

Les questions d'estimation des terres dans les demandes d'expropriation en Turquie

En Turquie, les demandes d'expropriation de terre présentent des problèmes à la fois pour l'État et pour les propriétaires. Un nombre important de procédures d'expropriation entraînent des désaccords entre l'État et les propriétaires, ce qui se traduit par des poursuites judiciaires. Cela est souvent dû au fait que la valeur de l'expropriation est différente de la valeur vénale, ce qui fait qu'il y a des problèmes quant aux méthodes de calcul des prix des terres retenues pour obtenir la «valeur réelle». Il y a également trois autres questions importantes: i) les retards de paiement d'indemnités complémentaires aux propriétaires; ii) la prise de possession sans expropriation officielle; et iii) l'expropriation de facto.

La Turquie ayant manifesté sa volonté d'adhérer à l'Union européenne, cette question nationale prend actuellement des dimensions internationales. Les actions en justice contre les exécutions d'expropriations en Turquie commencent déjà à être portées devant la Cour européenne des droits de l'homme. Pour éviter ce problème, l'indemnité versée pour les terres expropriées doit être déterminée selon certains critères objectifs d'estimation des terres.

Cet article décrit le système et processus actuels utilisés pour le calcul de la valeur des terres pendant les procédures d'expropriation en Turquie. Il essaie de comprendre pourquoi la valeur de l'expropriation est souvent différente de la valeur vénale dans le contexte de certaines juridictions civiles. Il analyse enfin la façon dont les récents amendements apportés à la loi du pays sur l'expropriation peuvent conférer davantage de droits aux propriétaires fonciers en Turquie.

Cuestiones relativas a la valoración de tierras en la realización de expropiaciones en Turquía

La realización de expropiaciones de tierras en Turquía presenta problemas tanto para el Estado como para los propietarios de tierras. Un número significativo de procedimientos de expropiación causan desacuerdos entre el Estado y los propietarios de las tierras, lo cual conduce a pleitos. A menudo esto se debe a que el valor de la expropiación es distinto al valor de mercado, de modo que se plantean problemas respecto al modo en el que se determina el precio de las tierras para obtener el "valor real". Asimismo se consideran otras tres cuestiones fundamentales: i) los retrasos en el pago de compensación adicional a los propietarios de tierras; ii) la confiscación sin expropiación oficial; iii) la expropiación de facto.

A causa de la prevista adhesión de Turquía a la Unión Europea, este problema nacional está convirtiéndose en la actualidad en un problema internacional, como demuestra el hecho de que ya se hayan empezado a presentar demandas ante el Tribunal Europeo de Derechos Humanos contra expropiaciones realizadas por Turquía. Para prevenir este conflicto, la compensación otorgada por la tierra expropiada debe determinarse con arreglo a criterios objetivos de valoración de tierras.

En este artículo se analizan el sistema y el proceso actualmente seguido para determinar el valor de la tierra en el contexto de los procesos de expropiación en Turquía. Además, se examina por qué el valor de expropiación es a menudo diferente del valor de mercado en el contexto de algunas jurisdicciones civiles. Por último, se examinan las enmiendas introducidas en 2001 en la Ley sobre Expropiación de Turquía y el modo en que éstas pueden conceder más derechos a los propietarios de tierras en dicho país.

Land valuation issues of expropriation applications in Turkey

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In Turkey, land expropriation applications present problems for both the state and landowners. A significant number of expropriation implementations cause disagreements between the state and landowners, resulting in court proceedings. This is frequently because the expropriation value is different from the market value, so there are problems in how land prices are determined in order to obtain "real value". There are also three other key issues: (i) delays in payment of additional compensation to landowners; (ii) seizure without official expropriation; and (iii) de facto expropriation.

With Turkey bidding to join the European Union, this national issue is now becoming an international one. Lawsuits against Turkish expropriation implementations are already being brought to the European Court of Human Rights. To avoid this problem, the compensation paid for expropriated land needs to be determined according to some objective land valuation criteria. However, Turkey lacks both the necessary data and an efficient land assessment policy for determining value.

This article discusses the system and process currently used for determining land values in expropriation implementations in Turkey. It looks at why the expropriation value is often different from the market value in the context of some civil jurisdictions. Finally, it discusses how recent amendments to the country's expropriation law have given more rights to landowners in Turkey.

INTRODUCTION

Turkey has a compulsory cadastral system and there is an emphasis on the importance of land and human-related activities. Based on the country's constitution, every citizen has property rights. These private rights can only be restricted when a public interest is concerned. To regulate these public land requirements, Turkey ratified Expropriation Law No. 2942 in 1983. Since then, many expropriation cases have been brought to the courts by landowners dissatisfied with the compensation payment. The origin of this problem lies in the determination of the land price in order to obtain the real value. A significant number of expropriation implementations cause disagreement between the state and owners. With Turkey bidding to join the European Union, this

national problem will become an issue of international law as lawsuits against expropriation implementations in Turkey are now being brought to the European Court of Human Rights (ECHR).

This study has examined the cases related to Turkish expropriation appearing before the ECHR over a ten-year period (data obtained from the ECHR Web site at www.echr.coe.int/ECHR). In the light of this issue and the significant numbers of such cases coming before the national courts, the Turkish authorities amended the law in order to reduce the number of objections to expropriation. Expropriation Law No. 2942 has been significantly modified by Law No. 4650, effective as of April 2001. However, there remains a need to provide an effective land assessment procedure for expropriation in Turkey.

The Member States of the Council of Europe affirm under Article 1 of the Protocol to the Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocol No. 11 (Council of Europe, 2004):

“Every natural or legal person is entitled to the peaceful enjoyment of his possessions. No one shall be deprived of his possessions except in the public interest and subject to the conditions provided for by law and by the general principles of international law.

“The preceding provisions shall not, however, in any way impair the right of a State to enforce such laws as it deems necessary to control the use of property in accordance with the general interest or to secure the payment of taxes or other contributions or penalties.”

According to the established case law of the ECHR and the former European Commission of Human Rights, three distinct rules apply to ownership of property. The first rule contains a general guarantee of the right to property (Article 1, first paragraph). The second covers deprivation of possessions and subjects it to certain conditions (Article 1, first paragraph). The third rule recognizes that the contracting states are entitled, among other things, to control the use of property in accordance with the general interest (Article 1, second paragraph).

Under Turkish law, the state is entitled to acquire private lands for a public purpose in return for payment to the affected owners and users of the land within the framework of the Expropriation Law. Article 46 of the Turkish Constitution allows for the confiscation of property with compensation by a public agency for the public benefit. The seizure of movable and land property belonging to private persons by public corporations and bodies to be used for public purposes without the consent of the owner in accordance with the decisions made by authorized bodies and with the cost prepaid is termed “expropriation”. Real estate subject to private ownership may be expropriated by the competent administrative authorities where required by the public interest. Expropriation can be

realized only for the purpose of providing public services or conducting public initiatives. Compensation for expropriated real estate shall be paid in cash and in advance or, in specific situations foreseen by the law, in equal instalments.

BACKGROUND TO TURKEY'S EXPROPRIATION LAW

During the Ottoman period, no legal readjustment regarding expropriation or eminent domain was observed until the administrative reforms of 1839. During this time, Islamic law was in force in Turkey and expropriation through purchase of the land from the owner was rare – most public services were provided through charitable foundations. The first mention of expropriation can be found in an 1848 legal document on building regulations (*Ebniye Nizamnamesi*), which was drawn up to enable a readjustment of city sites demolished by fires and the opening of roads in Istanbul. This makes the following statement regarding expropriation: “in the case that the government intends to purchase a land, the owner shall be obliged to sell it or to demolish the harmful structure desired to be eliminated”. The conditions, methods, authorities of and payments for expropriation are mentioned in different legal texts issued after this date. Item 21 of the first constitution (adopted in 1876) stipulated that expropriation could be carried out only on condition that it was for public interest and in return for cash payment.

The “Decree on Expropriation in the Name of Public Interest” (passed in 1879) was the first comprehensive law on expropriation in the Republic of Turkey. This was replaced by the “Municipal Expropriation Law” in 1939 and the “Expropriation Law” in 1956 (Ersoy, 2005). Today, the Expropriation Law (No. 2942) and laws concerning amendments thereto (including Law No. 4650) apply.

THE PROCESS

Commencement of expropriation

In Turkey, expropriation procedures begin following a decision by the state

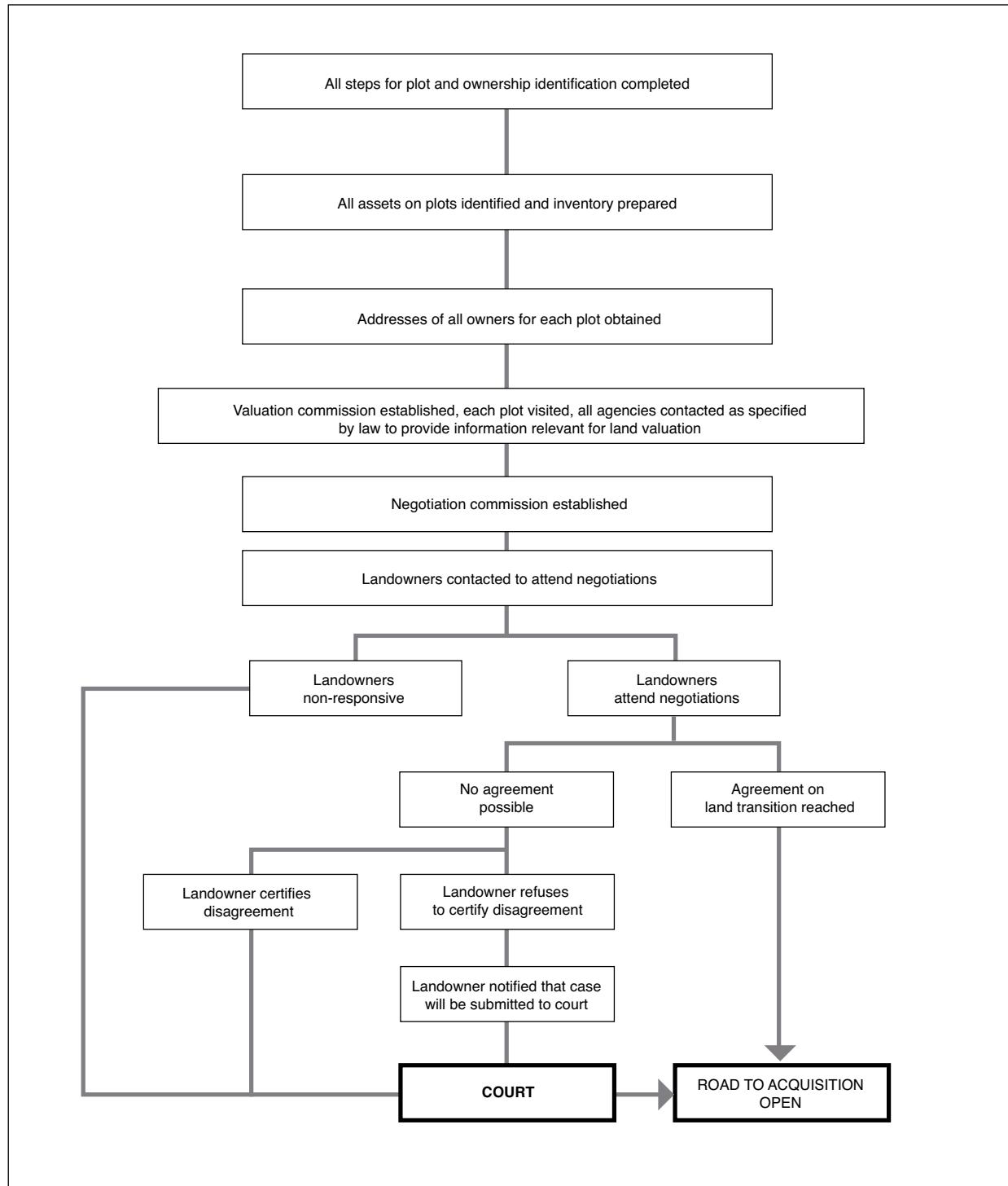


FIGURE 1
Main steps in the expropriation process, Turkey

Source: IFC, 2002.

or the municipal authorities that the implementation of a project will necessitate the acquisition of land for public use (Uzun, 2000). Feasibility studies that have been conducted for each subproject provide information on the need to carry out an expropriation process. Figure 1 describes the main steps in the expropriation process.

Valuation

A valuation commission assesses the value of the land to be expropriated. According to Article 8 of the Expropriation Law, expert opinion on the value of the land must be sought. This can be provided by local and central agencies, real estate agents and chambers of commerce. The standard applied in assessing the value of the land and

property assets is that of full replacement cost. Valuation procedures, as specified by law, allow for a fair and transparent process of compensation to all owners.

The process of valuation begins with the selection of a valuation commission within the expropriation agency (Uzun and Yomralioglu, 2005; Yomralioglu, Uzun and Nisanci, 2002). A valuation commission is initially established by the authorities with six participants assigned to undertake the task of evaluation and valuation of the land to be expropriated. The participants are nominated by authorities and include relevant municipal and utility officials. The responsibilities of the valuation commission are:

- assess the land value by conferring with the relevant state authorities and local real estate agencies;
- compile the acquired data and analyse them according to a prescribed methodology;
- assign monetary values to the land and other immovable assets.

The valuation commission calculates, on a plot-by-plot basis, the capitalized income loss from assets, and this is applied to both temporary and permanent expropriations within the confines of the law. In calculating the net income from land, the following are taken into account:

- type and quality of the property or resource;
- surface area;
- the value of all distinctive characteristics that can affect the overall value of the land;
- tax statements, if any;
- an estimate made by official authorities on the date of expropriation;
- the net income of the land, immovable property or resources according to the locations and conditions valid on the date of expropriation, and the determination of its value based on its original condition. The formula used is $K = R/f$, where K is the value (expropriation compensation), R is the net income (gross income minus production costs) and f is the capitalization rate (a type

of risk related to the capital invested in agricultural land);

- the sale amount of similar land sold before the date of expropriation;
- official unit prices, construction cost estimates and depreciation of buildings on the date of expropriation;
- other objective measurements that may influence the determination of valuation.

The valuation of agricultural land rests on the capitalization of net income from the land. As such, it takes into account all of the above considerations. However, urban land is not valued on the basis on its net income but on the comparison of its market value before and after construction (Nisanci, 2005; Yomralioglu, 1993).

Announcement

The announcement of intent to expropriate occurs when the municipality or the municipal utility notifies the owner of the property to be expropriated by an official registered letter. The notification must: (i) mention the intent of the municipality or municipal utility to purchase the land through a negotiated settlement; (ii) describe clearly the steps in the land acquisition process; and (iii) describe clearly the provisions for appeal available to the landowner at each relevant step.

Transaction

The compulsory purchase of land can take place through two processes: (i) negotiated settlement; or (ii) court settlement.

Negotiated settlement

Where the owner of the land agrees to a negotiated settlement, then the discussions between the state and municipal utilities will finalize the transaction. The state or municipal utilities should make it clear that negotiations will last for no more than three months and provide the landowner with a description of the land acquisition steps and the owner's rights to due process and appeals at each step. Failure to reach a negotiated settlement will result in a court settlement. Once there is agreement on the price, the expropriation should be registered

in the land office and the expropriation fee will be paid, as per Article 8 of the Expropriation Law.

Court settlement

A court settlement will occur if: (i) the negotiated settlement fails; or (ii) the landowner, after receiving notification from the state or municipal utility, declines to negotiate. Prior to requesting a court settlement, rights to due process and appeals will be explained fully to the landowner. A lawsuit will be filed by the state or municipal utility with a relevant court for valuation and registration, pursuant to Article 10 of the Expropriation Law. The basis for calculating the compensation payable for the land and property is full replacement value.

Non-agreement

In the event of non-agreement, the institution applies to the court for a land appraisal and for registration of the land in the name of the institution with rights of use, possession and control. A public announcement of the process is made through the media and the court summons the landowner. A trial date is set within a 30-day period. If the landowner and institution do not agree before the court on the land price, the court assigns independent experts to appraise the land within ten days. The court then sets a new trial date within 30 days and submits the results of the appraisal to the institution and to the landowner. In the event of non-agreement on this court-supervised appraisal, the court can appoint other appraisers within a 15-day period. Following the second appraisal, the court will establish a final expropriation price.

The following steps will then be taken:

- The price determined will be deposited in a national bank account in the name of the landowner.
- A bank receipt for the deposit will be submitted to the court.
- The court will decide on the title registration change and communicate the new title deed registration to

the Land Registry Directorate. This completes the registration in the name of the institution with rights of use, possession and control. The landowner still has the right to appeal the valuation decided in the court, but not the expropriation of the land (Figure 2).

TURKISH EXPROPRIATION CASES AND THE EUROPEAN COURT OF HUMAN RIGHTS

Between 1 January 1992 and 30 March 2003, 354 expropriation cases concerning Turkey came up before the ECHR. Tables 1 and 2 show the distribution of the number of cases and the annual number of cases and aggregate amounts for pecuniary damage paid to applicants by Turkey's expropriating authorities.

Types of cases

The ECHR does not rule on land valuations that have been assessed by the valuation commissions and determined by the domestic courts; the land's value is not reassessed by the ECHR. In all cases of expropriation, the court examines only whether a fair balance has been maintained between the demands of the general interest and the requirements for the protection of the individual's fundamental rights. For applications lodged with the ECHR, applicants refer to Article 1 of the Protocol to the Convention for the Protection of Human Rights and Fundamental Freedoms as amended by Protocol No. 11 (above).

Based on the above article, the expropriation cases considered in Tables 1 and 2 can be placed into three main categories (Table 3).

Delay in payment of additional compensation

In these cases, the compensation applicants had not received a payment reflecting the increase in inflation during the period between the date the amount was fixed and the date of actual payment. Abnormally lengthy delays in the payment of compensation for expropriation lead to increased financial loss for those whose

EXPROPRIATION LAW NO. 2942

(D. 4650)

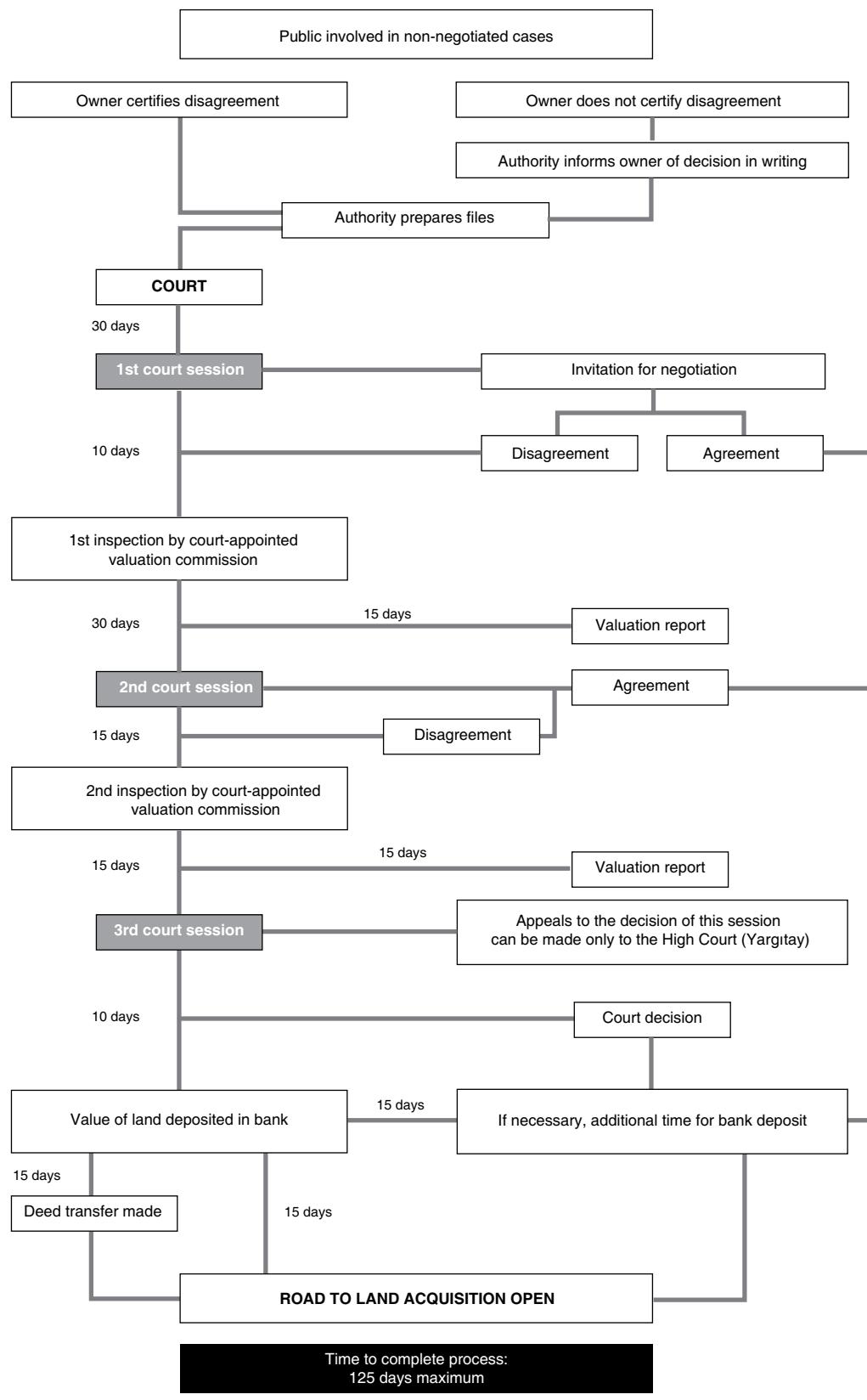


FIGURE 2

Steps in the expropriation process in the event of non-agreement, Turkey

Source: IFC, 2002.

TABLE 1
Expropriation cases brought before the ECHR and involving Turkish institutions, 1992–2003

Expropriating authorities	Cases (no.)	Percentage (%)
National water board	206	58.0
National roads and highways authority	107	30.3
Provincial private administration offices	11	3.2
Municipalities	9	2.5
Ministry of Construction and Settlement	8	2.3
Ministry of Defence	7	2.0
National airports	6	1.7
Total	354	100

TABLE 2
Pecuniary damages of expropriation cases brought before the ECHR and involving Turkish institutions, 1992–2003

Year	Cases (no.)	Total pecuniary damage (EUR)
1992	140	1 042 134
1995	7	669 796
1996	13	6 755 569
1997	20	2 399 567
1998	19	2 271 984
1999	40	3 163 591
2000	14	1 630 370
2001	44	785 614
2002	36	249 059
2003	21	550 678
Total	354	19 518 362

TABLE 3
Distribution by type of expropriation cases brought before the ECHR and involving Turkish institutions, 1992–2003

Types of cases	Cases (no.)
Delay in payment of additional compensation	344
Seizure without an official expropriation	9
De facto expropriation	1
Total	354

land has been expropriated. This can place them in a position of uncertainty, especially when the monetary depreciation is taken into account.

Applicants to the ECHR complained that the additional compensation for expropriation that should have been obtained from the authorities had fallen in value. This was because the default interest payable had not kept pace with the high rate of inflation in Turkey. Therefore,

injured parties claimed for losses sustained as a result of inflation, citing Article 1 (above). As a result, the ECHR determined that there had been a violation of said Article 1. The relevant rule has now been changed following amendments to the Expropriation Law (which includes Law No. 4650).

Seizure without an official expropriation

These cases concerned plots of land that had been seized illegally and without any payment to the owners by the administration for different purposes, such as dam and road construction. Turkey's domestic courts had cancelled the registration of the applicants as owners of the land and transferred the property to the national authorities on the grounds that it had been occupied by them in the general interest for more than 20 years without interruption. It was time-barred as the authorities had been in possession of the land for more than 20 years. This rule set out in Article 38 (Extinction of rights) of the Expropriation Law provides:

"In the case of immovable property subject to expropriation where the expropriation procedure has not ended or of immovable property whose expropriation has not been requested but which has been assigned to public-service use or on which buildings intended for public use have been erected, all the rights of owners, possessors or their heirs to bring an action relating to that property shall lapse after twenty years. Time shall begin to run on the date of the occupation of the property."

The ECHR decided that there had been a violation of Article 1. On 10 April 2003, the Constitutional Court annulled Article 38 of Law No. 2942.

De facto expropriation

The applicants claimed that they had been deprived by the authorities without compensation of plots of land that belonged to them. The ECHR ruled that the administration should pay the applicant compensation, starting from the date of de facto expropriation.

TABLE 4
Main modifications to the Expropriation Law

	Before	After
Respect for customary ownership rights and traditions	Earlier land acquisition practices did not require full investigation of customary rights and rights of heirs. The authority expropriating the land could obtain rights to its use by merely depositing the cash value of the land estimated by a local land commission and leave it to the owners to sort out their claims. Thus, rightful customary owners or heirs had to wait for the completion of lengthy legal processes before receiving payment.	The law now requires the authority, not the people, to determine these rights. The authority is responsible for the identification of the rightful owners. It is responsible for locating these owners and proving that it has carried out the negotiation process.
Putting people rather than their assets first	Dialogue and partnership with landowners and their communities in the land acquisition and resettlement action plan preparation process was not required. There was a clear assumption and practice that people would not agree with the land valuation presented by the authority. If the assets lost were of low value, as was the case in linear projects, people were simply forced to accept the little they were offered; if the assets were valuable, they were required to endure never-ending court procedures.	The law now forces the authority to treat all owners equally and with respect. It forces a partnership between the owners and the authority. It also ensures that all claims to land are recognized and considered by the authority. By making it difficult, time-consuming and costly for the authority to acquire land outside the framework of a negotiated solution, it forces the authority to be far more people-focused and far more participatory than before.
Assuming the financial burden of ownership establishment and non-negotiated solutions	Affected parties were required to bear the cost of non-negotiated solutions. This meant that the owners were responsible for seeking recourse. Even where they joined with other affected parties to reduce the transaction costs, they still had to pay a significant portion of the compensation they received for legal fees. This situation created a particular disincentive for populations affected by linear projects as owners lost small portions of land and expected to receive a limited amount of compensation; as such, they could not risk high legal expenditures.	The law now passes the transaction costs of land acquisition from the owners to the authority. It thus provides equal right to recourse to the poor and the wealthy. It also ensures equity among other social groups, regardless of ethnicity, etc. The costs of owner identification, owner notification and negotiation meetings are borne by the authority. If negotiations fail, it is the authority that has to turn to the courts and thus bear the relevant expenses. The authority also assumes the costs of the establishment of the customary rights and the rights of the heirs.
Land for land	Only cash payments were offered in return for expropriated land, except in cases where investment projects caused resettlement. International policies, however, favour land-for-land arrangements.	Under the Baku–Tbilisi–Ceyhan Pipeline Project, the land requirement from any single owner is relatively small. Moreover, the landowners will be able to use their land once the construction is completed. Even where some smallholders may lose a substantial portion of their land to a project, they would rather receive cash compensation and buy replacement land themselves if they so wished. Past attempts to provide replacement land have only met with discontent as the market performs better than the public agencies.
Interest income from compensation	People could not earn interest payments at the market rate if they challenged their compensation payments. This caused major damage in an economy where banks offered nearly 100 percent interest.	Disputed payments kept by a trustee for an owner now earn interest at the market rate. Thus, by challenging the valuation decisions, owners will not incur a financial loss.
Payment for assets	Owners had to wait many years for payment if they disagreed with the initial price offered for their land and other assets. Each legal claim took years to reach a conclusion (in a highly inflationary economy). Even when the courts granted the claim of an owner, the compensation value would be eroded; thus, the owner had to initiate another appeal. There are outstanding valuation claims associated with projects that started several decades ago.	The law now requires that full payment for the land/assets be made in the personal bank account of a legitimate owner before the authority can acquire the land. It stipulates that the courts give priority to these hearings and obliges the legal system to act within pre-established deadlines. Valuation claims are heard and settled before the ownership transfers are made. No land/assets can be acquired or expropriated prior to full cash payment; thus, there is no risk of erosion of compensation payments.

Source: IFC, 2002.

MODIFICATIONS TO THE EXPROPRIATION LAW

The Constitution of Turkey as amended in October 2001 includes major elements to protect the public interest and private owners during the expropriation process. Private users cannot benefit from expropriating public lands and assets

without paying compensation to the public at large. Even when land is acquired for public interest, expropriation agencies cannot benefit from the expropriation of private lands and assets without paying into a private bank account – in advance of actual land appropriation and project

construction – the value of the expropriated assets. On the other hand, the project gains use of the expropriated land and assets, and project construction can begin once this legal path has been followed and completed.

Significant amendments to Expropriation Law No. 2942 will mean significant advantages for people affected by projects that require land expropriation. The authority carrying out the expropriation process is now obliged to determine the value of immovable assets and then invite the landowners to negotiate if they disagree with the value proposed. The payments for the expropriation must be made to the relevant people within 45 days following the agreement date.

Until recently, public authorities that needed land for “public interest” could acquire land without a genuine effort to establish “rightful owners” and without due process. However, the Expropriation Law as amended by Law No. 4650 requires that owners be identified and that their addresses be established. The law demands that the owners be contacted in writing, and asked to come forward and negotiate a price for their land. Should negotiations fail, the land cannot be acquired prior to a court decision. The court will seek proof that every effort has been made to locate the owner before making its decision. In addition, some further significant modifications have been made to the Expropriation Law (summarized in Table 4).

CONCLUSIONS

The Constitution of Turkey gives every citizen property rights; these private rights can be restricted only where the public interest is concerned. In Turkey, compulsory acquisition of private land has been regulated by the Expropriation Law since 1983. Since then, many expropriation processes have been brought to the courts by landowners because they have not been satisfied with the compensation payment. The origin of this problem lies in how the land price is determined in

order to obtain the real value. A significant number of expropriation implementations have caused disagreement between the state and landowners. As has been noted above, now that Turkey is seeking to join the European Union, this national problem has become an issue of international law with lawsuits against Turkish expropriation implementations being brought to the ECHR.

The Turkish authorities have realized the importance of this issue and have amended the law significantly in order to reduce the number of such cases. Today, public authorities that require land for “public interest” can no longer acquire land without a genuine effort to establish “rightful owners” and without due process. However, an effective land assessment procedure in expropriation still needs to be developed in Turkey.

REFERENCES

Council of Europe. 2004. *Protocol to the Convention for the Protection of Human Rights and Fundamental Freedoms, as amended by Protocol No. 11 (Paris, 20.III.1952).* European Treaty Series No. 9. Strasbourg, France, Council of Europe, Treaty Office (also available at conventions.coe.int/Treaty/en/Treaties/Word/009.doc).

Ersoy, M. 2005. *The development of implementation tools in planning laws in Turkey and some proposals.* 8th International Conference of the Asian Planning Schools Association, 11–14 September, Penang, Malaysia.

IFC (International Finance Corporation). 2002. *Baku-Tbilisi-Ceylon Oil Pipeline Project, Resettlement Action Plan* (available at www.ifc.org/ifcest/btc.nsf/Content/Turkey).

Nisanci, R. 2005. *The production of pixel based urban land value maps with nominal valuation method using GIS.* Karadeniz Technical University, Turkey. (Ph.D. thesis)

Uzun, B. 2000. *To investigate highway-property relations in respect of zoning rights and to propose a model using land readjustment approach.* Karadeniz Technical University, Turkey. (Ph.D. thesis)

Uzun, B. & Yomralioglu, T. 2005. *An alternative approach to land compensation process to open urban arteries.* TS15.3, FIG Working Week 2005 and GSDI-8, 16–21 April, Cairo.

Yomralioglu, T. 1993. *A nominal asset value-based approach for land readjustment and its implementation using geographical information systems*. Department of Surveying, University of Newcastle upon Tyne, UK. (Ph.D. thesis)

Yomralioglu, T., Uzun, B. & Nisanci, R. 2002. Land taxation system in Turkey. In *Proceedings of International Symposium on GIS*, pp. 841–843. Istanbul.

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