our technical committee review on the land, which the expert had confirmed its being used as an agricultural land for a very long time, cannot be considered forest”. There was not any indication as to how the technical review had been carried out, how beneficial it would be to disqualify the land from forest scientifically or to use it as agricultural land.
48. Upon reviewing the records of the General Directorate of Forestry, it was understood that the area of land that had been excluded since 1974 was approximately 473.000 hectares as of 31.12.2002. Antalya, where the practice of exclusion was implemented most commonly and 45.000 hectares of land had been excluded, was followed by İçel with 39.000 hectares, Balıkesir with 34.000 hectares, Ankara with 31.000 hectares and Sakarya and Muğla with 29.000 hectares. Exclusion is not dependent on any deadline, it is possible that the amount of land that will be excluded from forests will increase as long as surveying activities are carried on.

**AREAS EXCLUDED FROM FORESTS
(473.000 HECTARES)**



49. As it can be understood from the overall totals given above, the practice of exclusion in places with high ground rent is much more common. Upon review of the documents obtained from forest management directorates it was understood that the area of land excluded from forest is 138 hectares in Muğla provincial center, 2.950 hectares in Fethiye, 243 hectares in Marmaris, 2.072 hectares in Milas, 1.155 hectares in Köyceğiz, 3.820 hectares in Dalaman, 143 hectares in Kumluca, 156 hectares in Finike, 206 hectares in Serik, 588 hectares in Taşagül, 1.160 hectares in Kuşadası.
50. As a result of the review of documents and on-site reviews, it was understood that pursuant to sub-paragraph (B) of the first paragraph of Article 2, which is commonly known as Article 2/B, of the Law no. 6831, part of the exclusion practices had been subject to legal action and part of them has been modified upon the objection of legal and adjective review commissions.
1. Documents obtained from the General Directorate were reviewed and it was understood that of the 18.106 hectares, 1.085 hectares of land excluded from forest in İstanbul had been reclaimed by re-allocation as a result of inspection review. In observations done together with İstanbul Forest Management Directorate officials, it was found that there were restaurants, dog training centers and industrial facilities on lands excluded from forest in the Ayazağa region for being in use for agricultural purposes and that the lands which had been defined as forest by forest survey committee but not by registration survey committee still maintained their status as forest in appearance. On the land where

Cendere road Çakırlar district was located and which was excluded from forest being a settlement area in line with 2/B, a court decision annulled the 2/B practice and 2/3-floor-buildings located there were still being demolished during the time of audit. Next to the boundaries of Boğazköy State Forest, 31.452 m² land, which had been excluded from forest due to reasons of disqualification and transformed into “garden, agricultural field, barren land and empty meadow” by the forest survey committee but which had not been disqualified in the literal sense and therefore being reclaimed from the National Property Directorate still maintained its status as forest in appearance. Within Sarıyer Forest Management Chieftaincy, where the forest area was 5.070 hectares and the excluded area according to 2/B was 414 hectares, it was observed that there was an area of 31 hectares on which the 2/B application had been cancelled in Zekeriyaköy, Kısırkaya, Kilyos, Central Sarıyer and in Gümüşdere. It was observed that existence of “actual forest” had been found upon inspection report on the lands excluded from forest within Bendler Forest Management Chieftaincy.



Exclusion area in İstanbul

2. During the works carried out in the region of Antalya; it was understood that there were many cases filed related to exclusion lands with registration procedures completed and where settlements were constructed, that some places had been registered as forest area by cadastral courts but different committees had made different decisions as to whether consider these lands as forest or not. From the interviews held with villagers, the team learnt that the committees not fulfilling the

requests of surrounding village residents were not assigned there and that sometimes changes were made. For instance in Güzeloluk Plateau, the 2/B applications were suspended as a result of the villagers' objection, and the registration committee that worked in the area did not consider the land as forest hence did not register it. After the forest administration's raising the issue with the court, the forest was reclaimed. However, the plateau houses that had been built there over the time could not be demolished due to several reasons despite the court's decision for demolition and the team learnt from the interviews that because of non-application of the demolition decision, investigation was opened against the officials appointed here afterwards. In general, it is only after the commencement of settlements on these lands that it is decided that the lands in question are not disqualified and faulty exclusion has been done. There are even cases where it is found out upon application of landowners to the forest administration for their registered parcels that the lands were not actually disqualified from forest.

3. The same problems were also observed in the region of Muğla during the review of documents obtained from forest management directorates and interviews with the relevant officials. In Toparlar, Köyceğiz forest area with very precious and rare sweetgum trees had been excluded from forest due to 2/B however this situation was later on rectified upon the objection of legal and formal review committee. It was observed that a part of the 2/B practices in Çövenli plateau and within Sultaniye Forest Management Chieftaincy had been annulled by court decision and that there were cases in Marmaris, Hisarönü, where two parcels of land had been subject to discrepant actions such as being excluded from forest and being defined as forest, even though both of them had been exposed to fire in the past and that application of 2/B on 28 lands within the same region had been abolished by court decision.
4. It was understood that the lands which had undergone 2/B practice annulled within Dalaman Forest Management Directorate were 508 hectares, in the light of the review of schedules related to 2/B practices, it was determined that the size of the exclusion areas in Beyciler

location in Milas, and in Datça, which is affiliated to Marmaris Forest Management Directorate in terms of forest administration is not known.

CONCLUSION AND RECOMMENDATION

51. Targets defined for surveying in forests could not be achieved. It is observed that surveying could not be completed in most places where there were many legal disputes, trespassing incidences in forest areas and precious lands. Those, of which the surveying was complete, were not registered fully.

Surveying activities should be carried out in accordance with realistic work programmes prioritising the places where the property problems and trespassing forests are observed most widely, prioritising valuable fields and considering the estimated numbers of the current and future forest survey committees as well as their working conditions; measures should be taken in order to encourage working in these committees to compensate the lack of chairman or members of the forestry committees.

52. Faulty surveying actions take place due to the lack of technology or information or due to negligence. Rectification of these faults or cancellation of committee decisions through courts are one of the reasons preventing completion of surveying and they also cause waste of time and resources.

An information center should be set up so that all information including legal disputes related to areas which are subject to surveying could be updated and communicated to the committees correctly, and coordination should be ensured with the Ministry of Justice to inform the forest administration about cases which the forest administration is not a part to but which are related to timber lines and property matters.

53. Scientific and objective criteria are not defined in order to identify to what extent the conditions required or exclusion from forests are fulfilled such as “*to be disqualified from forest in scientific terms*” and “*to be more beneficial for being used in agriculture and animal husbandry*” as stipulated in the legislation regulating the procedure and principles of exclusion from forests. Survey

committees sometimes undertake faulty practices and this situation reduces forests. It is observed that many legal conflicts arise as the assessments related to disqualification of a land from forest are not based on scientific criteria and many faulty applications are cancelled by court decision and that it is understood that the lands haven't been actually disqualified from forest after being put into use,.

Objective and scientific criteria and measurement systems should be developed in order to prevent any negative impact of exclusion of a land from forest on the existence of forests and in order to prevent the committees from taking wrong decision.



54. Audit criteria are defined as;

1. Licenses given for State forests shouldn't reduce forests,
2. Construction threshold identified for private forests should be complied.

55. This part of the report reviews ;

- Scope of the licenses given for forest areas and how they impact the forests,
- How the constructions in private forests are controlled and what kind of measures are taken in cases where the construction threshold is exceeded.

FINDINGS

Licences given in forest areas

56. Second paragraph of Article 169 of the Turkish Constitution stipulates that State forests cannot be subject to easement for reasons other than public benefit. Based on this, pursuant to the Law no. 6831 and the provisions of "Regulation on Allocation of Forest Lands" licenses can be given for various uses in State Forests. For instance, petroleum and mine prospecting can be conducted in private forests, plants and similar facilities can be constructed, stone, sand and gravel quarries, fishery products facilities can be operated and lands can be allocated for tourism investments and public institutions and agencies.



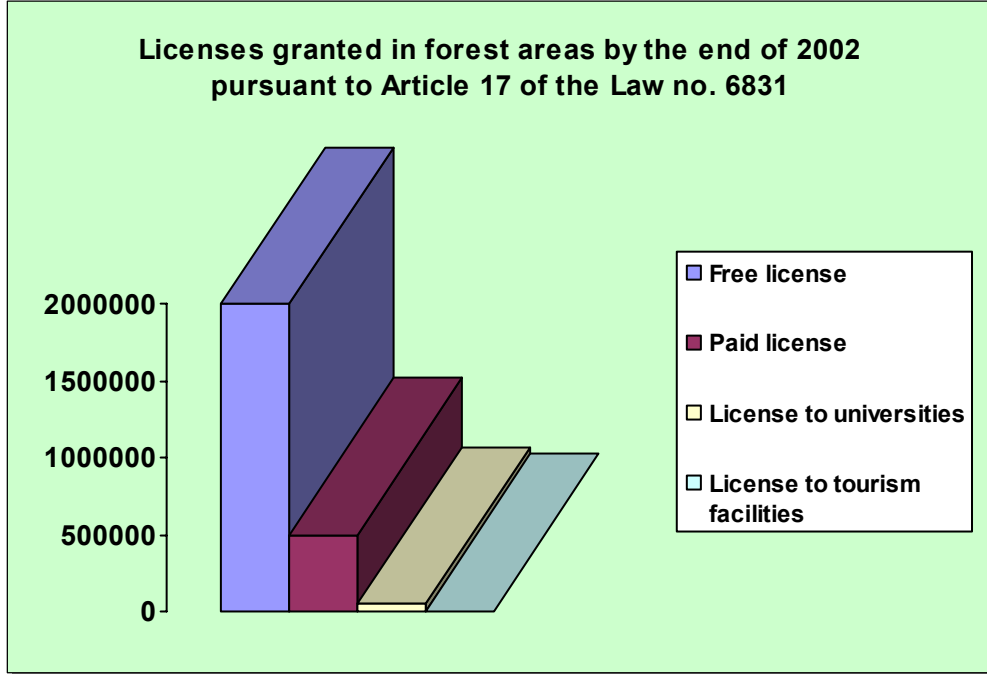
A quarry functioning on a forest land

- 57.** Directorate of Mining Affairs records show that by the end of 2002, 1.501 hectares of land for facilities, 10.450 hectares of land for enterprises, and 236 hectares of land for fisheries were licensed for respective use. It was observed that the land on which mining facilities and quarries were established had been subject to deforestation as a requirement of the nature of these facilities. According to Article 53 of the relevant regulation, licence holders are required to leave the area, where they set up their facility before, suitable for forestation. However, in interviews done with the officials, it was understood that reforestation on these areas were very hard, particularly there were problems experienced in filling the open quarries in Nazilli, Yatağan and Bodrum. It was observed that the lands subject to license were left alone before getting them ready for forestation and before the expiry of their license; that there were cases where the forest administration could not find any responsible party to deliver the land back to them. As the forestry officials did not know who had not complied with their commitments, the same enterprise owners were able to obtain the license again. The understanding of the enterprise owners about getting the land ready for forestation was filling the excavated area. The audit team observed cases where licence holders were pouring excavation residuals particularly in İstanbul in consideration of payment.
- 58.** In the third paragraph of Article 17 of the Forest Law no. 6831, which was repealed by the Constitutional Court's resolution dated 17.12.2002 and no.

2002/200, it is stipulated that the real and legal persons can be licensed by the Ministry of Forestry in consideration of the cost for construction of any kind buildings and facilities in State forests outside of the tourism areas and centers for public benefit. Under the pretext of public benefit, which is not clearly defined within our legal system, lands were allocated for refuse disposal areas, mosques, cemeteries, slaughter houses, lodgings and recreation facilities for public entities under different names, explosive storage, football pitches, shooting ranges and similar facilities.

59. In the third paragraph of Article 17 of the Law no. 6831, which was amended by the Law no. 5192 it is stipulated that *“If existence or construction of defense, transportation, energy, communication, water, waste water, petroleum, natural gas, infrastructure and industrial/household waste dismissal facilities; sanatoria, dams, small lakes and cemeteries; health, education and sports facilities belonging to the State and any kind of places and premises related to these on the State Forests are necessary or are beneficial for the public, the Ministry of Environment and Forestry can give license to real and legal persons in consideration of the cost of such facilities. No cost is claimed for those established and/or operated by the State”*. The scope of the licenses was narrowed down within the new regulation, conditions of *“public benefit and necessity”* were required at the same time, however, the condition of *“necessity”* was not defined clearly as in the case of *“public benefit”* and it was left open to interpretation.
60. Among the files selected through sampling related to allocation of lands on forest areas, the Land License Allocation Reports, prepared in question-answer format, were reviewed and the following findings were reached:
1. In some of the answers to the questions about logging the trees or not, some responders indicated the amount of trees that needed to be logged whereas some them just replied as *“to be logged”*.
 2. Justification of the answers given to the questions as to whether it was possible to construct the facilities outside of the forest or not and what kind of a review and assessment was made were not indicated.

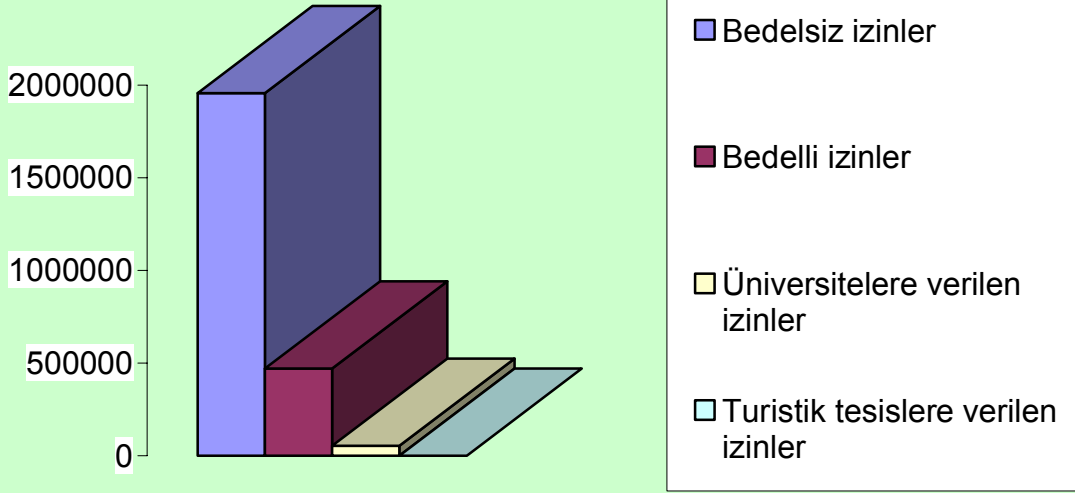
3. There was no explanation on how it was assessed that the request was acceptable or not with regard of forestry activities and whether it disturbs the integrity or not.



4. Concerning the questions of whether the issuance or refusal of the license served the public benefit or not, answers open to discussion were indicated as the term “public benefit” was open to interpretation and there were no criteria in place to ensure consistency of application.
5. In Land License Allocation Reports, no assessment could be done on whether the dimension of the land requested was proportional to the facility to be constructed.

61. Documents obtained from the General Directorate of Forestry were reviewed, and it was understood that the total licensed area in accordance with Article 17 of the Forest Law was 2.834.939.003 m² as of the end of 2002. Licensed areas free-of-charge were 1.957.020.899 m² and licensed areas paid were 471.451.194 m². 53.243.744 m² of land had been allocated to universities and 16.192.881 m² had been allocated to tourism facilities.

2002 yılı sonu itibariyle 6831 sayılı Kanunun 17'nci maddesine göre orman alanlarında verilen izinler



62. Among land allocations identified upon on-site observations and review of documents obtained from management directorates, some examples of those that were significantly large and majority of which were free of charge are indicated below:

1. In Fethiye Forest Management Directorate, 200 acres of land was allocated for wholesale market hall; 2.517 acres was allocated for opening and operating stone quarry, 55 acres was allocated for tile production and disposal facility, and 318 acres was allocated for household/industrial wastes and refuse disposal.
2. In Marmaris Forest Management Directorate, it was observed that military facilities had been given license for 1.433 thousand square meters, city garage constructions for 94 thousand square meters, energy transmission lines and facilities for 5.226 thousand square meters, highway construction for 883 thousand square meters, and cemeteries for 15 thousand square meters of forest area.

3. In Ula Forest Management Directorate, the Provincial Gendarmerie Regiment Commandership was given license for 4.242 thousand square meters of forest area without any charges.
4. In Köyceğiz Forest Management Directorate, TEDAŞ was given license for 3.304 thousand square meters, military facilities for 78.716 thousand square meters, and mines and stock quarries for 1.765 thousand square meters of forest area.
5. In Muğla-Kemer Forest Management Directorate, it was observed that the forest area allocated for highway construction, stock quarry and rescue home was 1.618 thousand square meters, and the area allocated to energy transmission lines was 3.352 thousand square meters.
6. In Antalya Forest Management Directorate, it was discovered that 4.499 thousand square meters of forest area, some of which was in the national park area, was allocated free of charge for highway construction, a total of 1.801 thousand square meters for tank facility, police station building, multipurpose facility and similar military facilities, 215 thousand square meters for various sports facilities, 268 thousand square meters for building the guest houses of Turkmenistan, Azerbaijan and Kyrgyzstan States, 618 thousand square meters for cemetery, 786 thousand square meters for refuse disposal area and its road. The constructions of energy transmission line and transformer station were given license for 7.138 thousand square meters, and the construction of wholesalers' complex for 1.500 thousand square meters of forest area.
7. In Alanya Forest Management Directorate, the total amount of licenses given with or without charge was 2.049 hectares; Kepez Electric was also given license for energy transmission line and similar facilities for 3.194 thousand square meters, the village legal entities and municipalities for 1.294 thousand square meters as cemetery areas, for 492 thousand square meters as refuse disposal area, the General Directorate of Youth and Sports for 145 thousand square meters for building sports facilities, various municipalities for 400 thousand square meters, and the highway construction for 1.596 thousand square meters of forest area.

8. In Fethiye, Marmaris, Köyceğiz, Antalya and Alanya Forest Management Directorates, which were sampled as the valuable areas important in terms of tourism, upon examining the licenses given in forest areas it was discovered that the first three places in rank were the military facilities with 81.944 thousand square meters, mines and stock quarries with 48.381 thousand square meters and the energy transmission lines and facilities with 21.397 thousand square meters of area.
 9. The size of forest area allocations to the universities was also significantly large. According to the General Directorate records these allocations were about 53.000 thousand square meters in total and mainly in İzmir, İstanbul, Bolu and Kocaeli. In İstanbul, the forest area allocated to the foundation universities, which had commercial purpose, was 6.476 thousand square meters while the state universities which were built on forestless areas ensured the forestation of the area. It is known that some of the foundation universities, which have been allocated forest areas, have areas in the same region; and that there are forestation areas, recreation areas and places subject to 2/B application within the allocated areas.
- 63.** During the interviews, the authorities stated that there were difficulties in controlling whether the license limits were exceeded in the regions where licenses were intense, especially in mines. It was stated that the forest guards cannot carry out measurement with GPS (Global Positioning System), that enough efficiency cannot be received in the use of theodolite device because the forest engineers did not have sufficient training. It was observed that some management chieftaincies did not have any devices except for the tape measures for measurement, and therefore they chose to get help from the engineers who did not have formal assignments in those works.

The status of the private forests

- 64.** Private forests are established as a result of ministerial concurrence, court decision or forest surveying works. According to the records of the General Directorate the total area of 332 private forests was 14.423 hectares as of 28.08.2003.

65. Article 52 of Law no. 6831 stipulates that according to Article 17 of the same law, on the private forest areas which are located within the places where town, district and village settlement areas exist collectively, buildings and installations can be constructed in accordance with the development plans with the condition that licenses are received and that their area do not exceed 6 % of the total horizontal area; and that it is important to take care of the natural properties of the forest areas while constructing buildings and installations. The same provisions are also included in Article 10 of “Regulation on the Works and Procedures to be Applied in the Private Forests and the Forests Belonging to Public Institutions Having Legal Personality”, which was enacted as based on the Law no. 6831; In addition the same article stipulates that the licenses for construction shall be given in the places where the forest is in its weakest form and where it is most suitable to supply infrastructure services, by also taking the forest’s closed status and the topographical structure of the land into consideration; and that the development plan, including all kinds of infrastructure and other social, commercial and administrative facilities and the connection roads between those, shall not exceed the 6 % of the forest area.
66. As per the relevant Regulation, the construction requests within the private forests are examined both by the local authority and by the General Directorate during the stages of preliminary license and final license. The local forest administration has the responsibility to follow and audit the consistency of the settlement with the license conditions after the delivery of the field. While a two-staged examination and evaluation is carried out for the preliminary and final licenses, the General Directorate documents include findings indicating that the 6 % settlement limit has been exceeded in some private forests in Istanbul region. It has been understood from the documents that in some private forests having final license, the 6 % limit has been assessed as the area where the buildings stand, and that there are places which received the preliminary license and where the buildings are scattered to the whole forest. Upon examining the inspection reports, police reports and public records, it has been observed that the 6 % settlement limit has been exceeded; that there are places where the final license is given although the settlement plans indicate the excess; and that there are also buildings whose construction was continued and completed even after the preparation of police report and now of which

demolition is technically impossible despite the final court decisions. It has been understood from the court records that forest cover has been removed in those areas and that trees have been logged.

CONCLUSION AND RECOMMENDATION

67. Licenses are granted for various investments and facilities in forest areas. This implementation leads to little or much deforestation of these permitted areas. Among the licenses granted, there are such investments the necessity to constitute in forest areas may be disputable as refuse disposal areas, wholesale markets, cemeteries, sports facilities, foundation universities and military facilities.

On evaluating the license requests, any system has not yet been established to determine the necessity of the type of construction stated in the license in a forest area or whether the requested area fits the size needed; or mainly, to ensure that least harm is given to the forest.

The reasons, that “*public benefit*” issue has not been identified, that it has not been specified under which circumstances it is to be materialized, and that any sort of evaluation has not been conducted between the public benefit to be obtained through the facilities to be constituted in forest areas, and the benefits of keeping the forest areas as they are, have made most of these licenses given within public benefit context disputable.

On evaluating the license requests for forest areas, it is highly necessary to set a system specifying the necessity to realize the investment in forest areas; to research in cooperation with other institutions, in case of necessity, whether these investments can be made outside the forest areas, whether the requested land size fits the actual needs, and whether there is sufficient amount of land other than the forest, or to ask the request holder to bring evidence on this subject; to define “public benefit” in a way, which includes comparison between the concept itself and the benefits to be obtained if the forests remain as they are, and to base this concept on specific measures and criteria that do not leave any comments and disputes on this issue.

68. It was observed that especially mine managements made deforestation in license areas. It was also observed that mine managers fulfilled their liability of getting their license areas ready for forestation through having excavation residuals poured at the area they opened in consideration of a charge. The mine managers failing to fulfill their liabilities could not be pursued.

Periodical measurements should be made to control whether the mine managements exceed the area licensed; a system should be constituted in a way to ensure that the liability of getting the working areas ready for forestation be fulfilled and the management license in various regions should be hindered for the managers failing to abide by this liability.

69. Some private forests have lost their forest characteristics, as inspection and control procedures laid down by legislation provisions not to exceed the limits of structuring in private forests, have not properly been carried out.

It has to be ensured that the inspection laid down by the relevant Regulation in order to protect these characteristics of private forests and to prevent exceeding the structuring limits, is carried out accurately.



70. Audit criteria are defined as;

1. The units in charge of conducting the fight against forest fires should have sufficient knowledge and expertise, with clearly specified authority and responsibilities,
2. Personnel policy should be carried out in a way to allow more efficient fight against forest fires,
3. An information system should be established to collect data including information enabling prediction on possible forest fires and also previous forest fires in order to take sufficient measures,
4. Sufficient measures should be taken against fire risks that buildings and facilities carry in or near the forests,
5. Use of forest lands and stubble burning should be impeded, which may constitute risk of forest fire,
6. Necessary measures should be taken ensuring intervention in fires within the shortest possible time,
7. In order to ensure fire extinguishing teams to work efficiently and effectively, their materials and outfits are to be in sufficient level in technical terms.

71. This part of the report reviews;

- The extent of knowledge and experience of the those taking part in fights against fire,
- Problems encountered in the efficiency of coordination with institutions and bodies to take part in the fight against fire, and the implementations regarding the fire authority,
- Adequacy of fire workers,

- Constitution of an information system to provide data for taking efficient measures and decision-making in the fight against fire.
- Whether necessary measures are taken against fire risks caused by building and facilities, energy transmission lines, mines and other utility types in or near the forests.
- To what extent the activities at irregular picnic areas, and regions where stubble burning is very frequent are prevented,
- Whether the watchtowers, fire security lines and lanes, and also firebreaks are adequate,
- Whether the fire extinguishing teams hold sufficient outfit in material and technical terms,
- Whether there exist problems regarding fire awareness, arriving at a fire scene, and correspondence.

CONCLUSIONS

72. Article 169 of the Constitution stipulating “*Burning the forests, and crimes committed so to destroy or narrow down the forests are not included in general and special amnesty*” has attached greater importance to forest fires. General Directorate of Forestry has been carrying out its activities regarding the fight against forest fires in accordance with the provisions laid down in the Forest Law No 6831 and with the Communiqué No 285 titled “Implementation Principals of Preventing and Extinguishing Forest Fires” and also the “Regulation on the Duties to be Carried out by the Staff in Charge of Preventing Forest Fires and Fire Extinguishing”

Organisational Structure

73. The Fire Operations Unit under the Forest Fires Prevention Branch affiliated to the Forest Protection and Anti-Fire Department has achieved the nationwide coordination. Electronics and Communication Unit, and Aviation Group Presidency affiliated to the same Department are the central units included in the anti-fire organization. In the provincial organization, the Protection Branch Directorates and Fire Administration Centers have achieved the coordination, while the management directorates and chieftaincies at the first instance conduct the praxis activities with the fight against fire. Each forest management directorate has plans for fight against fire and fire extinguishing and the studies are carried out in due course. Regional directorates have been establishing the

coordination in the activities for the fight against fire and fire extinguishing works in their own region.

74. Teams including immobile or mobile teams comprising workers motorized and equipped with wireless devices and fire engines are established as specified in the Communiqué No 285 in order to carry out extinguishing operations from June to October, in which the forest fires are seen most compared to other months. The number of workers to be employed, their place of deployment, and also the working procedures of the fire extinguishing teams called the First Intervention, Emergency Squad, Mobile, Pumper and Helicopter teams, are determined in the same Communiqué.
75. The fire manager in charge of taking any technical and administrative prevention and implementing these within the period from the beginning of the fire until it is extinguished, also the first responsible and authorized person in the case of fire, is, at the first instance, the forest management chief of the area concerned, where the fire started. Then, deputy management director and management director arriving on the fire scene take over the fire management.
76. Besides the training activities conducted by the General Directorate in the primary schools and villages located in forest areas, in-service trainings for fire extinguishing and prevention are organized in 5 stages, in which the 1st stage is given to the staff actually working at fires, 2nd stage to sergeants and group chiefs and the 3rd stage to leaders of the operations. Furthermore, 4th and 5th stage trainings are fire planning, transport and administration trainings. The local units conduct 1st, 2nd and 3rd stage trainings. 4th and 5th stage trainings are conducted by the General Directorate to the management directors, deputy directors, and also the protection branch directors. In 2002, only one training seminar was organized due to crisis and war.

Burnt areas and their reasons

77. According to the records of the General Directorate, the forest areas burnt from 1937 to the end of 2002 is 1.549.506 hectares. Between the years 1993- 2002, 137.264 hectares of forest area were burnt and the most ruined regions were in Muğla with 19.583 hectares, İzmir with 14.746 hectares and Antalya with

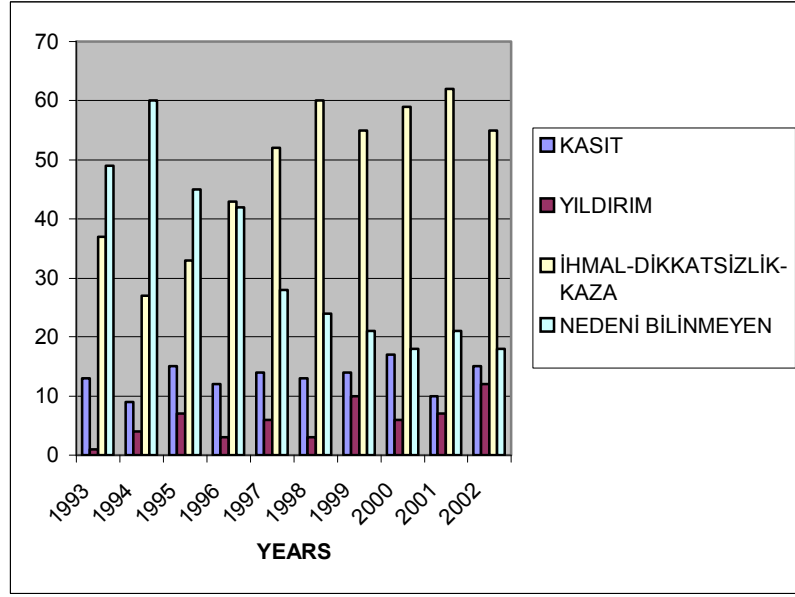
13.515 hectares. In 2002, 8.514 hectares of forest area were burnt. Due to 2002 forest fires, 9.6 million USD was the amount estimated for various expenses occurred accordingly, including the measurable damage suffered, loss of property value, forestation and rejuvenation expenses, charged sustenance and fuel oil expenses, broken and lost materials' renovation expenses; and other direct expenses made for activities to fight against fires were estimated as 54.1 million USD, including employing temporary workers and helicopter rent.

FOREST FIRE DAMAGES AND EXPENSES (BILLION TL)

YEARS	1997	1998	1999	2000	2001	2002
FIRE DAMAGES	2588	2535	3666	24460	10061	15876
FIRE DAMAGES	9810	16161	33488	44635	69152	89454
TOTAL	12398	18696	37154	69095	79213	105330

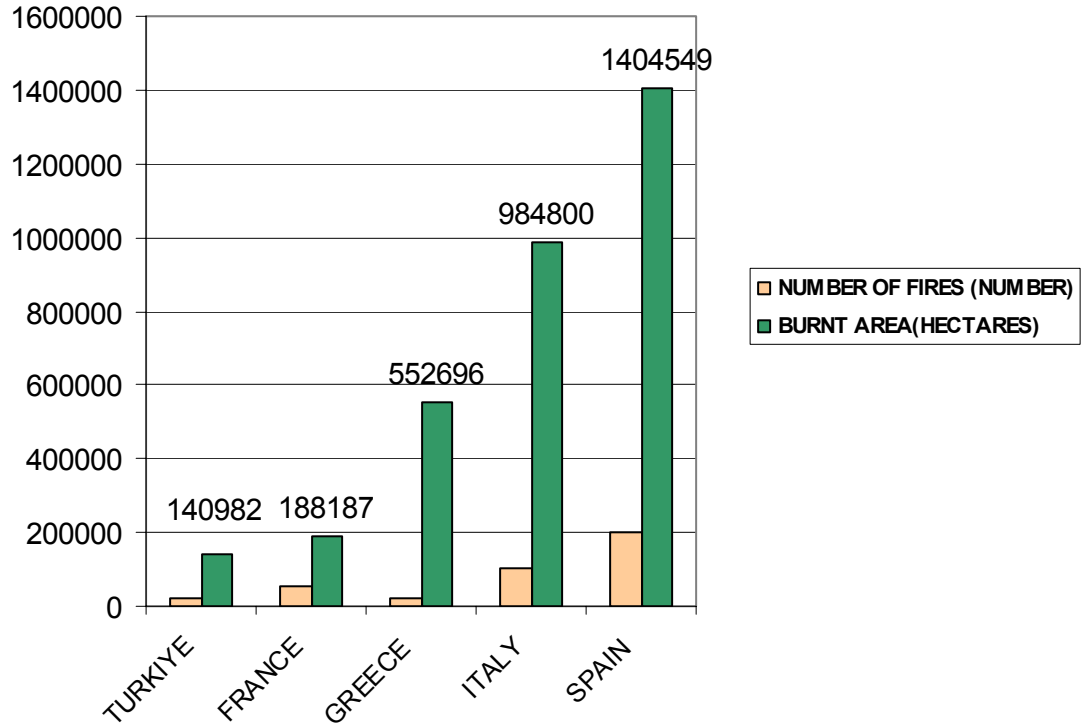
- 78.** From the documentation of the General Directorate; it was clearly understood that since last 10 years, 47% of forest fires were resulted from negligence, inattention and accident, 13% of them were deliberate, 6% were from lightning, and the reasons for 34% of forest fires could not be determined. Likewise, 55% of the forest fires occurred in 2002 was resulted from negligence, inattention and accident, 15% of them are deliberate, 12% from lightning and the reasons for 18% of forest fires could not be determined. In recent years, it has been found that there has been an increase in the amount of land ruined and in the number of forest fires sourced from energy transmission lines, and that 24% of lost lands resulted from such reasons.

REASONS OF FOREST FIRES IN THE LAST 10 YEARS



79. A ten-year data comprising the years 1992-2001, was compared to those of some Mediterranean countries and it was understood that while in our country having 20,7 million hectares of forest area, 140.982 hectares of area were ruined by 21.646 fires, in France with 16,9 million hectares of forest area 188.187 hectares of forest land were ruined by 54.824 fires, in Greece with 6.5 million hectares of forest area 552.696 hectares by 20.414 fires, in Italy with 10,8 million hectares of forest area 984.800 hectares were ruined by 104.845 fires and in Spain with 26,2 million hectares forest area 1.404.549 hectares were damaged by 199.014 fires.

COMPARISON BETWEEN SOME MEDITERRANEAN COUNTRIES IN TERMS OF THE NUMBER OF FOREST FIRES AND AMOUNT OF BURNT FOREST AREAS (1992-2001)



80. It was also found from the documents of General Directorate that during fire extinguishing activities, not only technical personnel such as regional and management directors but also many fire workers and soldiers had lost their lives or are wounded. No information available on the reasons of such incidents.

Personnel policy and information system adequacy

81. In the regions where on-site audit was conducted, the data obtained through interviews with the officials and from the documents reviewed are summarized as follows:

1. Fight against forest fire requires people in the position of fire manager to be knowledgeable on the forest flora, geographical structure of the area they are working at, and requires the neighboring residents to be knowledgeable on the ways to benefit from forests and ways of intervention, and to have experience with regards to fires.

Although the “General Directorate of Forestry’s Technical Personnel Appointment and Replacement Regulation”, sets that the obligatory working period in every service region and service area cannot be less than three years, it was observed that in some fire sensitive areas, this requirement was not complied with (*please refer to paragraph 129*). The forest engineers took office as management chiefs in general without receiving adequate in-service training relevant to their area of duty and undertake the responsibility of thousands hectares of forest area. Furthermore, the management chiefs often stated in the interviews that although being responsible for carrying out every kind of duty regarding forests and working at fire scenes for days under threat, they were paid less than fire workers, negatively influencing the work efficiency.

2. As a result of the analyses of the documents obtained from the Management Directorates, it was found out that 9 out of 30 management chiefs in Muğla, Marmaris, Fethiye, Milas and Köyceğiz included in Muğla region, had 5 years or less service seniority, that places of duty were changed for 6 of these chiefs during or close to fire season, that 17 management chiefs out of 45 in Antalya region at Antalya, Serik, Manavgat, Alanya, Kumluca, Cevizli, Korkuteli, Elmalı, Gündoğmuş and Akseki Management Directorates, had 5 years or less service seniority, that places of duty were changed for 7 of these chiefs during or close to fire season, and that one chieftaincy position was vacant at each Management Directorate in Dalaman, Muğla, Fethiye, Gündoğmuş and Akseki, two in Cevizli Management Directorate and three in Ula Management Directorate.
3. In the interviews, fire managers in the position of management director, deputy director and chiefs expressed that they could not find a chance for self-improvement besides their duties for fight against fire and to follow the developments in the world, that applied training studies were insufficient, and that same kind of information was given to the same staff in the seminars.
4. It was expressed in the interviews that although in the forest fires, the responsibility was under the management chiefs or management directors or deputy directors in the position of fire manager, especially in great fires many civil and military officials interfered in the work and

caused management conflict. Furthermore, other institutions and bodies gave considerable support to the fire extinguishing operations as much as they could and no problem was experienced with this regard.

5. The management chiefs expressed in the interviews that they could not make use of fire extinguishing workers' services efficiently, that new workers had not been employed, that the average age of the workers was high, that the workers' wages were higher than those of technical personnel made negative impact on both the rest of the staff and those who were obliged by law to participate in fire extinguishing operations, that there still existed sick and handicapped workers incapable of participating in fire extinguishing operations, despite the fact that medical certificates were taken from the workers every year before they were employed. There existed no record on how many of those who were wounded or lost their lives in fire extinguishing operations were such sick or handicapped workers. It was identified from the documents of General Directorate that, 25% of fire workers in Antalya Region and 15% in Muğla and İzmir Regions were over 46 years of age.

82. Especially in the fire season meteorological data are continuously monitored and when the air temperature approximates 40°C and relative humidity falls under 50%, the management directorates and chieftaincies under risk are alarmed. Fire Danger Rating System developed to specify the future forest fire potentials, has long been utilized in the U.S., Canada and Australia and has started to be utilized in New Zealand, China and some European countries. Though not oriented yet towards achieving such a system, various studies have been completed based on geographical information system to identify the fire danger ratings in Antalya Research Directorate for Manavgat Management and still carried on in Serik Management.

83. Records have been kept since 1997 in which there exist such information as origin, time and length of extinguishing of fires and the amount of burnt area. In recent years, there has been a considerable improvement in keeping the records and gathering statistical information and reporting. In in-service trainings, various studies have been conducted regarding the troubles experienced in the past forest fires; however, any special team has not yet

been constituted to evaluate the attitude models in fires and information on past forest fires.

Measures to mitigate fire risks

84. Licenses are granted for various uses in forest areas. It was observed that the necessary procedures were not formed to set the measures and to identify fire risks carried by the buildings and facilities in the forest areas, except the provisions set in the court bonds organized for licenses, stating that license holders were to take necessary measures in their workplaces not to cause forest fires and that they would be kept liable against forest administrations for the damage occurred due to forest fires they caused.
85. Especially in the coastal regions, there exist tourism facilities in or near the Turkish Pine forests sensitive to fires. Except for the forest fire identified as being resulted from a recreational facility causing the ruin of 7090 hectares of forests on 27.07.1996, in Çetibeli region, there exist no records regarding the forest fires due to buildings and facilities in forest regions. It was observed that tourism facilities in the regions where on-site audit was conducted were sensitive in general and that larger facilities constituted fire intervention teams, and trained them, and also created water resources.
86. It was identified from the documents that between 1997-2002, 81 fires occurred and 515 hectares had been ruined at the refuse disposal areas in forests. In the interviews, it was expressed that extinguishing the fires in refuse disposal areas was difficult, that the wastes were disposed by burning, and that in the meanwhile the fire could jump into the forest, that the waste flames kept on burning though being covered by soil and that the fire could flare up again with strong winds.
87. The record examinations regarding the period between 1997-2000 revealed that 400 fires had been resulted from energy transmission lines and 9356 hectares of forests had been ruined in these fires. Strong winds could cause the energy lines to break away; produce sparks and carry fire risks in the condition that

lower parts of energy transmission lines are not cleaned properly. In the regions where on-site audits were conducted, it was observed that energy transmission lines were passed along forest dense areas, that the trees became closer to the wires in some cases, and that lower parts of energy lines in specific regions were not well cleaned.

88. It was identified that although stubble burning was prohibited by the provisions of the Law No 6832, in the villages 4 km near to the forests or within boundaries of which there existed Public Forests, and that imprisonment or fine was imposed for the deeds against these provisions, 1203 forest fires occurred and 5505 hectares of forest area were ruined due to stubble burning between 1997-2002. In the interviews, it was expressed that prohibiting stubble burning did not practically bring any profit and that false belief could not be ameliorated in this matter, that law enforcement officers could not be employed in equivalent efficiency in each region, that there could be stubble burning activities in times and weather conditions carrying risks for forest fires.
89. The management chiefs expressed in the interviews that, there were difficulties in controlling the entrance to and exit from forests, that people moved towards other forest areas as the picnic areas were inadequate and subject to payment, that forest guards were insufficient in number. In the observations made in the forest areas within on-site audit regions, thrown bottles, bally boxes and various wastes had been found indicating that the area concerned had been used for various purposes. It was understood in the interviews made with the officers that boats coming from the sea set fire in forest areas in coastal regions, that any inspection could not be performed as these places did not have forest breaks and the forest organization did not have any sea vehicles to inspect, that there existed fires in Marmaris-Hisarönü region due to these reasons. It was identified from the nationwide records that between 1997-2002, there had been 288 fires impacting 927 hectares of forest area due to picnic fires, 1110 fires due to shepherds' fires damaging 7304 hectares, 1037 fires due to cigarette fires impacting 5497 hectares, 1600 terror and bundling targeted fires damaging 10081 hectares of forest areas.

Activities to minimise forest fire damages

90. Success in extinguishing forest fires primarily depends on the intervention made in the shortest time. In order to initiate fire-extinguishing operations before the fire expands the fire should be seen in time, adequate and equipped fire extinguishing teams should arrive at fire scenes. Communiqué No 285 named "Implementation Principles for Preventing and Extinguishing Forest Fires" has specified in detail the ways to perform fire monitoring, communication, organization and carrying out fire extinguishing operations.
91. Monitoring the forest fires is achieved through watchtowers. Monitoring is carried out for 24 hours only in the fire season and other than the fire season there remains no officer in the towers. In high-risk fire regions and periods, air vehicles and mobile teams perform monitoring. It was understood from the General Directorate's records that monitoring had been performed at 781 watchtowers in 2002. As per end of 2002, regional directorates stated that they required 19 new towers and repair in 41 towers.
92. It was identified that 29 out of 31 watchtowers were active in İstanbul region, watchtower construction was needed one each in Demirköy and Kırklareli, and one new watchtower and repair for 5 towers were needed in Antalya.
93. It was observed in on-site audits that watchtowers selected through sampling were in conformity with the standards specified in the Communiqué No 285. Additionally, it was understood through the tests conducted that the officers in the watchtowers were knowledgeable about the region and that they were competent to manipulate the teams at the time of fire. It was identified that there existed television reflector antennas, base stations and transformer buildings and coast guard wireless relays around the Hillside Management Chieftaincy's Palamut Watchtower, hindering the sight to a significant extent.
94. Fire security lines and lanes are needed in order to reduce the damages through preventing the spread of fires; additionally, firebreaks are needed to ensure the access. Forestry Master Plan covering the period of 1990-2009, action plans on fight against fires and evaluation reports on activities against forest fires were analyzed and the following information was obtained:

1. Forestry Master Plan and action plans on fight against forest fires stated that the length of the forest break planned to carry out various forestry activities was estimated as 201.810 km and required total fire security line was estimated as 20.000 km.
 2. The planned network that had been materialised was indicated as 140.560 km in 2001 action plan and 139.939 km in 2002 action plan.
 3. In the evaluation reports, it was stated that 140.000 km of forest breaks had been repaired and 758 km of new forest breaks had been constructed.
 4. As to the evaluation reports, length of the fire security lines was 17.200 km and 36 km of new fire security lines were constructed in 2001 and 73 km in 2002.
 5. The length of the fire security lanes was 8810 km, constructed single or double sided by the existing wayside or those to be constructed in order to prevent fires; in 2001 12 km and in 2002, 29 km of new fire security lanes were constituted.
95. It was stated by the authorities of the General Directorate of Forestry that, there were implementations in line with the viewpoints obtained from Istanbul University's Faculty of Forestry regarding fire security lines and lanes. In the interviews made with the management chiefs of the regions where on-site audits were conducted, it was expressed that there had not been a consensus regarding the necessity of fire security lines and lanes, that opening fire security lines caused significant tree destruction and erosion in sloping areas, that fire security lines did not individually suffice to end the fire, that strong winds and especially Turkish pine forests' cones could jump hundreds of meters away expanding the fire, that firebreaks were important for the team and equipment vehicles to reach the fire scene, that the maintenance of fire security lines and lanes could not be properly done due to inadequacy of staff.
96. As to the observations conducted in some high-risk fire regions, forest and fire security lines were found insufficient and this situation was evaluated with the authorities. For instance, it was understood that in the condition of fire on the west side of İçmeler, between Hisarönü and Hillside Management, the fire

extinguishing operations could hardly be conducted due to the lack of firebreaks there, that the firebreak and security lanes were inadequate in Karadağ coppice forest of nearly five thousand hectares within Çetibeli Management borders, that there was not any forest break and security lane in Nimara island, a national park, that no permissions were granted for road construction, that there were not any fire lines and lanes in the coppice forests between Murdala and Karaköy within the borders of Datça Management Chieftaincy, and that road construction had been stopped on the grounds that it might harm the seals, under protection.

97. Devices and equipments necessary for the fire extinguishing teams and outfit to be given to the team members are specified in Communiqué No 285. The officers of the General Directorate stated that the outfits provided for the fire-extinguishing workers were fire proof, that synthetic fabric was avoided in open area fires and cotton fabric was healthier than the former. In the on-site audit regions, during the interviews made with the staff in the team centers it was stated that the outfits were not fire proof, that they became stiff and torn when dampened, that the helmets were not flexible, that rakes were procured though not used as they were not in conformity with the land conditions, that gas masks were inadequate, that the gas masks given to interfere fire could only be used for protection from the smoke as the masks for protection in the fire were different, and that gas masks with portable small oxygen tubes were needed.
98. During the interviews made with the management chiefs, by and large they stated that they had problems with the radio they used, that they had to recharge them during fire extinguishing works because they were quickly discharged, that the communication line of the radios were very limited, that they could not communicate with the helicopter, that they could not contact the fire watchtower from time to time, that they had to use their cell phones for communication, that there were problems in communication during big fires, that communications were interrupted because officials used the same channel for contacts, that since there were no staff members in the fire watchtowers outside the fire seasons radio communication could not be established with them during those seasons, and that communication was maintained through mobile phones. However, the authorities of the General Directorate informed

that the institution was equipped with the latest technology in terms of communication and that they had no problems.

- 99.** No staff is made available to the fire watchtowers except for the fire season, and fire extinguishing teams are established only in the fire season. Upon examining the documents of the General Directorate, it was understood that almost 20 % of the forest fires took place outside the fire season in terms of their numbers and the area they affected, and that these fires intensified in the northern and northwestern regions of Turkey. In 2000, the area damaged by the 99 fires occurring in one day before the fire season was 7130 hectares. 53.5 hectares of area was damaged in the fires dated December 30 and 31 within the borders of Trabzon Regional Directorate. 169 fires occurred only in March in 2001 and affected 676 hectares of area. The number fires occurring in March in 2002 was 162, and the damaged area was 314 hectares. There were 14 fires in short intervals in Mugla Regional Directorate within the first four months of 2003, 5 fires in Antalya Regional Directorate, and 4 fires in Trabzon Regional Directorate Surmene Management.

CONCLUSION AND RECOMMENDATION

- 100.** Qualifications such as having previous work experience in that region or having knowledge and experience in fire fighting are not sought while appointing the management chiefs and directors within the fire-sensitive regions. In some regions it was discovered that management chiefs did not stay in their posts long enough to know the region and fire; that turnovers were very rapid, that personnel changes could be done during the fire season; and that there were vacant chieftaincies in the fire-sensitive regions similar to the overall country. This situation creates a risk in terms of the forests protection activities.

The management chiefs and directors, particularly the ones to be assigned in the fire-sensitive regions should be selected from amongst experienced personnel who are trained on fire fighting, and they should stay in their posts long enough to know the characteristics of their region and fire, it is necessary

not to make any changes during or close to the fire season and not to leave any vacant positions in the sensitive areas.

- 101.** There is no technical personnel trained to be fire management experts, and it is understood that the trainings conducted on fire fighting and international developments are falling short of the expectations of the provincial organization.

It is necessary to take the needs of the personnel working in the provincial organization into consideration in the training programs conducted on the fight against forest fires, to provide the opportunity for following the developments in the world and to ensure specialization in fire management.

- 102.** The facts that the average age level of fire workers is high and that there are some workers among them who are not fit to join the fire extinguishing works will not only decrease the effectiveness of the fire extinguishing works but also create risk to life for the workers in this situation.

By considering that the fire extinguishing works are based on bodily work, health reports related to fire workers should be prepared carefully and the unfit workers should be assigned to other services.

- 103.** It is understood that the tourism facilities placed in the forest areas are very sensitive about the forests as forests are necessary for their commercial activities, and that the quarry enterprises refrain from situations which can bear risks of fire because they can be held responsible for the damages caused by fire and be given sanction such as the annulment of license. However, in the fires which occur as a result of malicious intent, or neglect or carelessness and where the perpetrator is unknown it is hard to tell to what extent the facilities and management in the forest areas are related to these. There is no procedure regarding the detection of fire risks born by those facilities and the identification and control of precautions to be taken in line with those risks.

Procedures should be defined for identifying what kind of risks the facilities in the forest areas bears in terms of fire, for the identification of the precautions to

be taken and for warranting the control and follow-up of those precautions. Since a significant part of forest fires are caused by humans, it is necessary to make research regarding the content of the relationships between forest-community in the regions where fires are more recurrent and the change tendencies and to take precautions in accordance with results of those researches.

- 104.** It was discovered that the refuse disposal areas and the energy transmission lines inside the forest areas carried risks of fire and that necessary precautions were not sufficiently taken in order to prevent the energy transmission lines from causing fires.

Disposal of refuse to forest areas should not be allowed as much as possible in order to prevent the spread of fires occurring in refuse disposal areas into the forest areas, safety lines should be built between those places and the forests and fire-resistance forestation should be carried out. It is necessary to transmit the energy transmission lines near the road or in the weak parts of the forest or, if possible, from underground; to use concrete or similar materials in utility poles instead of wood and to isolate them by concreting them under the poles; to ensure that their periodical maintenance are performed; and not to give permission to the building of such lines in the areas where intervention is not possible.

- 105.** Although there are criminal sanctions for it and there is a declining tendency in the recent years, it is impossible to prevent stubble burning and the fires caused by it.

Since it is understood that stubble burning activities cannot be easily stopped by applying criminal sanctions, such activities should be tried to be stopped by trainings and communicating with the villagers and safety lines should be built between the plantations and the forest.

- 106.** It is not possible to control the entries to and exits from the forest areas in the coastal areas, especially during summer, due to the shortage of personnel and vehicles in the forest organization.

The entries into the forest areas should be controlled with the law-enforcement officers, security teams should be empowered in terms of vehicles and staff members in the regions and periods bearing more fire risks, the opportunities for air-surveillance should be increased, the ways to get support from the volunteering environmental institutions in this matter should be investigated, the number of controlled picnic areas should be increased.

- 107.** It was discovered that the watchtowers, which were selected by sampling and visited, were in compliance with the standards, and that in only one of those watchtowers there were television antennas, base stations, transformer station and coast guard radio relays significantly blocking the vision.

Permission should not be given to the facilities blocking the vision around the fire watchtowers.

- 108.** The planned fire security roads and the firebreaks could not be completed. In some regions bearing the risk of fire, it was discovered that the firebreaks and fire security roads were insufficient or even inexistent, and that there were problems in building roads in the national parks and protection zones. When the existing works completed in this matter were compared to the planned amount of roads to be built, it was understood that the firebreaks could be completed approximately in 80 years and the fire security lines approximately in 37 years. Despite the importance of the firebreaks in transportation, it was observed that there was no consensus amongst experts regarding the necessity of fire security roads and lines.

It is necessary to accelerate the works for completing the firebreaks by prioritizing the risky regions; to carry out fire security line and security lane constructions in line with the conclusions to be reached by taking into consideration the international practices and techniques and by discussing their damages to the forest areas along with their benefits in terms of extinguishing works; to remove the thickness of the forest in places where firebreak construction is impossible.

- 109.** It was discovered that the fire extinguishing team workers lacked various supplies and aids which could ensure their safety such as fire resistant dresses and gas masks and it was understood that there were problems with the hand radios which maintain communication.

It is necessary to complete the supplies and aids for ensuring the safety of lives of the teams who participate in fire extinguishing works. It is also necessary to overcome the problems encountered in communication during fire extinguishing works by taking the opinions and suggestions of the ones who actually participate in those works into consideration.

- 110.** Lack of staff and fire extinguishing teams in the fire watchtowers out of the fire season can sometimes increase the damage caused by the fires occurring out of the fire season.

It is necessary to have staff in the watchtowers and extinguishing teams in the places carrying the risk of fire out of the fire season and where fires are more recurrent according to the recent year statistics.



111. Audit Criteria are defined as;

- Identification of the diagnosis of forest pests and diseases before they spread,
- training specialised personnel in tree and forest health, ensuring collaboration with the fields of science on this matter,
- taking necessary precautions for preventing the spread of diseases and pests and their entry from abroad.

112. This part of the report reviews;

- whether the forest pests and diseases are diagnosed before they spread into large areas,
- whether there are enough specialists in diseases and pests, to what extent support is received from other institutions,
- whether an effective work is carried out for stopping the existing diseases and pests and for preventing their entry from abroad.

113. The works pertaining to the fight against the forest insects and diseases are carried out by the Forest Pests Combat Units within the forest regional directorates in the framework of Communiqué no. 286. In the European forests, 23.7 % of the 10 million hectares of damage occurred in the last period were caused by the pests. In the forests of our country, the fight has been going on against more than 50 types of pests on an average land of 500-800 thousand hectares per year. The amount of money allocated for this fight varies from 3 to 5 million dollars every year. In the period between 1997 and 2001, the pests caused death and disease of 1.500.000 cubic meters of forest tree.

FINDINGS

- 114.** The pests and diseases which are currently causing epidemics and spreading widely in the forests of our country are Great Spruce Bark Beetle (*Dendroctonus micans*) and Pine Processionary Moth (*Thaumetopoea pityocampa*) along with Chestnut Blight (*Cryphonectria parasitica*), which is a new and rapidly spreading disease.
- 115.** Within the scope of the fight against the Great Spruce Bark Beetle, the pestilent of this insect, *Rhizophagus Grandis*, is reproduced in laboratory conditions and then set free in nature thus it is expected to restore the natural balance. The laboratory works, field work reviews and interviews, carried out particularly in the purview of Trabzon Regional Directorate, has indicated that a certain balance is coming into existence. Great Spruce Bark Beetle entered our country through the Georgia border; and passed from Artvin to Giresun. During the interviews it was understood that the barks of the trees that were transferred to the paper mill in Giresun as raw material supply were not cleaned sufficiently, as a result the insect was carried to this region along with the goods. In addition, since the trees that are logged or tumbled in the forest provide a breeding ground for the pests, these should be removed out of the forest promptly; however during the reviews it was noticed that this precaution is not executed from time to time. It is understood that, in accordance with the provisions of Agricultural Quarantine Regulation, the controls of the products imported from abroad are carried out solely by the agricultural engineers in the customs; and that some pests elude observation due to having different fields of expertise.
- 116.** In the reviews and interviews carried out in Istanbul Regional Directorate, it is found out that Black Pine, which was preferred for forestation works in the previous years, could not harmonize with the existing natural conditions; and that this tree gets weak and becomes vulnerable to the impact of the pests after a while.
- 117.** Mechanical and chemical combat is carried out against the Pine Processionary Moth which has become a widespread epidemic in our forests. However, the

direct impact of the change in the natural conditions on the insect population; and the decrease in mechanical combat as it is difficult and expensive and in chemical combat as it has negative impacts on environment result in the fact that this insect sustains its impact and damage. Pine Processionary Moth not only affects a tree's appearance and diminishes its growth and thus causes economic loss but also it renders the tree weak and vulnerable to the impact of the other pests. Pine Processionary Moth continues its existence and damage in all Mediterranean countries; and many countries are carrying out researches about the subject. During the interviews with the authorities, they stated that the researches performed in other countries were not followed adequately, that it was only through the introductory endeavors of publicists of private drug firms that information was received on the pesticides newly developed abroad.

118. It is stated that the Forestry Faculties provide general knowledge regarding the plants and pests and that as a result each forest engineer can be considered as an "Entomologist" in a sense. However, it is stated that sometimes expert opinion is needed about the type of the pests, their damage to the environment, their living conditions and the methods of combat. For this reason, Forestry faculties and institutes are contacted in order to receive information. However the relevant people state that there is need for expert personnel, especially for entomologists and biologists, in the processes of project preparation and implementation on the basis of regional directorates and special units.

119. It is understood from the interviews that seminars and informative meetings are held for trainings the personnel who are in the position of diagnosing the existence of new pests in the regions; however that the local and especially the international developments are not followed adequately; that there is no communication system which could transfer the local good practices, the achievements and experiences gained to the other regional directorates and members of the profession.

CONCLUSION AND RECOMMENDATION

120. Sufficient precautions cannot be taken so as to prevent the spread of the pests and the diseases inside and outside their current region. Since effectiveness

cannot be ensured in the control of the forest goods which are imported from abroad alive or logged, non-domestic pests have arrived at our country.

The trees with diseases or insects should be removed from the forest without damaging the other trees, they should be perfectly cleansed off their barks in order to stop the transfer of pests to the other regions, the expertise of forest engineers should be utilized when necessary for the control of imported forest products at the customs, and in the forestation works the kinds of trees that are suitable for the growing field should be preferred.

- 121.** There is not enough expert personnel on the forest pests and diseases. There is no system available for enabling the local and international transfer of information.

In order to increase the effectiveness in the field controls conducted on the basis of Management Chieftaincies; it is necessary to conduct regular trainings for increasing the information level of forest guards and the technical staff, to build an accessible information network so that the experienced gained within the scope of the fight against the pests by the managements and chieftaincies are shared across the whole general directorate, and to provide the opportunity to follow the methods and developments regarding the fight against the pest in other countries.



122. Audit Criteria are defined as:

1. the organizational structure should have sufficient capacity to be able to carry out a determined and effective fight against the forest crimes,
2. Forest personnel having against the pressure they may face while fulfilling their duties,
3. introducing certain standards in the distribution of forest guards, taking their numbers and trainings to a sufficient level,

123. This part of the report investigates;

- to what extent the organization structure and legislation are competent for the protection of forests,
- what kind of changes has happened in the forest-oriented illegal acts,
- what the difficulties encountered are in the implementation of the legislation for the fight against forest crimes,

FINDINGS

The system established in forest protection

124. Teamwork system has been adopted for the forest protection; collective, sectional, mobile and immobile safeguard teams consisting of forest guards have been established as affiliated to the forest management chieftaincies where forest guards are employed. The Communiqué no. 287 defines the duties of the safeguard teams, the number of the forest guards to work in these teams and the working principles in detail; and establishes a three-staged control system for auditing the works of the safeguard teams. Collective and sectional safeguard teams carry out their guarding works in accordance with the work programs to be prepared by the forest management chiefs and report the implementation to the management chief. The subject of whether the safeguard teams implement their work programs should be audited actually on

the field by the relevant forest management chiefs at the preliminary stage and by the forest management directors or his/her deputies at the second stage and guard reports on this subject should be drafted on this subject. Likewise, in accordance with the legislation, in forest regional directorates, the protection branch directors or the technical staff they will assign should also carry out audits of sampling nature based on the safeguard teams' reports and the reports of the chieftaincies and the directorates. It is observed that the workload of the management chiefs are too heavy to be fit into the regular office hours; that they go to the field way before working hours start for stamping and other services; that they stay in the fire area especially in the seasons of fire. During the interviews it is stated that the management chiefs, being charged with and responsible for the difficult task of open area protection as well as all forestry activities, cannot possibly audit the works of the safeguard teams in line with the provisions of Communiqué no. 287; and that the audit is just on the paper.

- 125.** The review of the General Directorate records indicate that there were 1.925 collective, 631 sectional, 25 mobile, 5 immobile safeguard teams by the end of 2002, and that there were 6.409 forest guards in those teams including the ones working in administrative positions and in the warehouses. Forest Protection and Anti-Fire Department documents identify that while the number of personnel required for the safeguard teams is 9.878, this figure is 5.559; that there are no personnel in 459 collective and 226 sectional safeguard centers; that there is only one guard in 289 collective and 414 sectional safeguard centers; and that 3.198 guards will reach the age of retirement in the subsequent 4 years.

THE CURRENT AND THE REQUIRED NUMBERS OF FOREST GUARDS IN SAFEGUARD TEAMS

SAFEGUARD TEAMS	THE REQUIRED NUMBER (NUMBER OF CADRES)	CURRENT NUMBER
COLLECTIVE	8523	4862
SECTIONAL	1255	632
IMMOBILE	18	8
MOBILE	82	57
TOTAL	9878	5559

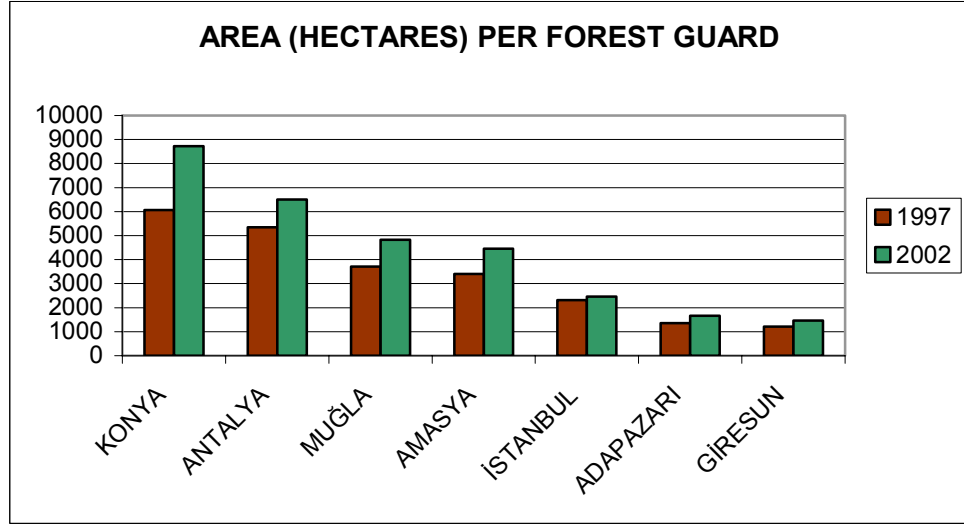
- 126.** Communiqué no. 287 defines the minimum and maximum numbers of forest guards in safeguard teams and the size of the areas they will perform

protection duty for. The examined documents indicate that the numbers of the guards working in safeguard teams are below the minimum figures defined by the Communiqué no. 287. While there should be at least three guards in collective safeguard teams and at least 2 guards in sectional safeguard teams, for instance there are 5 guards in total in the four sectional safeguard teams in Kemerburgaz Management Chieftaincy, eleven guards in total in the five collective safeguard teams in Manavgat Management Directorate, twelve guards in total in the seven collective safeguard teams in Alanya Management Directorate, four guards in total in the three collective safeguard teams in Cevizli Management Directorate. While the number of forest guards decrease due to the lack of recruitment of sufficient number of guards, the efficiency is also affected negatively because their average age is quite old.

AREA PER FOREST GUARD (HECTARE)

PROVINCES	YEAR 1997	YEAR 2002
KONYA	6058	8726
ANTALYA	5346	6507
MUĞLA	3712	4830
AMASYA	3404	4459
İSTANBUL	2317	2456
ADAPAZARI	1360	1658
GİRESUN	1215	1467

- 127.** In the regions which rank in the first places in terms of the crimes committed against the forest, it is observed that the number of forest guards has a declining tendency throughout the country. According to the diagnoses made between 1997 and 2002, the number of guards decline from 643 to 502 in Amasya, from 323 to 244 in Adapazari, from 246 to 198 in Antalya, from 363 to 290 in Muğla. The sizes of the area per forest guard also vary according to the regions. This size is 8.726 hectares in Konya, 6.507 in Antalya, 4.830 in Mugla, 4.459 in Amasya, 2.456 in Istanbul, 1.658 in Adapazari, and 1.467 hectares in Giresun.



128. According to the provisions of the Regulation on the Duties and the Working Principles of the Forest Guards, the forest guards, who are responsible for the management of the forests and the fight against fires and pests along with the protection of forests from illegal interventions, were used to be given one-year trainings until 1995, but starting from that date they have been continuing their jobs with a 15-day training they are given in the region they are appointed to. In the interviews made with the authorities, it is stated that this 15-day training being given to the guards, who are generally middle or high school graduates, is not sufficient; that problems occur particularly in the preparation of crime logs; that this situation slows down the legal procedure and also adds to the workload of the management chiefs. The General Directorate authorities inform that a two-month-training seminar is provided for the forest guards who are recruited at the end of 2003.

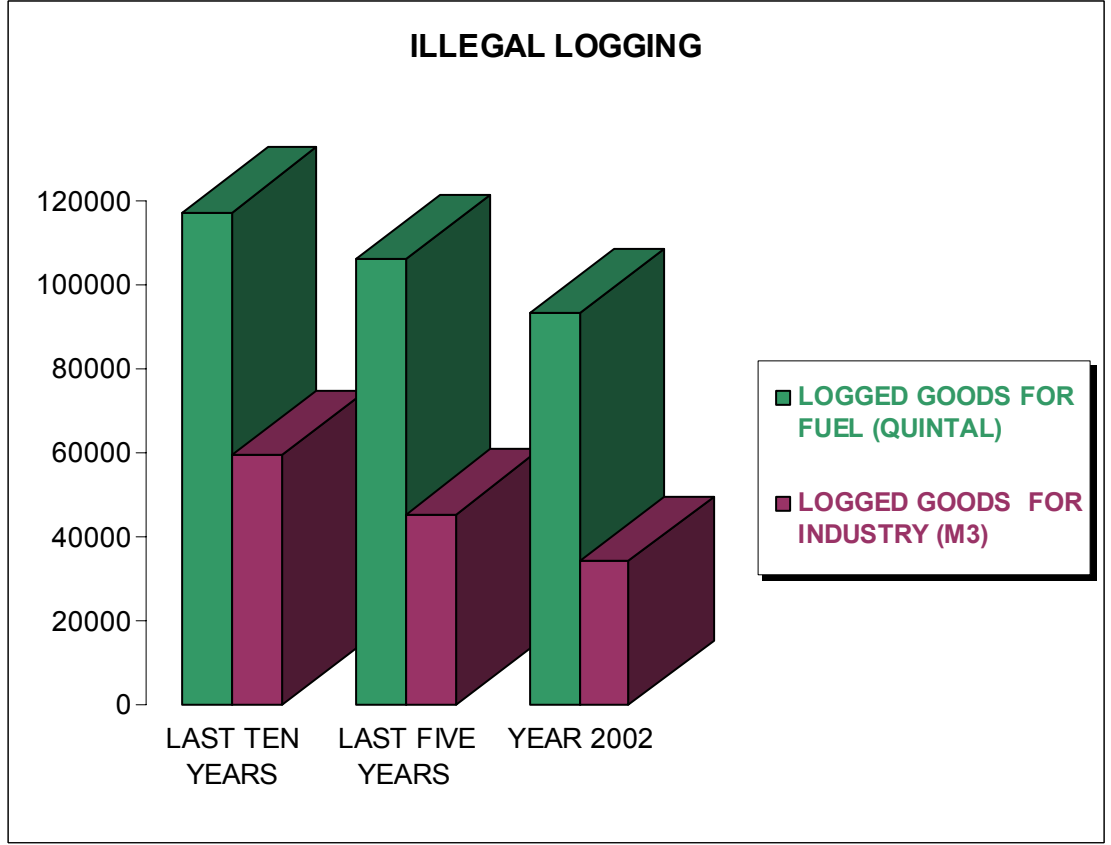
129. Management chiefs and directors, being responsible for planning and controlling the works of the safeguard teams, are expected to coordinate the relationships between the forest and the people residing in the settlement area within their sphere of responsibility in order to ensure the minimization of interventions to the forests. In the on-site review regions it is observed that the management chiefs and directors do not generally stay in their posts long enough to get to know the region and its residents closely. While “General

Directorate of Forest Regulation on the Appointment and Relocation of Technical Staff”, foresees that their compulsory working period in each service region and service area shall not be less than three years, when the documents gathered from the management directorates are examined, it is noticed that the average working period is less than three years in the management directorates of Antalya, Korkuteli, Gündoğmuş, Finike, Serik, Fethiye, Muğla, Marmaris, Dalaman, Milas, Köyceğiz, Yılanlı, Kemer, and less than two years in those of Cevizli and Manavgat. From the interviews made with the authorities, it is understood that this rapid circulation is not limited to the ranks of management chiefs and directors rather it is common for the overall forest organization.

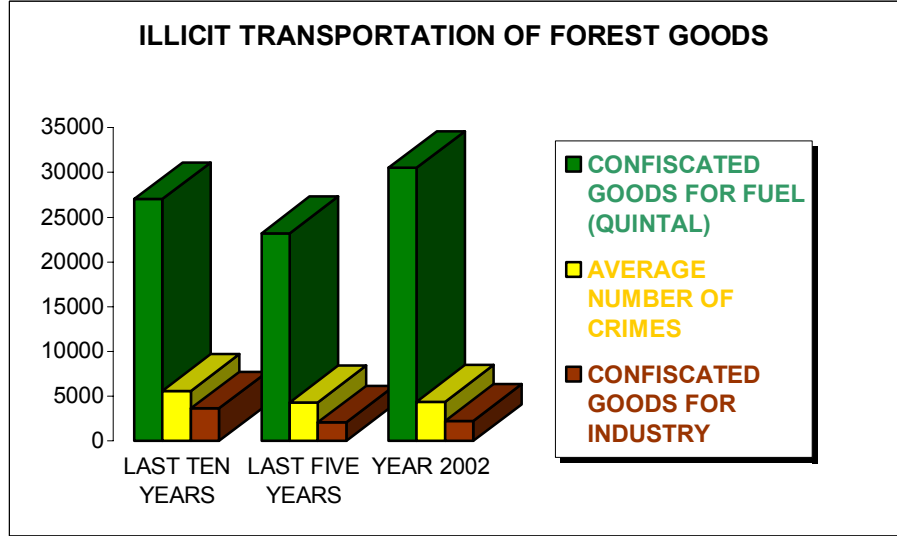
Development of forest crimes

130. The records of the General Directorate of Forest were examined; the information gathered is summarized as follows:

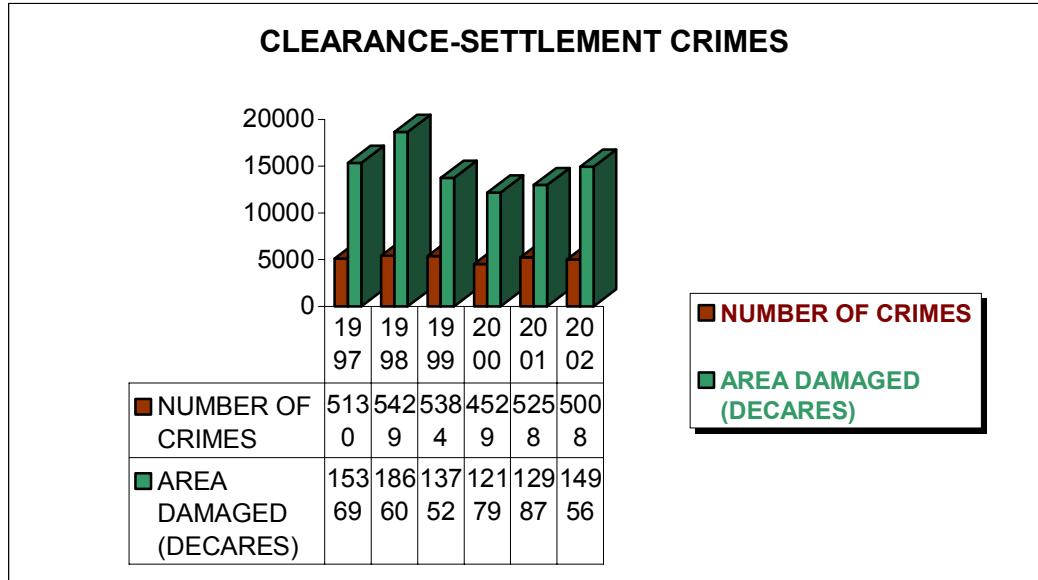
1. According to the reports written in the period between 1937 and 2002; it has been discovered that 4.202.965 m³ and 11.638.584 quintal forest goods were illegally logged as a result of 1.307.337 illegal logging activities. When the assessments pertaining to the last five and ten years are compared with the records of 2002, it is understood that the illegal logging activities has decreased throughout the country but the number of crimes in 11 regions including Antalya, Adapazarı, Balıkesir, Istanbul and Mersin have increased in 2002. While the perpetrators of a substantial portion of crimes cannot be identified, in 2002 the ratio regarding the identification of perpetrators increased as compared to the previous year and rose from 55 % to 61 %. In terms of illegal logging, the first provinces in rank in terms of the number of crimes are Amasya, Adapazarı, Zonguldak, Giresun, Trabzon and Istanbul Regional Directorates.



2. The first in rank are Amasya, Kahramanmaraş, Elazığ, Erzurum and Adapazarı Regional Directorates in terms of the number of crimes related to illicit transportation of forest goods and İstanbul, Adapazarı, Giresun, Elazığ and Antalya Regional Directorates in terms of the amount of goods confiscated. When the average number of crimes and the amount of confiscated goods in the last five and ten years are compared with the data of 2002, it is observed that, there is a decline in the averages for the last five years and that there is an increase in 2002 both in the number of crimes and the amount of confiscated goods.

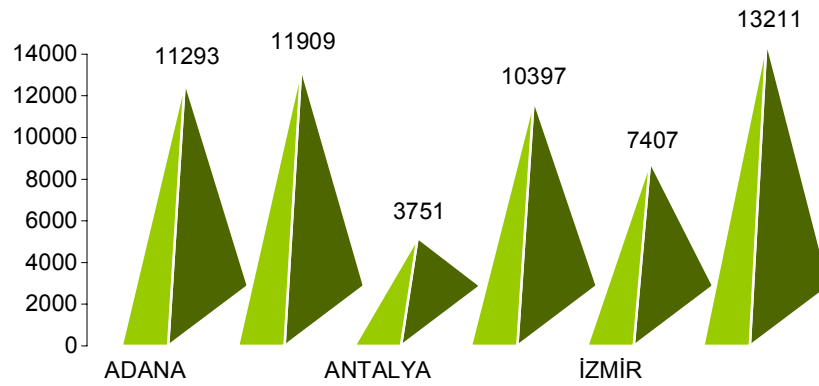


3. According to the records kept since 1937, a total of 645.962 crime logs were prepared for irregular land clearance and settlement in the forest area and as a result of those activities 2.279.791 thousand square meters forest was damaged. In 2002 Istanbul, Mersin, Amasya, İzmir, Giresun and Muğla Regional Directorates occupied the first ranks in terms of the said crimes, and those crimes gained an upwards tendency in Istanbul, Muğla and Trabzon regions. The annual data indicate an increase in the size of damaged areas throughout the country since 2000.



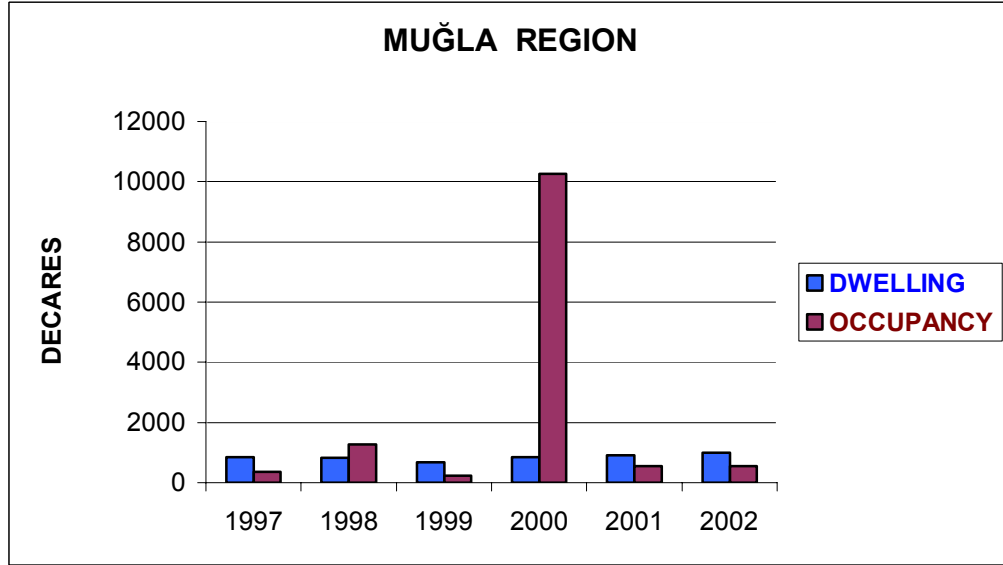
4. The area, which became subject to clearance and settlement activities and where the clearance and settlement activities were duplicated after the necessary legal proceedings were carried out, and became subject to occupancy and benefiting, assessed separately from the clearance and settlement activities as of 1997, is 108.458 thousand square meters in the period between 1997 and 2002. 57.968 thousand square meters of forest area which constitutes the 53 % of this area was occupied in 6 regions. While there is a declining tendency throughout the country, substantial increases were discovered in the in areas occupied in 9 regions including Ankara, Antalya, Balıkesir and Bolu in 2002, the areas had an increase of 3 times in Ankara region and more then 2 times in Antalya and Balıkesir regions, compared to the previous year.

1997-2002 TOTAL (THOUSAND SQUARE METERS) FOR OCCUPANCY CRIMES



5. A total of 266.693 logs were prepared for grazing animals in the forest area without permission. The average number of crimes in the last ten years is 5.334 and has a declining tendency. The number of crime logs prepared in 2002 is 3.051.
- 131.** An increase was observed in the forest crimes following the examination of the documents of the on-site audit areas were carried out:
1. A rising tendency has been observed in the Muğla district in recent years in illegal timber transfer besides reclamation and dwelling offences. 5.077 decares of land have been subject to reclamation and dwelling; whereas the occupied area has become 13.212 decares in the last six years in Muğla

district. As a result of the investigation carried out on the basis of management directorates, remarkable increases were observed in reclamation and dwelling and occupation offences at the borders of Fethiye, Köyceğiz, Marmaris, Milas Management Directorates; whereas reclamation and dwelling and illegal logging appeared in Aydın and Muğla Management Directorates in 2002. Perpetrators of 52% of the illegal logging for the last six years could not have been detected.



2. Illegal logging in the region of İstanbul has been on the increase since 1999 and perpetrators of approximately 36 % of the crimes could not have been detected. The number of offences in illegal timber transfers; whereas the surface area for the reclamation and dwelling offences has been on the increase since 2000. 10.398 decares of forestland were occupied within the period between 1997-2002 and the area subject to reclamation and dwelling became 7,5 fold of the previous year in 2002.

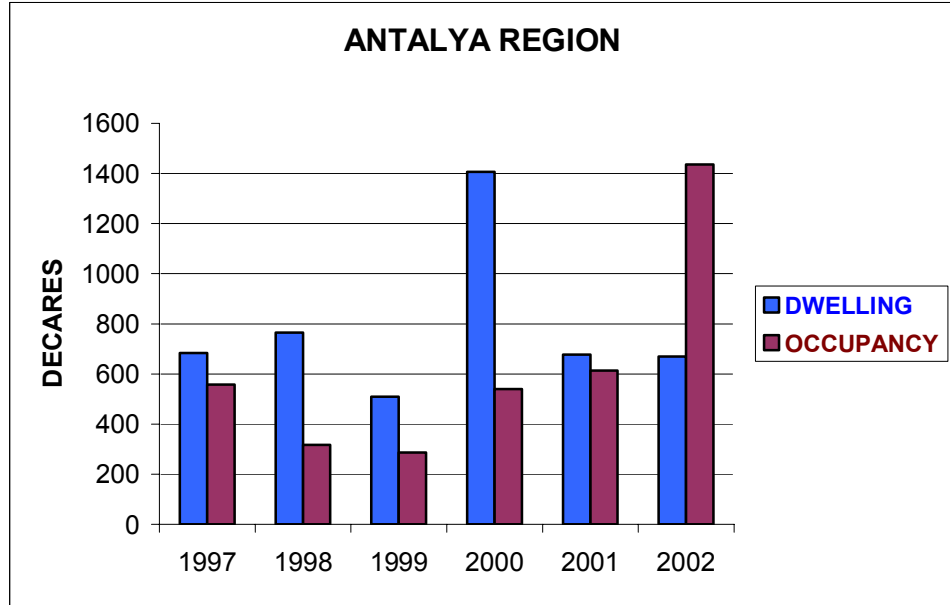
- ✓ Reclamation and dwelling and illegal loggings in Alemdağ, İstanbul, Kırklareli and Şile Management Directorates,
- ✓ Overall forest crimes within Çatalca Management Directorate,
- ✓ Occupation offences in Demirköy Management Directorate went beyond the average values of the last six years at a considerable extent in 2002.

3. An increase in occupation offence has been observed since 1998 and in the occupied area since 1999 in the region of Antalya respectively. An area of 3750 decares was occupied between 1997 and 2002 and 4710 decares were subject to reclamation and dwelling. The occupied area in 2002 became 2,3 fold of the occupied area in 2001.

In 2002, the followings were observed:

- ✓ Reclamation and dwelling besides occupation offences went considerably beyond the average values of the last six years within the borders of Serik Management Directorate. The average number of cases in illegal logging reached approximately six times of the average despite the decrease observed in the recent years.
- ✓ The surface area of land besides the quantity of the offences of occupation increased six and four times compared to the previous year and the average values of the recent years respectively and also a significant increase was observed in illegal logging in Antalya Management Directorate.
- ✓ A remarkable increase appeared in the surface area of land destructed by illegal logging besides reclamation and dwelling offences besides the quantity of extracted timber and occupation in Alanya Forest Management Directorate,
- ✓ The surface area of land destructed by reclamation and dwelling besides the quantity of extracted timbers increased compared to the previous year and also the last six years in Gazipaşa Forest Management Directorate.

- ✓ Illegal logging besides reclamation and dwelling offences were on the increase in Gündoğmuş Forest Management. Reclamation and dwelling offences increased in comparison with the previous year and the average values of the last six years in Kumluca Management.
- ✓ A considerable increase was observed in the number of reclamation and dwelling offences in the occupied area in Taşağıl Management compared to the previous year.



Difficulties encountered in the fight against forest crimes

- 132.** It was detected upon the examination of the documents that forest guards, management chiefs and directors were attacked by guns on duty and these attacks resulted in wounds and deaths. Management chiefs told in the interviews that they had to be involved in gunfight especially with the illegal loggers.
- 133.** The officials said in the interviews that problems were experienced in the enforcement of the court decisions regarding the illegal interventions to forestlands. They also told that the lack of an execution team and the challenges against security in addition to various pressures render the demolition of the unlicensed buildings difficult. In the on-site audit areas, constructions accommodating thousands of people and supported by municipality services were observed, which had been subject to demolition by

court decision. However, situations that the execution of these orders became technically impossible were experienced.

- 134.** The examination of the General Directorate's registers revealed that the execution of an area of 5536 decares subject to 1067 files out of newly committed 5008 reclamation and dwelling offences and that 257 mountain houses, 27 slum houses, 45 summer houses, 37 stone houses and 35 concrete buildings besides 156 miscellaneous facilities, the court decision of which were finalized were demolished in 2002.
1. The destructed surface area became 2875 decares that was subject to 388 reclamation and dwelling offences according to the registers of 2002 in İstanbul. The executions regarding 134 decares of land and 2 slum houses, 6 stone houses, 12 concrete buildings and 37 miscellaneous facilities that were subject to 29 offences in recent reclamations. However, the court decisions regarding 5 summerhouses, 468 slum house, 120 stone house, 205 concrete building, 19 building blocks, 17 public buildings and 51 miscellaneous facilities could not be implemented.
 2. Reclamation and dwelling cases were observed more densely in 2002 within the borders of Alanya, Serik, Manavgat, Taşagül, Kumluca ve Gündoğmuş Management Directorates compared to others in Antalya district. The executions regarding a large number of the recent reclamation and dwelling cases throughout the region; but the court decisions could not be put into effect for an area of 54 decares of land, 12 mountain houses, 95 slum houses, 1 stone house, 99 concrete buildings, 3 building blocks and 10 miscellaneous facilities, which were subject to 74 offensive acts.
 3. Upon the examination of the registers, it was found that the court decisions could not be put into effect in Muğla district and that there were 2 summer houses, an area of 95 decares, 2 slum houses, 57 stone houses, 10 concrete buildings and 14 miscellaneous facilities subject to 76 acts of offence.

CONCLUSION AND RECOMMENDATION

- 135.** The minimum number of forest guards that should be available within the protection teams cannot be ensured. An effective struggle at the right time with the forest crime cannot be implemented due to the inadequate number of personnel and vehicles in spite of all the self-sacrificing efforts of the forest

management. Besides the inadequacy of the number of the forest guards, their incompetence in terms of training increases the workload of the management chiefs.

The minimum number of forest guards that should be available within the protection teams should be ensured. Allocation of the officers according to the areas should be made considering the variety, peculiarity and course of occurrences of the forest crimes. Additionally, forest guards should have a systematic and comprehensive training in order that they can fulfill their duties efficiently. It is thought that our forests will face a great risk if the system of forest guards is abandoned without first establishing a new protection system.

- 136.** The forest management combating the illegal acts originating from the rents for lands; the low-income level of the forest villages is vulnerable against pressures. The personnel bear safety risks both in protective activities and during the implementation of the court decisions. It is observed that the personnel mobility in many forest management chief offices is so high that they cannot have enough time to get to know the area and the local people.

Arrangements to impose responsibility on the villages in or near the forest should be made regarding the protection of forests and so the residents should be made to participate in the protective activities. The personnel of the provincial organizations should remain in office long enough to be aware of and be able to produce solutions to the problems of the area they work in. The necessary precautions should be made available in order to indemnify them from pressures concerning the protection activities and the implementation of the court decisions. Besides, the safety of these personnel should be guaranteed.

- 137.** Although a declining tendency is observed in the forest crimes in all over the country, the areas subject to reclamation and dwelling and occupation are on the increase where the lands are highly priced. Illegal structuring within the forestlands reached enormous levels rendering the retrieval of the forests and implementation of the court decisions impossible in some areas indicates that there exists risk.

Measures should be taken against this sort of structuring in order to forestall the loss of the forestlands via illegal logging. Additionally, coordination with the municipalities should be established to prevent municipality services to be brought to these areas. Legal arrangements should be made in order to introduce legal sanctions against the officials of the municipalities or other institutions bringing services like water, electricity and sewage to these areas. The duty of monitoring these should be transferred to the management of forests.

- 138.** The internal control system arranged in detail in the relevant Communiqué could not be fully enforced. Additionally, management chiefs who have responsibilities in all activities concerning the forests cannot efficiently fulfill their follow-up and supervision duties over the protection teams due to their hectic workload.

Specialization within the central management should also be achieved in the provincial organizations. Besides, the sphere of duties of the management chiefs should be restricted and their numbers should be increased. A deeper cooperation with the security forces should be established in order to ensure more efficiency in the execution of the struggle with the illegal activities against the forests.