

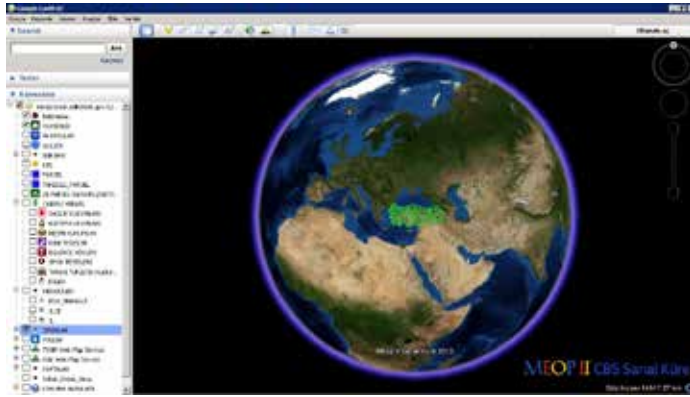
CASE STUDY: LAND MANAGEMENT

How a national agency efficiently manages 3.7 million parcels of public lands by using Başarsoft's specially designed data environment

Client: General Directorate of National Property; manages > 200,000 km² of public lands in Turkey

Challenge: To provide an easy-to-use system for managing data on 3.7 million parcels of public lands

Solution: Başarsoft's scalable GIS environment, synthesizing all data into an instantly updatable system providing easy monitoring of daily operations, analyses and planning



**GENERAL DIRECTORATE
OF NATIONAL PROPERTY**

Executive Summary

In line with its vision, the main function of the General Directorate of National Property is to efficiently manage over one-fourth of the total land area in Turkey, allocating national parcels for public services, and selling or renting some parcels to get revenue. Başarsoft's specially designed National Property GIS System (MEOP GIS) enables the Directorate to manage and monitor each and every parcel in every region of the country in a seamless database; to compare the unit prices of neighboring parcels; to evaluate the status of immovable assets; and to create value in the country's economy.

Business Challenge

In the past, the Directorate did not have a centralized system, and each province was working separately. Before Başarsoft was asked to develop a map-based data environment, a text-based central database system had been set-up for the Directorate, but that system was inefficient and difficult to use because individual parcels could not be monitored in relation to other parcels, and the items in the text database were not reliably linked to the geographic locations of parcels. The text system did not support the storage of spatial data. There were two records for national parcels, one in the General Directorate of Land Registry and Cadastre, and another in the General Directorate of National Property. These redundant data had to be unified. Başarsoft's system was designed to meet new requirements as they arise. For example, for efficient evaluation of parcels, essential data include location, topography, rent status, distance to seaside or highway, slope and aspect. Also, changes in status and unit price must be updated continuously. A further need for accurate and reliable data is that these are used in creating value for public financing or supporting farmers through new laws and regulations on topics such as parcels which were originally forest but are now occupied by agriculture or residential buildings, or parcels which are unregistered but are occupied.

Customer Profile

An agency of the Ministry of Finance, the General Directorate of National Property is responsible for registering immovable assets throughout Turkey, for recording transactions, for allocating lands toward other governmental needs such as schools, hospitals, free-zones, universities, etc., and for renting and selling public lands.



CASE STUDY

A third need is to have an open, auditable and reportable system with fast access which can simultaneously present 2D or 3D features, and which can serve multiple internal or external users.

Solution

Başarsoft has started to build an integrated GIS system with MEOP database in Sybase. First the map parcels and textual parcel related information are integrated with unique IDs. The user based and distributed files are combined into a central system.

The system is designed for desktop, and 2D and 3D web browsing systems. All the internal units in provinces and subprovinces can access the system.

Any transaction on a parcel, such as renting, selling, allocation, change in right to use, deforestation or burning, can be queried and reported on the map.

Başarsoft's GIS system can also enable comparison of selected parcels in terms of any related information, within a given district or province.

The redundant data in the two General Directorates' databases were cross-checked and unified. Problematic or suspicious parcels were reported for further investigation and correction.

Information became sharable with external departments via Web Mapping (WMS) and Web Feature (WFS) Services. Orthophoto images in external departments are acquired via WMS and WFS services.

For intuitive use and navigation, an integrated local 3D web based a virtual globe application was developed with Google Earth Enterprise System, for example to check slope and aspect of a parcel.

For field use, applications were designed for web based and mobile users. Directorate staff can easily connect to the central database to access and update information on any parcel.

Results and Benefits

- Evaluation of deforested/burned areas previously took 3-5 years, but now takes only 3 months
- Management and monitoring of old and new parcel transactions can be displayed on the map
- Many external map data can now be accessed via web services
- All local units of the Directorate are now using the same system
- Any required text/map based reports can be displayed within the system
- A nationwide integrated 3D Web server application was developed for efficient access and display



Technology Used

Sybase Database
MapInfo Professional GIS
MapXtreme 2D Web based GIS SDK
Google Earth Enterprise 3D/2D Web and Desktop based map display and analysis

About Başarsoft

Başarsoft designs and supports software environments that enable businesses to synthesize all data geographically. This way, all available knowledge becomes easily and instantly usable for day-to-day operations and strategic growth. Başarsoft was founded in 1997, currently has 250+ staff serving 1500+ clients in Europe and the Middle East, and has years of experience working with partners including Google, Yandex, MapInfo, and all telco operators in Turkey. Başarsoft is ready to provide geographic perspective for your company's vision.



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