

# Hybrid Method Application in Land Consolidation Studies

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**Key words:** Land distribution; Land management; Land readjustment

## SUMMARY

Land Consolidation (LC) is one of the most effective land management approaches used to improve the agricultural sector, protect natural resources, and contribute to the development of rural areas all over the world and in our country. The block reallocation phase in land consolidation studies is a process that directly affects the success of land consolidation projects and the project is one of the most time-consuming process steps. Scientific studies for block reallocation, which prioritize the requests of business owners and enable the block reallocation to be done in a shorter time, are increasing day by day. In this study, a new hybrid algorithm-based algorithm (AT-FGA) was developed using genetic algorithm and fuzzy logic algorithms that provide block reallocation in land consolidation projects by using Ac#305;öz Land Consolidation Project data. Block reallocation is done automatically with this developed model. In addition, interview priority and block priority reallocation models were applied for Ac#305;öz AT and the results obtained were compared using three models according to the number of parcels, average parcel size, number of parcels per enterprise, number of shared parcels, width / length ratios of parcels and distance of parcels to village center.

According to the results obtained, the consolidation rate in the interview-based reallocation model is 27% while the hybrid model is 38%. after the AT, in the interview-based model the number of shareholding parcel is 25 and the hybrid model is 8. According to the number of parcels per enterprise, the hybrid model is also more successful than the interview-based method. It is also observed that the AT-FGA reallocation model is generally more successful than the interview priority reallocation model when compared with the preferential distribution models after the AT.

The results obtained from the application area show that the FGA block reallocation model can be accepted by farmers. According to these results; AT-FGA block reallocation model developed for

block reallocation in land arrangement works can be proposed.

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Hybrid Method Application in Land Consolidation Studies (9180)  
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FIG Congress 2018  
Embracing our smart world where the continents connect: enhancing the geospatial maturity of societies  
Istanbul, Turkey, May 6–11, 2018