

A STUDY ON THE LAND POOLING SCHEME IN DIFFERENT COUNTRIES: A SPECIAL FOCUS ON ITS ADAPTATION IN KABUL, AFGHANISTAN

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Abstract—Afghanistan is dealing with one of the most dramatic trend of urban movement in its history. Cities and towns are expanding in size and number in Afghanistan. Among the many problems that affect the development, uprising of informal settlements is one of the major problems that Afghanistan especially the capital Kabul city is suffering from. Land pooling or Land Readjustment (LR) is a land development technique used in many countries around the world. In essence it is a method whereby an irregular pattern of land is re-arranged into regular plot and equipped with basic urban infrastructure such as roads and drains. A percentage of each landowner's holding is contributed to provide land for roads and parks, and for some plots to sell to pay the costs of the project

Since LR have proved to be an important tool for developing new land or reorganizing urban areas, this paper describes LR's method and its uses in different countries and discusses advantages, problems and possibilities for future methodological development in the city of Kabul.

Index Terms— Land Pooling, Land Readjustment, Informal Settlements, Public-Private-Partnership, Developing Countries, Kabul.

I. INTRODUCTION

The purpose of this study is to develop a methodology for the existing slums in Kabul city and to compare the performances of the existing LR strategies in order to learn from the successful implementations. In 2014, 54% of the world's population lived in urban areas however; it is expected to increase to 66% by 2050 [1]. The pressures of urbanization in most countries around the world create the need for methods to assemble the development land by focusing on increasing the efficiency of the transformation from a rural to an urban economy, in terms of balancing agglomeration benefits and congestion costs from concentration [2]. Therefore, land management strategies need to deal with three main objectives, land assembly for (re)development, cost recovery for the expenses of the public infrastructure works and capturing the value that occurs as a result of the change of the land use or the density. Land readjustment has proved to be an important tool for developing new land or reorganizing urban areas. The

landowners jointly leave land for streets and other public places and build the required infrastructure.

The term land readjustment has been used under different names in the literatures, such names are urban land readjustment (Chou and Shen, 1982); land readjustment (Doebele, 1982; Minerbi et.al, 1986); land pooling (Archer, 1982); land re-groupment (Kuppers, 1982); land reform (King, 1977); land reordering (Davis, 1976). LR is identified as a potentially very useful method for developing countries [3]. Studies suggest that LR practices have attracted the keen attention of third-world countries as they grapple with the huge demands of development from various fronts. LR is expected to minimize the public financial burdens relative to the management of urbanization [3]. Nagamine points out that the use of LR could be particularly effective in Asian countries, where there is a need for clarification of ambiguous and complex land tenure rights. He emphasizes that one of the important advantages of LR is that clear title to land is established [3]. In Europe, the method is legally established in one form or another in countries such as Germany, France and most recently in Sweden. In Asia, it is mainly used in Japan, South Korea, Taiwan and parts of India. This research only explores the methods used within Germany, France, Japan and India.

II. METHODOLOGY

The methodology which has conducted in this research consists of a comprehensive literature review on land readjustment practices in developed and developing countries, in the second step a comparative analysis has carried out to discuss the pros and cons of each project in studied countries and through the international experiences which took place about the slums, we determined a number of recommendations to adapt the LR method based on the socio-economic and cultural condition of the country and deal with the problems to create a sustainable approach for sensitive development of the informal settlements in the city of Kabul.

A. Germany

The LR process in Germany is called “*Umlegung*”. In Germany, it is mostly the government that makes all the decisions. In fact, the whole process is taken care of by the local authorities, from initiative to planning and implementation, but the result is that the land is kept by the previous owner after it has been reallocated to suit a new development plan. The legal basis for urban development in Germany is the German federal building law code. The responsibility for all important decisions in LR projects has transferred to independent LR boards appointed by the municipalities [4]. This means, the municipal office makes all decision and negotiates with all the landowners in the project area. However the final decisions will be made by the independent LR board. As per German LR procedure, the participation of landowners is much more intensive, especially in the planning phase. If a landowner denies the agreement, the LR board can force him by putting the municipality in possession before completion of the LR plan [5]. If a landowner contradicts a decision of the LR board, he can institute legal proceedings. If an agreement cannot be formed between the two parties, the final decision will be made by the federal court of Justice [5]. The following figure shows the *Umlegung* procedure.

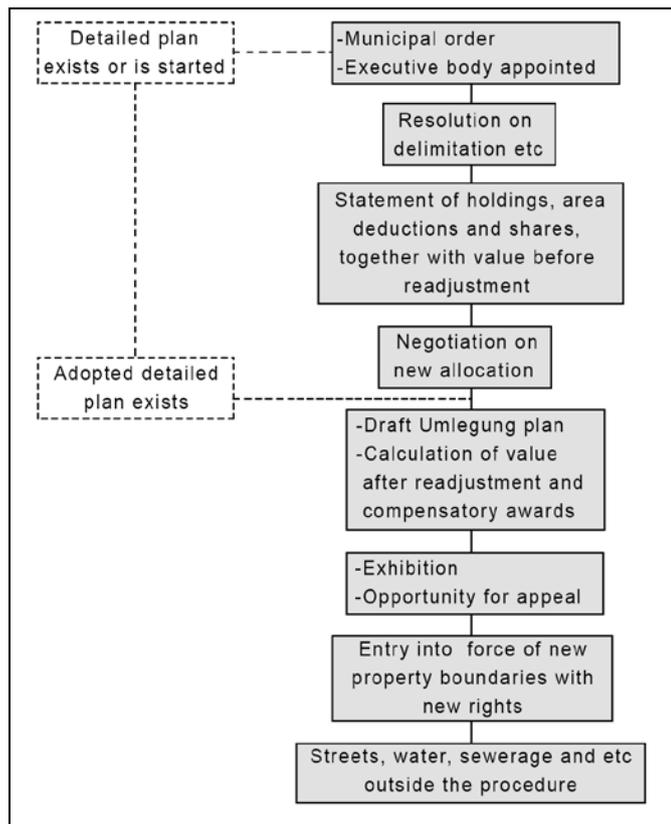


Fig. 1. *Umlegung* Procedure, Larsson (1993, pp.41)

Umlegung may be said to be an efficient way of collaborating with the municipality as executor and cost payer, while the

owners can present their viewpoints and have the right to appeal but otherwise have little formal influence. It is a suitable method to implement an approved building plan and at the same time equalize the development gain according to everyone’s share. Larsson (1997) explains the German land readjustment procedure as follows: First decision is the definition of the extent area within which all landowners take place and have no option to leave the program. After the statement of maps, records, parcels and buildings detailing the owners, total readjustment area is calculated from the parcel sizes. In the following step, this total area is reduced by a common share necessary for streets, green places and other public places. The reduced area is then distributed to every landowner in proportion to either the area or the value of his included land. Besides, municipality may take over further land as contributions to the costs.

Thinking of the adaptation to the approved building plan, a new parcel plan based on everyone’s share is worked out. The discussions including related economic problems are made with individual owners and then the revisions concerning the new plan are completed. After the approval, this last parcel plan is then displayed in the locality detailing the period of time for appeal. In this way, the legal process is finished. The construction of streets, infrastructure and etc which are the responsibility of the municipality, is not included in the proceedings [6].

B. France

France is located in the Western of Europe. Besides being one of largest economies in Europe, in terms of population, it is the second largest country in the European Union, in terms of area, the largest. After the World War II, France sought to find the ways of controlling urban development as well as other European developed countries. Larsson points out that “the French legislation was prompted by the need for new methods of urban development” [7].

According to French planning system, the land readjustment procedure has to be integrated with the general planning framework. In principle there should be an overriding regional plan which is specified in a land use plan for the individual municipality. From this point of view, Komae (1996) mentions that French planning system is formed by two inter-related levels; “Schéma Directeur” (SD) as the master plan and “Plan d’Occupation des Sols” (POS) as the general land use plan [8].

France has always been strongly committed to the rights of private property and so land readjustment by joint development was felt to be good remedy against expropriation and also against too much community involvement. Another point is that French legislation provides joint urbanization measures to be taken by the landowners themselves [9].

In France, unlike Germany, LR is mainly the responsibility of the landowners; implementation and sharing of economic gains are in their hands. The initiative maybe taken by the municipality, but also by private interest holders, who may start by introducing a voluntary association. To some degree it

is possible to get public support for the pre-project, which of course must give consideration to existing land use plans of the municipality.

Larsson (1997) summarizes the French procedure as follows: along with the exhibition arranged by the prefectural authority, objections against the project are received. If two thirds of the owners agree about the project and at the same time own at least two thirds of the total area, the project is accepted in a general public meeting. Fig. 2 presents the typical procedure of French land readjustment.

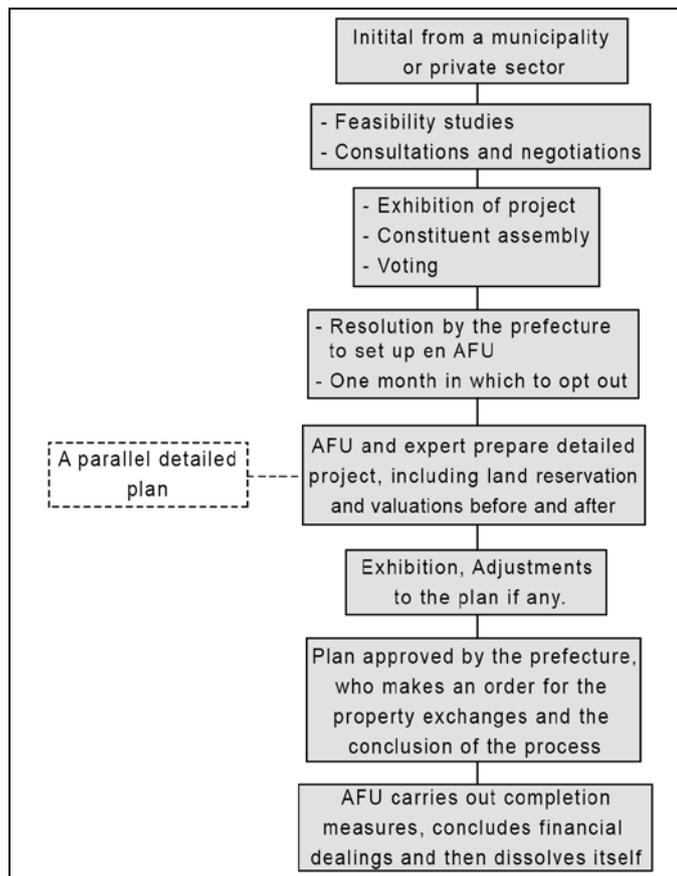


Fig. 2. Sequence of a French AFU procedure, Larsson (1993, p.50)

C. Japan

LR was imported to Japan at the turn of the century. The procedure in Japan is called *Kukau Seiri* (KS)-has after further improvements developed into the main model of urbanization in Japan and is nowadays responsible for around 50% of all new development areas [6]. The LR act was established in 1954 and has been revised several times. In post-war Japan LR has been adapted for an extraordinary variety of different applications, such as downtown redevelopment, new town building and public housing construction [10]. The prototypical application is in the development of new urban land on the fringe of growing cities. Japan has had experience of joint development ever since the beginning of the 20th century. The real breakthrough in the field came after 2 disasters, the big

earthquake of 1923 and the massive destruction of Japanese cities during the WWII. The reconstruction necessitated big and integrated programs for establishing new city structure in cooperation with landowners and tenants. The main aim of KS was to develop new town areas, to renew old ones or to adapt the structure to big infrastructural investment. Contrary to the German or French procedures, the model is not solely designed for either the public or the private sector. Japan's LR law stipulates three kinds of public implementers such as local government (prefecture and city), central government and government corporations, as well as three kinds of private implementers like individuals, LR cooperatives and LR companies [11]. Local authorities, public enterprises, big private entrepreneurs and ordinary landowners can take the initiative and implement the readjustment. If the project is established within the private sector, it must normally be supported by at least 2/3 of both owners and leaseholders (number and area). Irrespective of who is the initiator, superior authorities must recognize the project. To reach this end and extensive pre-planning process is necessary, where goals, preconditions, planned results and construction, estimated costs and gains are clarified. The plans are displayed for 2 weeks and those concerned may raise objections and give viewpoints.

After possible corrections, the authorities can approve the pre-plan with its proceeding regulations and establish an authorized association of owners and leaseholders. Once the ownerships are defined in maps and records, shares can be determined according to areas or values of the land. Further, the percentage of land which every owner is to surrender is determined, on the one hand for public areas and on the other hand for payment of the costs. The association normally sells this last part and makes the project self-financing. The cost sharing between the public and the private sector is determined by mutual agreement. The final plan is then displayed for 2 weeks. In the case of a private readjustment, the final plan must be supported by a 2/3 majority. If a public authority or corporation is responsible for the project, no voting is necessary and no association is established. The owners and leaseholders concerned appoint a board which has an advisory, and in some points, decision-making function. In all cases, however, the final plan must be approved by a superior authority. Appeals are allowed and are treated in an administrative order. The method has sometimes been criticized in Japan. One reason is that the readjustment plan is not always combined with a formal building plan. Therefore buildings of very different height and appearance can be established within the same block. Nor is a final date fixed for the development. For speculative or other reasons, the actual building within the plan can be spread out over a long period of time within the area. Nevertheless, the method is appreciated in Japan as a necessary tool for urban development.

D. India

In India the LR method is called land pooling system. A public agency (often a municipality or a development authority) pools

multiple privately held land parcels. Next, the agency takes a part of the pooled land to provide infrastructure and public facilities and returns the rest of the land to the original land owners in proportion to the sizes of their original land holdings [12]. Often, the public agency also reserves a part of the pooled land for future sale. The following figure shows a typical administrative process for land pooling scheme in India.

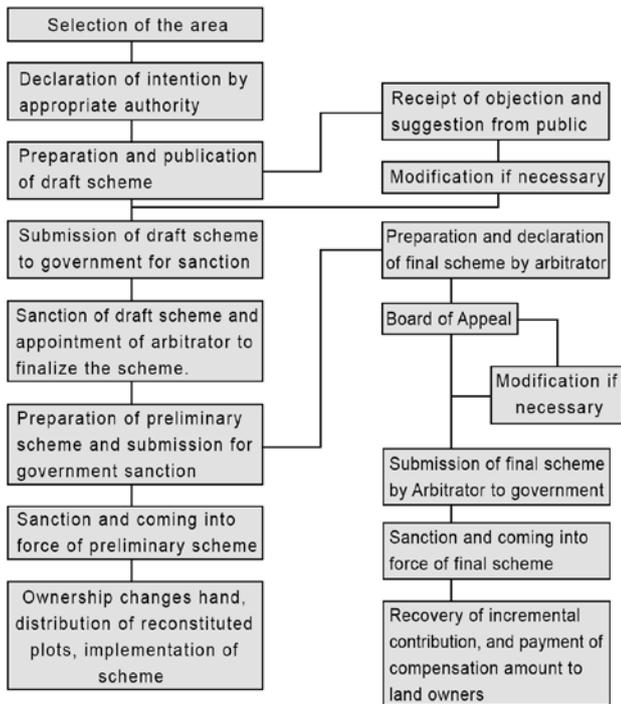


Fig. 3. Administrative process for implementing land pooling scheme in Bombay/India

The method has proved an effective urban planning and finance tool; it offers three key monetary benefits. First, the public agency does not incur the land acquisition cost. Second, the public agency is able to finance urban development through betterment charges and the sale of land. Third, the landowners gain from the appreciation in the land value due to the provision of infrastructure [12].

This method is used in Gujrat and Maharashtra. The critical examination of the land pooling reveals that the technique is rational, equitable and democratic. By implementing this method the build ability of the reconstituted plot increases with regular shape, improvement in accessibility, availability of social and physical infrastructure in the neighborhood, better linkage with other part of the city and improvement in quality of life and living environment can be achieved through this method.

III. NEED ASSESSMENT FOR AN ADAPTED LR MODEL IN KABUL

Informal settlement is the biggest and serious problem of Kabul; it has covered a vast portion of the city and the residents are suffering from bad condition of life, the area lacks basic public facilities, infrastructures, solid waste management and

so on. The main causes for the growth of informality in Afghanistan are the rapid growth of population, the huge regression of refugees to country, and rural-urban migrations. All these factors finally contributed to a huge slum and informal settlements in Afghanistan especially Kabul. The issue of urbanization is not only about Afghanistan, it is a global problem and the pressure of urbanization in most countries around the world created the need for methods to assemble the development land by focusing on increasing the efficiency of the transformation from a rural to an urban economy, in terms of balancing agglomeration benefits and congestion costs from concentration [2].

At the context of Afghanistan, where most lands have been destroyed informally, there is a series need for an orderly land reformation process [13]. The process should have the flexibility to solve both current and future problems of informal and formal settlements which means upgrade the existing settlements and release land for the future. The participation and contribution of communities in this process is key factor in accelerating the process. Land Readjustment (LR) has the potential to solve this problem; it has proved to be an important tool for developing new land or reorganizing urban areas. The practice of LR varies from country to country and from region to region within countries. Just as the environmental, cultural, religious and geographical needs of each country are different, therefore each country and region needs their own model of LR. Consequently, to successful answer the needs of the afghan people, this process recommends designing an afghan model of LR specifically meant for Afghanistan which needs to incorporate all those factors.

Considering the weak national budget and low income of the people, the model should be designed based on low contribution ratio, the religious and historical buildings should preserved. Moreover, minimum compensation cost should be taken into consideration and the financial land should be decreased as possible.

Public-private-partnership (PPP) models are good option for reducing the financial land and project cost. It can pave the ground for the local investments and as well as assist the government and residents in providing standard and fast services. In this regard, we have provided some information about PPP models and its expected role in Land Readjustment projects.

A. A brief introduction to PPP

The term “public-private partnership” describes a range of possible relationships among public and private entities in the context of infrastructure and other services.

PPP is being more widely applied to deliver public facilities and infrastructure, aiming at synergizing the advantages of both public and private sectors through a comprehensive partnership between them. Previous research revealed that PPP projects have performed better in many respects compared to the traditional approach where they have been applied. It is therefore proposed that PPP could be one of the procurement options that could be considered to deliver specific

redevelopment projects after sufficient research and development.

B. Why public private partnership

Public-Private-Partnership (PPPs) has become a popular tool for funding new infrastructure projects around the world. States typically tend to turn to them when facing [14]:

- Budget deficits.
- The need to protect against project delays and cost overruns.
- A desire to diversify the economy by stimulating private sector investment.
- A desire to handle projects when government funds are constrained.

PPP schemes can also apply a further role in promoting economic diversification and foreign direct investment [11].

Slum development requires enough budget and strong financial support to start, it is further experienced that lack of sufficient funds limited the success of many urban regeneration and slum clearance projects in developing countries [15]. Afghanistan is facing with economic crises due to some constraints in respect to the developmental budget, despite of the significant improvements in the economy of Afghanistan in last decades but still it remains one of the poor and least developed countries of the world. The core national budget which has adopted by the government of Afghanistan for the year 2018 has estimated around \$5.5 billion which about \$1.6 billion of that has allocated for the development budget [16] but unfortunately due to the increase in the number of informal settlements, this much budget does not suffice for developing of the entire informal areas and infrastructural projects in Afghanistan. The only way to overcome this problem is to involve private sector or look for international aids. We believe and as well as experiences have shown that as long as Afghanistan relies on aid money alone, we cannot expect to move toward sustainability growth. According to a report entitled “Private Sector Development and Economic Growth” which has published on April 2018 by the Special Inspector General for Afghanistan Reconstruction (SIGAR), the U.S officials viewed private sector development as foundational to economic growth and a key driver of economy and security, they have mentioned it can provide gainful employment to the young, unemployed men who were considered more likely to join insurgent [17]. Figures bellow respectively show the national budget and gross domestic product (GDP) of Afghanistan.

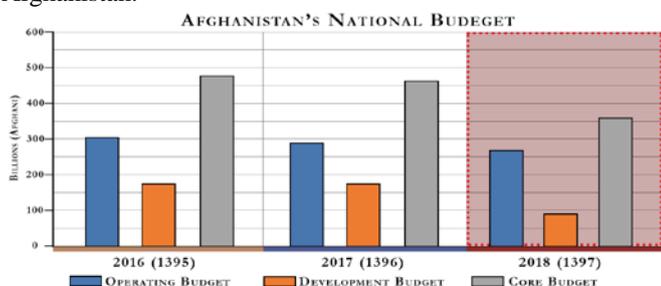


Fig. 4. Afghanistan National Budget

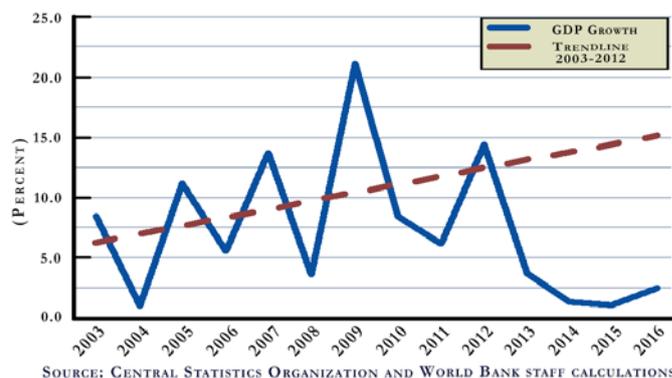


Fig. 5. Real Gross Domestic Product (GDP) growth, 2003-2016

PPPs attempt to balance the strengths of both parties, to create a win-win combination. In land readjustment projects, private sector can play a key role by partaking in developing of some public facilities through different models of PPP (depends on the contract and type of the project) or even in some projects can take part in developing of mid-rise apartments. Private sector will make their profit at the end of the project or in mid-term (depends on the project), government will benefit as this process pave the ground for the investments and as well as a big portion of the people (Residents) will get access to standard living and facilities, people will get benefit as the project will affect their land value and also enhance their quality of life.

C. Different models of PPP

There are several models of PPP, which each one of them has their own characteristics and specialty which depends to the type of project and type of contract, some popular models of PPP have mentioned as follow:

- Design Build (DB): Where Private sector designs and constructs at a fixed price and transfers the facility.
- Build Transfer Operate (BTO): Where Private sector designs and builds the facility. The transfer to the public owner takes place at the conclusion of construction. Concessionaire is given the right to operate and get the return on investment.
- Build-Own-Operate (BOO): A contractual arrangement whereby a Developer is authorized to finance, construct, own, operate and maintain an Infrastructure or Public facility from which the Developer is allowed to recover his total investment by collecting user levies from facility users. Under this Project, the Developer owns the assets of the facility and may choose to assign its operation and maintenance to a facility operator. The Transfer of the facility to the Government, Government Agency or the Local Authority is not envisaged in this structure; however, the Government may terminate its obligations after specified time period.
- Design-Build Operate (DBO): Where the ownership is involved in private hands and a single contract is let out for design construction and operation of the infrastructure project.

- Design Build Finance Operate (DBFO): in this approach, the responsibilities for designing, building, financing, and operating & maintaining, are bundled together and transferred to private sector partners. DBFO arrangements vary greatly in terms of the degree of financial responsibility that is transferred to the private partner.
- Build- Operate- Transfer (BOT): In this BOT Arrangement, private partner does not collect any charges from the users. His return on total investment is paid to him by public authority through annual payments (annuity) for which he bids. Other option is that the private developer gets paid based on the usage of the created facility.

IV. DISCUSSION

The result of this case study analysis shows positive potential for use of Land Readjustment method in Kabul city. It is a cheaper and more efficient method than collecting the land under a single ownership; it also increases the possibility of a fairer allocation of development benefits. In this respect, LR leads to benefits both the government and the landowners. Basically the attractiveness of LR for landowners is based on the fact that substantial increases in the value of land can be achieved through the process, so that the value of the

individual land holdings can be greatly increased, even though the remaining area is smaller. Public participation in LR method is another potential benefit for better implementation of the projects. In Afghanistan, a major reason as to why many projects have not been effective in achieving certain objectives in the past is the result of local people were not being involved. LR method will give the opportunity for the people to take part in the development process. It will also promotes self-awareness and confidence, making the people examine their problems and to think positively about solutions. The practice of LR varies from country to country and from region to region within countries. Just as the environmental, cultural, religious and geographical needs of each country are different, therefore each country and region needs their own model of LR. Consequently, to successful answer the needs of the afghan people, this process recommends designing an afghan model of LR specifically meant for Afghanistan which needs to incorporate all those factors. A key factor is to respect the religious and historical places in any project; the Afghan general public will never accept the relocation of mosques or shrine sites in their neighborhood. In Afghanistan, due to the problem of people’s unfamiliarity with the Land readjustment method and its processes, people might be willing to give up

Table 1. Comparative analysis of land readjustment (LR) practices in different countries

Characteristic Description	Countries			
	Germany	France	Japan	India
Method Name	<i>Umlegung</i>	<i>Land Readjustment (LR)</i>	<i>Kukau Seiri</i>	<i>Land Pooling</i>
Objectives	The increase of supply of scarce building land; development of Public Facilities.	Widening the main streets and to get people access to the infrastructure.	Development of public facilities; an increase of use in building lots.	Development of the shanty towns/slums and to get people access to proper infrastructure and public facilities.
Initiation & Management	Government	Municipalities, Private interest holders	Public implementers: Local government, Central government and government corporations. Private Implementers: Individuals, LR cooperatives and LR companies.	State Government and local municipalities
Land Valuation	Market price conforming with rules of the ordinance on market value assessment.	Market price value	Street Value Method	Market price value
Public Complaints	Compulsory readjustment: appeals mostly against land valuation either by values or amount of land Contribution. Compulsory land purchase: main complaint about relatively low compensation amount due to special rules of Such purchase.	Usually the public complaint is about the compulsory readjustment	Complaints mostly about re-plotting and disputes about the amount of money for Readjustment.	1-Low compensation amount based on the special rule of Purchasing. 2-Land valuation and the amount of contributed land.
Legal Basis	Building Law Code 1986 (Baugesetzbuch-BauGB)	Bylaws and local zoning ordinance	Land Readjustment Law (1954)	The Bombay Town Planning Act, 1915 and GTPUDA, 1976

land for public facilities but they are less inclined to contribute land for the purpose of financial land. In order to make LR method work best and to decrease the contribution rate so emphasis should be placed on using from local construction material, involving donors and private sectors for development of the public facilities in the project area. Furthermore, due to the constraints in respect to the developmental budget of Afghanistan and its people's income, a minimum compensation cost must be taken into consideration when implementing the LR process. (Table.1) illustrates information regarding the comparative analysis of land readjustment (LR) practices in different countries.

A. Role of the PPP models in adapted LR model

Many governments turn to the private sector to design, build, finance, and/or operate new and existing infrastructure and public facilities in order to improve the delivery of services and the management of facilities provided by the public sector. Governments are attracted by the benefits of mobilizing for how to engage with the Private Sector in Public Private-Partnerships in emerging markets private capital.

The estimated demand for investment in land readjustment projects in Kabul City shows that government and even donor resources cannot fill the investment gap alone, and so involving private and people capital can help to speed up the delivery of public facilities and infrastructure.

Based on many national and international reports on economy and investments in Afghanistan, the local private sector has money but due to many reasons they couldn't and are not willing to invest inside the country. If the government take a series decision and pave the ground for attracting local and international investments, it would certainly put a positive impact on successful development of the projects and as well as improving security condition.

Especially in this serious and important time which Afghan government is suffering from economic crisis so private sector can hugely and efficiently contribute in development process. As in previously mentioned that informal settlements is the serious problem of the capital and has covered about more than 69% of the lands. More importantly, majority of these lands are located at the most expensive and valuable parts of the capital; investment on infrastructure and public facilities near the Central Business Districts (CBD) can bring much revenue and profits for the private sector and as well as will help the government and people in minimization of the contribution ratio in land.

Therefore, PPP models particularly in land readjustment projects not only helping the government and residents in accessing to standard services and good quality of life but also can contribute in boosting the economy, generating many job opportunities and as well as it can work as a key driver of security as it can provide gainful employment and income to the young, unemployed men who are considering more likely to join insurgent or crime.

V. CONCLUSION

The result of this case study analysis shows positive potential for use of land readjustment method in Kabul city. It is a cheaper and more efficient method than collecting the land under a single ownership; it also increases the possibility of a fairer allocation of development benefits. In this respect, LR leads to benefits both the government and the landowners. Basically the attractiveness of LR for landowners is based on the fact that substantial increases in the value of land can be achieved through the process, so that the value of the individual land holdings can be greatly increased, even though the remaining area is smaller. Public participation in LR method is another potential benefit for better implementation of the projects. In Afghanistan, a major reason as to why many projects have not been effective in achieving certain objectives in the past is the result of local people were not being involved. LR method will give the opportunity for the people to take part in the development process. It will also promotes self-awareness and confidence, making the people examine their problems and to think positively about solutions. The practice of LR varies from country to country and from region to region within countries. Just as the environmental, cultural, religious and geographical needs of each country are different, therefore each country and region needs their own model of LR. Consequently, to successful answer the needs of the afghan people, this process recommends designing an afghan model of LR specifically meant for Afghanistan which needs to incorporate all those factors. A key factor is to respect the religious and historical places in any project; the Afghan general public will never accept the relocation of mosques or shrine sites in their neighborhood. In Afghanistan, due to the problem of people's unfamiliarity with the Land readjustment method and its processes, people might be willing to give up land for public facilities but they are less inclined to contribute land for the purpose of financial land. In order to make LR method work best and to decrease the contribution rate so emphasis should be placed on using from local construction material, involving donors and private sectors for development of the public facilities in the project area. Furthermore, due to the constraints in respect to the developmental budget of Afghanistan and its people's income, a minimum compensation cost must be taken into consideration when implementing the LR process.

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