

# Evaluation of Turkish Land Readjustment

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**Keywords:** Land readjustment, Evaluation framework, Benchmarking, Turkey.

## SUMMARY

Land readjustment (LR) is an important technique used in a variety of countries to realize the development plans by converting rural land into urban land and providing city infrastructure. Comparing to other land assembling methods (e.g., expropriation, and voluntarily boundary exchange), LR provides a better land management in theory. However, in practice, although the aim and the process are similar around the world, countries have different degrees of success in application of the LR and only a few countries succeed using the positives of LR. For the others, the procedure is still not introduced or the usage and success levels are far behind the expectations which reveals the need for a comprehensive evaluation. The research to date on LR has generally tended to focus on either describing the main concepts such as the usage, principles, advantages and disadvantages of the existing LR implementations rather than evaluating their implementation.

Recently, researchers have shown an increased interest for the development of the evaluation frameworks, particularly for assessing the land administration (LA) systems. These studies put in a global effort to establish an accepted systematically evaluation methodology, and a research cooperation on LA. While LA attracts that much attention on evaluation, the literature failed to establish an internationally accepted methodology, and a research cooperation for a global evaluation mechanism for LR. The literature is mostly centered on describing the main concepts such as the usage, principles, advantages and disadvantages of the existing implementations. Lack of an agreed methodology resulted in academicians using various criteria or success factors to evaluate and compare LR systems and concentrate on different aspects without a common concept.

The purpose of this article is to measure and compare the performance of Turkish LR strategies and reveal the performance gaps that needs improvements. For this aim, we use an evaluation framework to measure the extent in which the good practices of an ideal system are meeting in different evaluation levels and aspects by using performance indicators. By using the good practices together with the indicators it is possible to enable countries to conclude whether the strategies could have been achieved or not, furthermore, reveal the improvements in the LR system. Moreover, using an evaluation framework could clearly address the data that is needed to be collected and analyzed; to evaluate how well the countries LR system is functioning and to compare the related strategies against the expected results of an ideal LR. By evaluating and comparing the results with the best or the expected results of an ideal LR system, the performance gaps of the Turkish LR strategies that need improvements have been revealed.

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## 1. INTRODUCTION

The purpose of this article is to measure and compare the performance of Turkish land readjustment (LR) strategies with the intention to use the wisdom of the ages to overcome the challenges of the modern world. By comparing the results with the best or the expected results of an ideal LR system via an evaluation framework, it is possible to find out the performance gaps of the strategies that need improvements. For this aim, the proposed article uses an evaluation framework (Yilmaz et al., in press) which identifies the performance indicators of an ideal LR system to measure the extent in which the good practices are meeting in different evaluation levels and aspects of an ideal LR.

LR is a land-management tool, used to reorganize land for urban development by forming its location, shape and size according to the spatial plans, and provide land needed for public purposes such as roads, and green areas (Seele, 1982). Briefly, the LR projects start with a formal decision which can either be a private initiative as is the case in Japan, France, Sweden and South Korea, or a public initiative as implemented in Germany, Japan, Turkey, Finland, Australia, South Korea and Indonesia. Then, the LR project area is formed by mathematically adding or pooling the parcels, which are located within the project boundaries. In some countries including Japan, Germany, Finland, Australia, South Korea and Turkey where publicly initiated projects are implemented, decisions on LR projects may be made directly by local governments without asking the consent of landowners. In such cases, the process is handled as an administrative issue. However, in some cases the support of landowners can still be obtained to a limited extent at the beginning of the publicly initiated LR projects. On the other hand, in privately initiated projects the main condition is to ensure a consensus between the landowners as applied in France, Sweden and Taiwan. Otherwise, the project cannot be initiated. However, in some countries such as Germany and Japan the privately initiated project do not need the approval of all landowners. If two-thirds of the landowners owning two-thirds of the total land area agree to participate in the project, then it becomes compulsory for the others. Following the participation process, the area allocated for public purposes according to the spatial plans are extracted from the project area. In Japan, Germany, France, Sweden, Finland, Australia, South Korea and Taiwan, landowners make more contributions in terms of reducing their land to recover the cost of the project. This land portion is called “reserve” or “cost equivalent land” and is sold at the end of the project to pay for costs such as planning, administration and construction. Then, the remaining area is subdivided into urban parcels according to the master plan, and allocated to the landowners based on their shares in the project. The calculations in the allocation process could be area or value-based. While some countries have only one allocating base (only land based in Turkey and Indonesia, and only value based in Sweden, France and Australia), in some other countries such as Japan, Germany, South Korea and Taiwan, the calculations regarding the allocation can be based on either an area or a value. In Germany, Japan, France, Sweden, Finland, Australia, South Korea, India, and Taiwan, after the allocation of the land, the value

difference between the initial and allocated plots is calculated for each landowner and compensated through money payments (Yilmaz et al., in press).

Recently, UN-Habitat has proposed a new approach for land readjustment called PILaR – Participatory and Inclusive Land Readjustment, which adapts the traditional tool of LR to developing country contexts by placing an emphasis on it being participatory in process and inclusive in its outcome. The new methodology aims to achieve a more inclusive and participatory engagement process in which pro-poor and gender responsive outcome are to be realized. Moreover, UN-Habitat aims at introducing PILaR as a new service for national governments and local authorities to better tackle urbanization challenges, such as urban sprawl and the slums, through a rights-based approach where participation and inclusiveness and of managing private and public sector roles and responsibilities will be central (UN-Habitat, 2014).

Comparing to other land assembling methods (e.g., expropriation, and voluntarily boundary exchange), LR provides a better land management theoretically. However, in practice, only a few countries succeed using the positives of LR. For the others, the procedure is still not introduced or the usage and success levels are far behind the expectations. For instance, in Germany, LR was intensively employed in the postwar reconstruction of the damaged cities and the accommodation of the recent wave of urbanization (Doebele, 1982). Similarly, LR is the key part of the urban planning system in Japan. Since 1954 when Land Readjustment Act was put into effect in Japan, LR has been used for the development of new cities, prevention of disorderly growth, and urban renewal and reconstruction (Hayashi, 2000; Montandon and Souza, 2007; Nishiyama, 1987). During the 1954-2003 period, approximately 30% of the urban area was developed through LR projects in Japan (Archer, 1997; Sorensen 2000a and 2000b). In Spain, although the practical experience of LR was unsatisfactory until the mid-1990s, after the legal reforms with the Valencia Regional Planning Law of 1994, LR (and if necessary, compulsory LR) became the standard procedure. Since then, LR has been implemented all around the Valencia Region as well as other Spanish Regions in hundreds of cases, involving thousands of hectares. In addition, almost all the major real estate developments in Spain are performed using LR (Blanc, 2008; Munoz Gielen and Korthals Altes, 2007).

Contrasting the mentioned best practices in Germany, Japan and Spain, LR is perceived as a rather unwieldy and time-consuming process in France (Sonnenberg, 1996; Viitanen, 2000). LR in France is, in quantitative terms, not more important than other development procedures, and permanently under 5% of new developments (Renard, 2003). Similarly, in Finland, the new Real Property Formation Act came into force in 1997, which redefined the former urban LR procedure that had been in force for 36 years, but had hardly ever been put into practice (Viitanen, 2000). Finally, in Turkey the legal arrangements regarding LR have been included in numerous laws and regulations since the second half of the 19th century (Çete, 2010), however, comparing to other land assembling methods, LR has not been used widely in implementations of development plans as only about one-third of all urban parcels is produced with LR projects (Turk, 2005). Consequently, the countries in which LR is unsuccessful or not accepted as the main land management and land assembly tool should be evaluated to clarify the problems that need to be solved. To this end, countries should test their existing LR system and compare the results with the best or expected results of an ideal

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system to identify the problems in their strategies and the performance gaps in their strategies that needs improvements. Therefore, this study aims to evaluate the Turkish LR by using the indicators of the good practices of an ideal LR system that is defined within the evaluation framework and measure the extent in which they are meeting in different evaluation levels and aspects and to find out the performance gaps of LR strategies that need improvements. For this aim the evaluation framework for LR studies (see: Yilmaz et al., in press) have been used.

## 2. EVALUATION FRAMEWORKS

Evaluation is the systematic collection and analysis of data in order to assess the strengths and weaknesses of programs, policies, and organizations to improve their effectiveness (Baird, 1998). When evaluation involves good practices and indicators, it eliminates the subjectivity and provides an objective basis for learning from the success and experience in improving the performance of others. Good practices can be the main goals or the results expected from an ideal, efficient or well-functioning system and indicators are the ways to measure the state or level of the good practices. Good practices and indicators are reference points for evaluations and constitute a critical component of an evaluation framework (UN-Habitat, 2003). Recently, researchers have shown an increased interest for the development of the evaluation frameworks, particularly for assessing land administration (LA) systems. For instance, in order to assess the success and effectiveness of a LA system, International Federation of Surveyors (FIG) suggested a set of criteria in 1995. In 2004, Daniel Steudler developed an evaluation framework based on five evaluation levels, i.e. policy level, management level, operational level, external factors and review process. These levels are adapted and developed from the organizational pyramids and divided into evaluation aspects. For each aspect, good practices and their indicators are developed and the evaluation framework is tested with case studies in Switzerland, Sweden, Latvia and Lithuania (Steudler, 2004). Rajabifard et al. (2006) developed the cadastral template, which is mainly a standard form to be completed by cadastral organizations presenting their national cadastral system. The cadastral template (<http://cadastraltemplate.org>) now represents the results of 34 country templates based on 6 statistical and 2 descriptive indicators. Chimhamhiwa et al. (2009) presented a conceptual model for measuring end-to-end performance of land administration systems based on cross-organizational business processes. Bandeira et al. (2010) developed a comparative methodology for the evaluation of national land administration systems and applied it to the cases of Honduras and Peru in order to evaluate their systems. Zahir, et al. (2010) developed a framework for applying the concepts of total quality management to LA system and presented and discussed the case of Pakistan.

These studies put in a global effort to establish an evaluation methodology that is systematically accepted, and a research cooperation on LA. However, even though LA attracts great attention on evaluation, the LR literature is mostly centered on describing the main concepts such as the usage, principles, advantages and disadvantages of the existing implementations. In the related studies, evaluations and comparisons are also made; however they only cover the main process or the key characteristics defined by the authors. The literature failed to establish an internationally accepted methodology, and a research cooperation for a global evaluation mechanism of LR systems. Therefore, the lack of an agreed methodology resulted in academicians using various criteria or success factors to

evaluate and compare LR systems and concentrate on different aspects of LR without establishing a common concept. By using the good practices together with the indicators it is possible to enable countries to conclude whether their strategies could have been achieved or not, furthermore, reveal the improvements in their LR system. Moreover, using an evaluation framework could clearly address the data that is needed to be collected and analyzed; to evaluate how well the countries LR system is functioning and to compare the related strategies against the expected results of an ideal LR (Yilmaz et al., in press).

## **2.1 Evaluation of Turkish Land Readjustment**

The main organizational structure of the evaluation framework used in this study have been adapted from Steudler (2004) and Steudler et. al., (2014) and then improved by making essential modifications concerning the purpose of LR practices by Yilmaz et al., (in press). In the framework, for each evaluation level; related aspects, good practices are identified and have been supported with the evidence from the literature. In addition, a set of indicators have been identified to measure the extent which good practices are meeting in different evaluation levels and aspects. As a result, the evaluation framework for LR studies with good practices and indicators for each evaluation aspect under the defined evaluation levels have been provided. To evaluate Turkish LR, we use the indicators of this framework (Yilmaz et al., in press) and analyze the success levels of the good practices in Turkey. The framework consist of 4 main levels; 2.1.1. Policy Level, 2.1.2. Management and Operational Level, 2.1.3. External Factors Level and 2.1.4. Review Process Level which are detailed below.

### 2.1.1 Policy Level

A policy is the expression of principles or plan of actions used to reach explicit long-term goals and could be defined as political, administrative, management and financial mechanisms arranged for the delivery of programs and services to the public over a fixed time. In Turkey, until 2010, there was no particular strategy document or an action plan concerning the government policy on urban land. It could only be gathered from the legislation, development plans, the Urban Council meetings, reports and declaration, etc. The decision of a national strategy document firstly takes part as “establishing an integrated urban development strategy at the national level” in the Turkey's Programme for Alignment with the Acquis (2007-2013) as legislation envisaged to be enacted in years 2010-2013 (reference number: 22.1013.2.02). Later, it is taken into consideration in the 2010 programme of the 9<sup>th</sup> Development Plan. Based on this program, Turkey has developed the Integrated Urban Development Strategy and Action Plan, 2010 – 2023 (KENTGES) in 2010 and the Ministry of Environment and Urban Affairs (MOEU) has been tasked to implement the plan. Finally, KENTGES, which establishes principles, strategies and actions for providing a healthy, balanced and livable urban development and identifies the implementation principles, and connects them to an action programme, becomes the most comprehensive and up to date policy instrument concerning sustainable urban development in Turkey.

The evaluation of the policy level in Turkey includes analyzes of the KENTGES, related legislation, and Urbanization Council reports which consists of four aspects; 2.1.1.1. Land policy aspects, 2.1.1.2. Legal aspects, 2.1.1.3. Financial aspects and 2.1.1.4. Social aspects that are detailed below.

### 2.1.1.1 Land Policy Aspects

A land policy concerning LR should focus on the legislation, organizations and procedures to provide sustainable urban land development in a socially and financially effective way. Based on the framework (Yilmaz et al., in press), LR should be included in the countries national strategy documents and actions, strategies and precautions should be defined. In Turkey, LR is not the main land assembly tool and this is also revealed by the Urban Transformation, Housing and Land Policies Commissions report in the Urban Council meeting in 2009. According to the report, LR have been planned to be the the main tool for the municipalities for producing serviced urban land, however, this issue did not appear in the following strategy document such as the 9<sup>th</sup> Development Plan (2007-2013), the 10<sup>th</sup> Development Plan (2014-2018) and KENTGES (2010-2023). As a summary, LR used to be included in the strategy documents until 2009, after than, urban transformation has been adapted as a government policy and LR becomes less important.

The urban land policy concerning the LR should have measures to prevent plot speculation. However, the cause of the land speculation in Turkey is the gaps in the legislation and the structure of the process. Neither the legislation nor the design of the process has measures to prevent or reduce land speculation. For instance, after the legal conversion of rural to urban land, due to the financial problems of the municipalities, installation of the infrastructure areas and the physical conversion is generally delayed, which increases the land prices beyond the productive value of the land. In KENTGES, it is considered to make regulations that prevent land speculation until 2014, however, there are no legal measures yet.

The pressure of the urbanization in most countries necessitates LR to provide a quick and simple implementation possibility. By defining a relation between the projects' initiation and indicators of the urbanization, it could be possible to face the urbanization. In Turkey, the initiation of the projects has no direct relation with the urban land needs. However, the serviced urban land stock in a city should be more than (or at least equal to) the number of the building licence given in previous year and in addition preparation of the Development Plan is related to the population. In Turkey, as being compulsory project, legal conversion of the rural land into urban land is one of the fastest among the other countries, nevertheless, due to the lack of cost recovery and value capture tools and budgetary problems of the municipalities; realization of the infrastructure is generally delayed. As a result, the duration of the projects depends on the size of projects and the financial possibilities of the municipalities. The necessity of accelerating the production of urban serviced land is also revealed in the 10<sup>th</sup> Development Plan, however, could not be achieved yet. One solution could be including the infrastructure constructions and costs in the LR process by providing the cost recovery and value capture tools. Conversely, enabling an easy and rapid availability of urban serviced land should not mean a plan-independent implementation. As a policy, LR should be carried out in conjunction with the plans and implemented systematically. In Turkey, higher plans (Development Plans) govern the next planning stage and lower plans (Subdivision Plans) are consistent with the higher plans. In addition, implementation programs, which guides the timing, location and extent of the projects and enables making plans for future projects should be defined, and sanctions should be applied in cases where implementers do not have implementation programs (Turk, 2005; Turk, 2007). In Turkey, based on the Article 10 of the Development Law No. 3194 dated 3/5/1984, municipalities should prepare the five-year

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implementation programs within the three months from the date of entry into force of the Development Plans. However, the legislation does not include sanctions for the municipalities that do not take the responsibility of preparing their implementation programs. This issue is also mentioned in the KENTGES, (Action 2.1.3) as strengthening and harmonizing the relationship between five-year implementation programs and the strategic plans of the municipalities, and arranging these programs according to the spatial plan phases, and not letting housing activities start before the subdivision plans and realization of the technical infrastructure. Moreover, in order to implement the development plans with the LR projects in a comprehensive, integrated and efficient manner; a development agency either public, private or community-based should exist. Based on the Article 8 of the Development Law only public LR projects could be realized as the initialization of the LR projects are in the responsibility of the municipalities within municipal areas and of the governorships outside of these areas. Furthermore, under certain conditions The Ministry of Environment and Urban Planning could also carry out the LR projects in special areas. In KENTGES with the Action 1.2.1 under the Strategy 1.2. Ministry of Public Works and Settlement is planning to be restructured and transformed into a kind of public development agency.

In many poorer cities, spatial forms are largely driven by the efforts of low-income households to secure land that is affordable and in a reasonable location (UN-Habitat, 2011). In these cities lack of low-cost housing, and serviced land is one of the critical factors affecting the formation of informal settlements (UNECE, 2009). In order to promote social and economic objectives of land policies, the capacity of the LR method for affordable housing should be increased. In Turkey, using LR for low-cost housing is impossible with the current status of the legislation. The areas that could be provided with the LR is detailed in the Article 4 of the Development Law and social housing or low-cost housing areas are not included. Therefore, there is no possibility of using LR for affordable housing or land for these projects could not be provided with LR. Although KENTGES promotes low-cost housing projects with different actions, none of them mentioned or assigned LR as a tool.

In LR, one of the most critical stage is the allocation process which gains importance by ensuring the equality and fairness (Turk, 2007). Selection of the allocation base is important for the success of any LR project, and needs a compressive evaluation. Generally, the allocation base should be chosen as land area only in homogeneous areas that for the other areas, land value should be used. In Turkey, all the calculations of the LR projects are based on the area of the parcels. Basically, the total area of the parcels in the LR project is calculated by summing up the parcels and then the infrastrure areas are deducted from this sum and distributed back to the landowners based on their share in the project. In the allocation, mainly two main criterion is taken account. Firstly, the allocation of the readjusted plot should be provided in its original location, or close to its original location. Secondly, if the landowner has an existing building fulfilling requirements of the development plan, then the allocated area should include this building. In KENTGES, enabling fair distribution and developing new allocation models that bases the value are promoted; however no progress has been made yet.

The evaluation of the Turkish LR under the land policy aspects is summarized below, in the Table 1.

<b>Table 1: Indicators of the Land Policy Aspects</b>	<b>Evaluation of Turkish LR</b>
Existence of a government policy for LR (y/n)	Yes however, partially defined and urban transformation projects are considered more important than LR after 2009.
(1) Is there any measure to reduce or prevent plot speculation? (y/n) If yes, list of the available measures	No, however it is planned.
(1) Initiation of the LR projects has a relation with any urbanization indicators such as the urban population, housing needs, etc... (2) Is it possible to implement the projects simply and fast? (3) What is the average time for projects?	(1) Initiation of the projects is associated with the urbanization and number of the building permits given in a year is associated with the urban land stock. (2) Legal transformation is rapid however, physical transformation is slow. (3) No average time for the projects, it depends on the financial of the implementer.
(1) Is it mandatory to implement LR projects in conjunction with plans (y/n), if yes, (2) How this plan-project dependency is ensured?	LR is implemented in conjunction with the upper plan and the lower plan is generated by the projects.
(1) LR projects are carried out systematically (y/n). (2) Is it mandatory to prepare implementation programs? (y/n) If yes, is there any sanction for the implementers who do not have implementation programs?	Partially systematic as it is mandatory to prepare a 5 year program however no sanctions to implement the program.
The construction process and the costs are included in LR process (y/n).	The construction process and the costs are not included however, it is planned to be soon.
(1) Is it possible to use LR for affordable housing? If yes, what are the possibilities? (2) What is the total number of the low-cost housing implemented via LR?	It is impossible to use LR for affordable housing with the current legislation.
Existence of a development agency public, private or community-based. (y/n)	No development agency however, a public based development agency is planning to be established.
(1) List of the distribution bases in LR projects. (2) What are the criteria used in the selection of the distribution base?	Only land area is taken account however, value base distribution is argued and planned.

### 2.1.1.2 Legal Aspects

Legal aspects in policy level focus on the legal principles that create a legal basis for institutions governing land, and sets out the rules for land policies, land rights and all land-related activities, which were consolidated under the term of land management. Evaluation of Turkish LR focuses on the legal aspect, as the absence of the legal basis directly affects the success or the failure of the projects. Legal resources of the LR method in Turkey regarding urban planning exists since the second half of the 19th century. Currently, the Development Law dated 1985 and the related regulations are guiding the implementation of the projects. Although there are some legal gaps, it is possible to say that every process in LR have a legal base and details of the technical processes are provided with the law, regulations, case laws and circulars of the related ministries. Although some problems occurs, uniformity in LR and integration with the related laws and the other land acquisition tools are provided by this way. As a difference, LR in Turkey includes expropriation in the process. If the land needed for the infrastructure areas are more than the legal limit than the difference is expropriated by the related authority to reduce the deduction rate to its legal limit of 40 %.

The main aim of the Turkish LR is to implement the development plans and based on the Article 8 of the Development Law, which is the responsibility of the municipalities within municipal areas and the governorships outside of these areas. Furthermore, under certain conditions the Ministry of Environment and Urban Planning could also carry out LR projects, especially in the special areas. The projects in Turkey are generally mandatory, which means that the landowners don't have the right to leave the projects. However, voluntary application of the LR by the landowners is also possible if the majority of the landowners agrees to join and cover the costs of the projects. The LR projects could be initiated in any area in the city that have a development plan and is at least equal to a single block. There is only one LR model and in this model, all the calculations regarding the projects such as the deduction rate and the allocation area of the landowners are based on the area. There is no authority who determines the value of parcels before or after the LR process. Therefore, the value differences of the parcels are not calculated and compensated. This equality problem have

been issued in KENTGES and developing and realizing value based projects are planned. As a principle, the plots are allocated firstly to their original place and close to the original place, as far as possible, and where impractical, within the LR area. In this way, protection of ownership rights of the landowners is provided. Moreover, if the allocation area of the landowner is smaller than the minimum parcel size of the subdivision plans, then the landowner could become a shareholder in a parcel's area or building right. In addition, co-ownership before the LR project cannot be transformed into individual ownership with the Turkish LR. In Turkey, land ownership disputes do not cause delays in projects. Although this is a good practice, some problems occurs when the duration of a case is long or the case is about the validity of the ownership. The evaluation of the Turkish LR under the legal aspects is summarized below, in the Table 2.

<b>Table 2: Indicators of the Legal Aspects</b>	<b>Evaluation of Turkish LR</b>
(1)Existence of a legal basis (y/n), (2) List of the processes that does not have a legal basis.	Every process have a legal basis.
List of (1) areas (2) financial models and (3) implementers of LR.	(1) The areas that have a Development Plan, (2) One financial model (2) Municipalities, governships and the bakanlık.
(1) Uniformity in LR, (2) Integration with the related laws and (3) Relationship between the other land acquisition tools are ensured (y/n).	Uniformity is provided mostly, however, there are some problems.
Is there any legal measure for landowners to remain after the project?	No legal measure however as the process is land-based landowners usually remain title.
Is there any solution for landowners who want to leave the project? (y/n) If yes, list them.	No leaving possibility.
It is possible for land ownership disputes to cause delays in projects.	Land ownership disputes do not cause delays in projects.
(1) Is it possible to convert the co-ownership into individual ownership (y/n) (2) What are the criteria?	No possibility for converting co-ownership into individual ownership.
The technical processes of LR have adequate standards (y/n).	Details of the technical processes are provided with the law, regulations, case laws and circulars of the related ministries.
The difference in allocation is calculated and compensated (y/n). If yes, how is the process?	The differences are not calculated and compensated.

### 2.1.1.3 Financial Aspects

Financial aspect in the policy level focuses on the economic policies and principles that aim to provide a self-financing technique for urban land and infrastructure development. The most important issue in this aspect is to ensure a self-financing implementation. This could only be ensured by using cost recovery or value capturing tools, both are an important source for infrastructure financing that prevents plot speculation and provides social justice (Yilmaz et al., in press). In Turkey, mainly there is only one possibility for cost recovery which is taking land deduction for the infrastructure areas. Deduction taken from each landowner could be max 40 % of the total LR area. However, if more land is needed, the difference is expropriated and these costs should be covered by the LR authority. In addition, infrastructure costs and construction are not included in the LR process in Turkey. It is the responsibility of the municipalities, and they can only collect a kind of development fee for street paving, drainage, and other improvements. These fees are taken after the installment of the roads, pavements and etc., and can not execute the 2 % of the taxing value of the property. In addition, the LR model in Turkey does not accommodate the opportunity of providing low-interest-bearing loans from banks or private institutions for project self-financing (Turk, 2007). In addition, for value capturing, based on the Development Law it is assumed that land deduction is taken in exchange for the increase in value arising with LR and the law restricts taking further betterment fees. As a summary, almost all costs are undertaken by the LR authority and there is no possibility for value capturing and the unearned increment or the increase in the property value resulting from the realization of the LR projects remains to

landowners in Turkey. In KENTGES and in the 10<sup>th</sup> Development Plan some policies addresses enabling value capturing tools however none of them includes LR.

In Turkey, implementing the development plans is being seen as a task of the municipalities and by using LR, the municipalities only have a financial support for the acquisition of the infrastructure areas. This financial structure is insufficient for providing a self-financing technique and when it is compared with the international examples, projects in Turkey are carried out with intense public financing. Consequently, municipalities generally becomes unable to implement the projects which leads delays in the construction of roads and technical infrastructure and prefer voluntary applications instead of using LR.

The evaluation of the Turkish LR under the financial aspects is summarized below, in the Table 3.

<b>Table 3: Indicators of the Financial Aspects</b>	<b>Evaluation of Turkish LR</b>
(1) List of the cost recovery tools and their efficiency. (2) What is the max., average and min. % of the cost recovery in the projects?	The LR authority undertakes almost all the costs. Only max 40 % of the LR area could be taken for the infrastructure areas.
(1) List of the value capture tools, (2) What is the max., average and min. % of the value capture in the projects?	The landowners take all the value increase.
(1) List of the cost payers and what are the max., average and min. % of the costs paid by each actor?	Except for the land deduction, the LR authority undertakes all the costs.
Is it possible to obtain low-interest credits?	It is not accommodated.
List of the subsidies that can be used in LR.	Generally, no subsidies.

#### 2.1.1.4 Social Aspects

Social aspects focus on the policies, principles, legislation and activities such as encouraging the participation of landowners in the process, ensuring transparency in the project phases and ensuring fairness and equality of projects that affect the landowners in the LR projects. Similar to other assembly tools in LR, the neglect of transparency in project phases and insufficient participation may cause the loss of confidence in the process and furthermore create problems that cause public reaction, resistance of the actors, provoke social disturbances, and hinder the implementations (Demir and Yilmaz, 2012).

In Turkey, initiation of the projects are directly decided by the public authorities and all the stages of the projects are undertaken by the authority regardless of the landowners consent. Landowners are only informed of the project by the public announcement have the right to examine the projects details that are taken in isolation. In KENTGES, providing public participation have been issued and actions have been planned however these are not realized yet.

Another problem in Turkish LR is that the equality among the landowners is not monitored. It is assumed in the Development Law that equality is established by taking equal land deduction. Moreover municipalities undertakes all the costs and not shared with the actors efficiently. The profits of the landowners in the LR projects are generally formed by the Development Plan that is realized with the projects and profits are not calculated or collected by the government and equality among the landowners can not be provided.

The evaluation of the social aspects is summarized below, in the Table 4. By the evaluation of the social aspects of the Turkish LR, the lack of participation possibility, isolated project

phases, absence of a mechanism for monitoring and providing equality arise as major problems in this aspect.

The evaluation of the Turkish LR under the social aspects is given in Table 3.

Table 4: Indicators of the Social Aspects	Evaluation of Turkish LR
Does participation ensured in the projects (y/n), If yes, what is the participation type (direct or indirect)?	No direct participation possibility, all the stages of the projects are undertaken by the LR authority regardless of the landowners consent and the landowners are only informed of the project by the public announcement.
Every step is transparent in LR (y/n), list of the nontransparent processes.	Project details are transparent for every landowner however, the decisions related to the projects are taken in isolation.
Is there any assessment process for equality of landowners, how is the sharing of the costs and the profits?	Equality among the landowners can not be provided. It is assumed that for every landowner equality is established by taking equal land deduction rate. The costs are not shared with landowners and the profits are not calculated or collected by the government.
List of public supports for the projects.	The municipalities undertakes almost all the costs.
The LR projects are explained in details to the landowners. (y/n)	Landowners are only informed of the project by the public announcement and they have the right to examine the details of the projects.

## 2.1.2 Management and Operational Level

The management and the organization of the LR studies can be either private or public initiative. For both, the responsibility of the stake-holder is to govern and operate the projects which involve preparation, management and realization of the projects which covers the issues about the administration and technical principles in LR which are detailed below.

### 2.1.2.1 Project Management Aspects

Management of the LR projects involves a range of special skills and requires knowledge and experience in both technical terms and management. Therefore, not only the number but also the qualification of the technical personnel is important. The existence of the required resources and expert personnel in the field of project management, planning, and financial management is important considering that they have a direct impact on the administration, preparation and implementation of the projects. However, as it might be expected, the required skilled personnel and resources may not be ensured in every project. Then, the recruitment of the related technical personnel to in-service training and inter-project cooperation as well as the coordination and sharing of experience and information should be provided (Yilmaz et al., in press). In Turkey, only some of the municipalities that are located in the big cities have adequate technical personnel in terms of quality, quantity and resources. According to a study carried out in 1990, 24% of the municipalities did not have any technical personnel; additionally, 42.3% of the municipalities have only a single technician (Yurtsever, 1990; cited in Turk, 2005 and 2007). Moreover, because of the lack of adequate technical personnel in terms of quality, quantity and resources in municipalities and lack of a platform for inter-project cooperation, coordination and sharing of experience and information, LR projects are generally tendered to private sector firms which increases the project costs. In order to solve this problem in KENTGES with the Strategy 1.4 strengthening the capacities of the municipalities and in addition, strengthen the technical capacity of local governments through training with technical education programs are planned however not realized yet. The evaluation of the Turkish LR under the project management aspects is summarized below, in the Table 5.

<b>Table 5: Indicators of the Project Management Aspects</b>	<b>Evaluation of Turkish LR</b>
What is the percentage of the implementers that are equipped with adequate technical personnel in terms of quality, quantity and resources within the total?	Generally, only some of the municipalities that are located in the big cities have adequate technical personnel in terms of quality, quantity and resources. No information is available in %.
Existence of a sustainable training activity (y/n) if yes what is the %?	No training activity.
Existence of a platform for inter-project cooperation, coordination and sharing of experience and information? (y/n)	No such platform.

### 2.1.2.2 Technical Principles Aspects

The good practices under this aspect are derived from the experiences and cover the key principles that are accepted in the literature as a success factor. These principles are mainly related to the technical details such as feasibility of the area, size and timing of the projects, allocation and structure of the plots, etc. Although selection of project areas with respect to physical, economical and psychological suitability is a key requirement for mounting successful projects, only legal and physical suitability is taken account in Turkey. In addition, because of the lack of the value capture and cost recovery tools, only the finance of the municipalities are taken into consideration for the timing and the size of the projects.

LR becomes an efficient tool when it reorganizes small, scattered, and irregularly shaped cadastral parcels and provides developable and marketable readjusted sites (Lin, 2005). The readjusted parcels in Turkish are produced with the technical principles of the plans and forms the subdivision plans. Therefore, new parcels usually have the optimum shapes for development. However, because of the financial problems indicated before delays in the infrastructure areas reduce the developing and marketing possibilities.

In LR, the most critical stage is the allocation of the plots and in countries where there is an option to choose, selection of the allocation base needs a compressive evaluation of the area and landowner characteristics. Moreover, in value basis allocation, high-level real estate appraisal expertise is required to ensure equitable distribution of costs and benefits in a LR projects. In Turkey the calculations of the allocation process is only based on the land area and generally, the allocation of the readjusted plot should be provided in its original location, or close to its original location, or if this is impossible, within the LR area. (Turk, 2008). Moreover, new parcels should be allocated to the same place if the landowner has an existing building fulfilling requirements of the development plans and sole ownership with the allocation should be provided as soon as possible. The evaluation of the Turkish LR under the technical principles aspects is summarized below, in the Table 6.

<b>Table 6: Indicators of the Technical Principles Aspects</b>	<b>Evaluation of Turkish LR</b>
Does the feasibility of the project areas are investigated before the implementations? If yes what are the criteria?	Yes, however only, the legal and physical feasibility is analyzed.
Existence of a criterion for the timing of the project. (y/n) If yes, what are the criteria?	No criterion for the timing of the projects.
(1) What is the general LR size, which can be accepted as a successful project area? (2) What is the average LR size in the projects?	No general LR size that could be accepted as a successful project area. It depends on the financial of the municipalities.
After LR, the parcels have the optimum shapes for development (y/n).	Yes, the parcels usually have the optimum shapes for development.
(1) List of the existing criteria for the allocation. (2) How is the allocation process?	The calculations of the allocation process is only based on the land area and details are given in the paragraph.
(1) List of the valuation methods. (2) Assessment of the accuracy (y/n)	No valuation.

### 2.1.3 External Factors Level

External factors in the framework have an impact on the evaluation but not on the responsibility of any stake holder in the organization. Stakeholders of the external factors are not involved in the management or operational activities of the system; however, their services and products have an impact on how the system functions (Steudler, 2004). In LR, external factors affect the success of an LR but not directly controlled by the LR organization in terms of capacity building, research and development, technology and data quality. In Turkey for capacity building, workshops, seminars, etc. are generally conducted by the universities, the related chambers etc. and not carried out systematically. For the evaluation of the number of the research projects, the Scientific and Technological Research Council of Turkey which is the leading agency for management, funding and conduct of research have been analyzed and no projects that is directly related with LR have been found. In Turkey, the LR projects are mainly realized by the geomatic engineers and there are 19 departments in different universities. Most of these departments have LR related lectures. In Turkey, GIS is not directly used in the projects however, some data such as the property details of the landowners that is used in the projects could be gathered from the databases. The quality of the cadastral and planning data used in the projects have adequate quality. The biggest problem in the external factors level is the possibility of thee political issues to effect LR projects. As in Turkey there is no possibility for value capturing, the value increase of the landowners are mainly determined by the Development Plans which are open for political concerns.

The evaluation of the Turkish LR under the external factors level are summarized below, in the Table 7.

<b>Table 7: Aspects</b>	<b>Indicators of the External Factors Level</b>	<b>Evaluation of Turkish LR</b>
<b>Capacity Building</b>	Number of workshops and seminars, etc.	No systematic workshops and seminars, etc.
<b>Research &amp; Development</b>	Number of research projects and institutes related with LR.	No research projects however, there are 19 departments in different universities.
<b>Technology</b>	Does LR databases are integrated with other databases through GIS?	There are some databases could provide information about the projects however, they are not integrated.
<b>Data Quality</b>	What are the properties of the cadastral data?	The data that are used in the LR projects are sufficient in terms of capture method, quality and accuracy.
	The data, which are used in the LR projects such as planning and valuation has an adequate quality.	The data that is required in the projects have adequate quality.
<b>Other</b>	Is it possible for political issues to effect LR decisions? Is there any measure?	It is possible for political issues to effect LR decisions and no measure is taken so far.

### 2.1.4 Review Process

The main aim of the review process level is to ensure the sustainable evaluation of the efficiency, limitations and performance of LR processes to improve the processes for effectiveness. If a performance gap has been identified, by focusing on the aspects that need improvement, actions can be taken in order to close the gap to ensure the continued success of LR (Yilmaz et al., in press). In Turkey, there is no mechanism for systematic evaluation and review of the LR system. Projects are legally controlled by the related authority however there is no regular review process for the improvement of the system (Table 8).

<b>Table 8: Indicators of the Review Process Level</b>	<b>Evaluation of Turkish LR</b>
Existence of a regular review process (y/n)	Projects are legally controlled by the related authority however no regular review process for the system.

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### 3. CONCLUSION

The purpose of this article was to measure and compare the performance of Turkish land readjustment strategies with the intention to use the wisdom of the ages to overcome the challenges of the modern world. By evaluating and comparing the results with the best or the expected results of an ideal LR system, the performance gaps of the Turkish LR strategies that need improvements have been revealed. By using the good practices together with the indicators it is possible to enable countries to conclude whether their strategies could have been achieved or not, furthermore, reveal the improvements in their LR system. Moreover, using an evaluation framework clearly address the data that is needed to be collected and analyzed; to evaluate how well the countries LR system is functioning and to compare the related strategies against the expected results of an ideal LR. Therefore, performance gaps of the Turkish LR strategies that need improvements have been revealed by using an evaluation framework (Table 9).

For future studies, to evaluate the LR performance of the different countries, similar national case studies and comparative studies can be realized. By this way, the strategies, the methods and the process of an ideal LR could be discussed, furthermore, the validity, and the efficiency of the framework could be tested. In addition, some of the indicators in the study that are descriptive, might not be able to provide benchmarks. Furthermore, we believe that a discussion on the good practices and indicators which aims to provide clear benchmarks and to increase the detail levels of each evaluation aspect, the good practices and the indicators, could move forward the LR literature.

**Table 9: The Evaluation of the Turkish Land Readjustment**

	Indicators	The Review of Turkey
Land Policy Aspects	Existence of a government policy for LR (y/n)	Yes however, partially defined and urban transformation projects are considered more important than LR after 2009.
	(1) Is there any measure to reduce or prevent plot speculation? (y/n) If yes, list of the available measures	No, however it is planned.
	(1) Initiation of the LR projects has a relation with any urbanization indicators such as the urban population, housing needs, etc... (2) Is it possible to implement the projects simply and fast? (3) What is the average time for projects?	(1) Initiation of the projects is associated with the urbanization and number of the building permits given in a year is associated with the urban land stock. (2) Legal transformation is rapid however, physical transformation is slow. (3) No average time for the projects, it depends on the financial of the implementer.
	(1) Is it mandatory to implement LR projects in conjunction with plans (y/n), if yes, (2) How this plan-project dependency is ensured?	LR is implemented in conjunction with the upper plan and the lower plan is generated by the projects.
	(1) LR projects are carried out systematically (y/n). (2) Is it mandatory to prepare implementation programs? (y/n) If yes, is there any sanction for the implementers who do not have implementation programs?	Partially systematic as it is mandatory to prepare a 5 year program however no sanctions to implement the program.
	The construction process and the costs are included in LR process (y/n).	The construction process and the costs are not included however, it is planned to be soon.
	(1) Is it possible to use LR for affordable housing? If yes, what are the possibilities? (2) What is the total number of the low-cost housing implemented via LR?	It is impossible to use LR for affordable housing with the current legislation.
	Existence of a development agency public, private or community-based. (y/n)	No development agency however, a public based development agency is planning to be established.
	(1) List of the distribution bases in LR projects. (2) What are the criteria used in the selection of the distribution base?	Only land area is taken account however, value base distribution is argued and planned.
	(1)Existence of a legal basis (y/n), (2) List of the processes that does not have a legal basis.	Every process have a legal basis.
Policy Level	List of (1) areas (2) financial models and (3) implementers of LR.	(1) All areas that have a Development Plan, (2) One financial model (2) Municipalities, governships and the related ministry.
	(1) Uniformity in LR, (2) Integration with the related laws and (3) Relationship between the other land acquisition tools are ensured (y/n).	Uniformity is provided mostly, however, there are some problems.
	Is there any legal measure for landowners to remain after the project?	No legal measure however as the process is land-based landowners usually remain title.
	Is there any solution for landowners who want to leave the project? (y/n) If yes, list them.	No leaving possibility.
	It is possible for land ownership disputes to cause delays in projects.	Land ownership disputes do not cause delays in projects.
	(1) Is it possible to convert the co-ownership into individual ownership (y/n) (2) What are the criteria?	No possibility for converting co-ownership into individual ownership.
	The technical processes of LR have adequate standards (y/n).	Details of the technical processes are provided with the law, regulations, case laws and circulars of the related ministries.
	The differences in allocation is calculated and compensated (y/n). How?	The differences are not calculated and compensated.
	(1) List of the cost recovery tools and their efficiency. (2) What is the max., average and min. % of the cost recovery in the projects?	The LR authority undertakes almost all the costs. Only max 40 % of the LR area could be taken for the infrastructure areas.
	(1) List of the value capture tools, (2) What is the max., average and min. % of the value capture in the projects?	The landowners take all the value increase.
Financial Aspects	(1) List of the cost payers and what are the max., average and min. % of the costs paid by each actor?	Except for the land deduction, the LR authority undertakes all the costs.
	Is it possible to obtain low-interest credits?	It is not accommodated.
	List of the subsidies that can be used in LR.	Generally, no subsidies.
	Does participation ensured in the projects (y/n), If yes, what is the participation type (direct or indirect)?	No direct participation possibility, all the stages of the projects are undertaken by the LR authority regardless of the landowners consent and the landowners are only informed of the project by the public announcement.
	Every step is transparent in LR (y/n), list of the nontransparent processes.	Project details are transparent for every landowner however; the decisions related to the projects are taken in isolation.
	Is there any assessment process for equality of landowners, how is the sharing of the costs and the profits?	Equality among the landowners cannot be provided. It is assumed that for every landowner equality is established by taking equal land deduction rate. The costs are not shared with landowners and the profits are not calculated or collected by the government.
	List of public supports for the projects.	The municipalities undertakes almost all the costs.

The LR projects are explained in details to the landowners. (y/n)	Landowners are informed only about the project by the public announcement and they have the right to examine the details of the projects.
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(Table 9 Continued)

	Indicators	The Review of Turkey	
Management and Operational Level	Project Management	What is the percentage of the implementers that are equipped with adequate technical personnel in terms of quality, quantity and resources within the total?	Generally, only some of the municipalities that are located in the big cities have adequate technical personnel in terms of quality, quantity and resources. No information is available in %.
		Existence of a sustainable training activity (y/n) if yes what is the %?	No training activity.
		Existence of a platform for inter-project cooperation, coordination and sharing of experience and information? (y/n)	No such platform.
	Technical Principles	Are the feasibility of the project areas investigated before the implementations? If yes what are the criteria?	Yes, however only the legal and physical feasibility is analyzed.
		Existence of a criterion for the timing of the project. (y/n) If yes, what are the criteria?	No criterion for the timing of the projects.
		(1) What is the general LR size, which can be accepted as a successful project area? (2) What is the average LR size in the projects?	No general LR size that could be accepted as a successful project area. It depends on the financial of the municipalities.
		After LR, the parcels have the optimum shapes for development (y/n).	Yes, the parcels usually have the optimum shapes for development.
		(1) List of the existing criteria for the allocation. (2) How is the allocation process?	The calculations of the allocation process is based on only the land area and details are given in the paragraph.
		(1) List of the valuation methods. (2) Assessment of the accuracy (y/n)	No valuation.
		Capacity Building	Number of workshops and seminars, etc.
External Factors	Research & Development	Number of research projects and institutes related with LR.	No research projects however, there are 19 departments in different universities.
	Technology	Does LR databases are integrated with other databases through GIS?	There are some databases could provide information about the projects however, they are not integrated.
	Data Quality	What are the properties of the cadastral data?	The data that is used in the LR projects are sufficient in terms of capture method, quality and accuracy.
		The data, which is used in the LR projects such as planning and valuation has an adequate quality.	The data that is required in the projects have adequate quality.
	Other	Is it possible for political issues to effect LR decisions? Is there any measure?	It is possible for political issues to effect LR decisions and no measure is taken so far.
Review Process	Performance Assessment	Number of workshops and seminars, etc.	No systematic workshops and seminars, etc.

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