

# LAND READJUSTMENT IN KATHMANDU VALLEY

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## Abstract

Urban expansion of Kathmandu Valley is taking place at the fast rate challenging urban managers and planners of the city. In-migration has resulted in the unplanned urban growth of the city with the shortage of serviced land for urban development in Kathmandu. So Land Readjustment (LR) technique has been used as urban land development tool by the government. There are twenty two LR projects completed, and some of the projects are ongoing in the valley. The overview of the Land Readjustment technique of Kathmandu Valley has been done to explore the required measures needed to reform the existing legal and Institutional Framework and procedure of LR. Among the implemented LR projects, Nayabazar Land pooling has been selected for the case study as almost all the plots have been developed. Now, it is a dense residential neighborhood. The instruments used for research are literature study, in-depth interviews with different stakeholders of LR projects and landowners. Field visit and questionnaire survey in case study area are conducted regarding the street network and open space of the area. The existing system of LR technique is studied relating it with international experience mainly the case of Germany and Japan to draw positive inferences to explore the wider scope of LR technique for the comprehensive development in urban areas.

**Keywords:** Urban growth, Land readjustment, Institutional and legal framework, Kathmandu valley.

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## 1. Introduction

Kathmandu, the capital city of Nepal, is going through rapid urbanization during last three decades resulting into huge demand of serviced lots for housing. There is a substantial change in built-up area of Kathmandu valley for the last three decade. Since most of the land in Nepal is privately owned, urban development has been carried out by either land acquisition or compulsory purchase of private land by the government in cadastral value for physical development works. Land price has increased so much that expropriation is very difficult, and it has drawbacks as original landowners are displaced from the place. So to provide serviced plots and to control sprawl in urban areas, the local government practiced Land readjustment projects

from 1990 A.D (Oli, 2003). It has become quite popular as an effective urban land development tool in our country. This instrument not only gives the proper shape of the plot but also provides urban public services systematically in urban land development. Despite the successful implementation of land readjustment it has certain drawbacks. The urban land development still has not been able to keep pace with the ongoing urbanization of Kathmandu. Currently, there is deficit of serviced residential plots in the city. Since land readjustment is carried out in small scale, the huge demand of serviced plots for housing is not met thus resulting in the unplanned development within and around the city. LR projects have been the most important planning tool in urban areas, yet the results of their use to have planned development in Kathmandu Valley have been little examined.

## 2. Research Objectives

The objective of the research is to gain knowledge

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(Received: November 15, 2019 Accepted: August 10, 2020)

on Institutional and Legal framework of LR in other countries mainly Germany and Japan. Both the countries have long history in implementation of LR as an effective urban development tool. So the primary objective is to study the role of legal and Institutional framework of LR in broader perspective to achieve comprehensive development in the city. Secondly to analyze livability of the implemented LR project in Kathmandu in terms of provision of open spaces and street network.

### **3. Research Methodology**

#### **3.1 Literature Study**

Land Readjustments is a crucial land management tool in urban planning when suitable private land is necessary for residential purpose. (Seele W, 1982). It is mainly used in the urban fringes where cities are growing day by day. LR technique is more acceptable than land acquisition to the public. The landowners are not displaced and cost for infrastructure is also shared by local government and landowners. So the local government also gets as it does not have to acquire land and compensate the land cost. So this win-win situation encouraged LR technique to be adopted by most of the countries for land development in urban areas.

Principle of Land Readjustment is to consolidate fragmented and irregular shaped plots to create serviced and usable parcels. The land is then redistributed to the original landowners, with public infrastructure costs borne collectively by the increase in developmental value. (Adams, Disberry, Hutchion, Munjoma, 2000) The aim of LR is to overcome urban problems, such as housing's shortage, prevention of urban sprawl, redevelopment after disaster and urban renewal. The objective of LR is to provide urban development with minimum public fund avoiding the cost of land expropriation.

##### **3.1.1 History of Land Readjustment**

The concept of land readjustment was first introduced by President George Washington in 1791 in United States of America. He made an agreement with landowners in donating the land for new capital, Washington, DC (Hin Li & Li 2007) and plots were sold to generate money for public

buildings. The Mayor of Frankfurt between 1890 and 1902, and the City Secretary Gustav Lube are known as the formers which introduced the Land Readjustment Instrument in Germany.

##### **3.1.2 Land Readjustment in International Context**

###### **German Case**

The German law empowers Municipalities to carry out mandatory LR if the land use plan requires. Presently the municipal runs the LR procedure and Land Reclamation Authority (Umlegungsstelle) implements LR projects (UCLG Committee 2016). According to Land use plan, municipality selects the area for LR projects. LR is taken as regulations and follows Baugesetzbuch (1987) as legal basis for LR in German. In 1980s almost 84% of building plots were developed using this instrument. Between 1993 and 1998, special consideration was taken concerning the spaces devoted to green areas, following a more ecological perspective and focusing on the relation between the execution plan and the Nature preservation. In general, 30% to 40% of the land is deducted to build local infrastructure such as roads, sidewalks, carparks, playgrounds etc. In Germany land valuation is well managed as it is defined by its Law. Land value capture is present payment from landowners equal to the added value of land (not more than 30% of the value of the land). The added value capture is reinvested in the development of the area (UCLG Committee 2016). The landowners in Germany agree to the expedient combination of voluntary and mandatory land readjustment. It is advantageous for landowners to go through compulsory LR as municipality provides expert and they get tax exemption. The success of LR in Germany is due to these three reasons. First is the property right is well established. Second is transparent evaluation and streamlined implementation process. Third is strong judicial system in place for public claims. (World Bank sustainable development network 2013).

###### **Japanese Case**

Urban Development in Japan is enforced with various legal backing. The Figure shows the legal framework of planning in Japan.

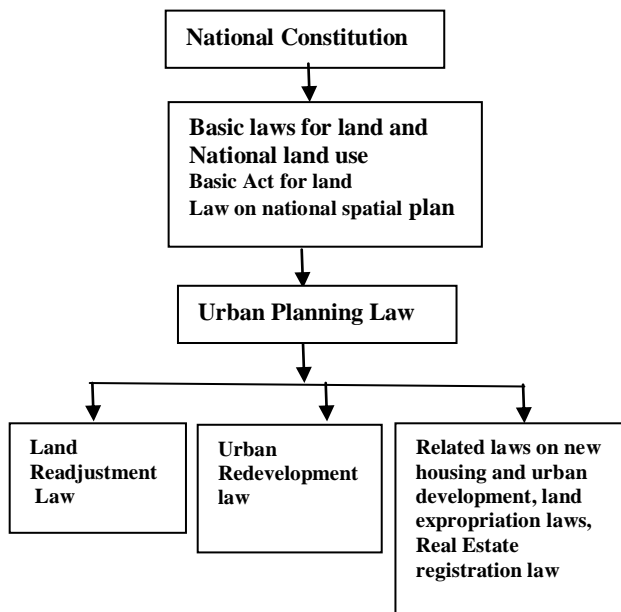


Fig. 1 Legal Framework of planning in Japan (Matsui 2017)

In 1954 separate LR law was established. The stakeholders of LR are in three categories Central Government, Local Government and Government Corporation as well as private developers. Under the law different types of LR in Japan are carried out such as New Town development in sub urban areas, post –disaster reconstruction, city center and station area redevelopment, improvement of congested and wooden residential areas, integrated LR with railway development and small scale LR for land consolidation in urbanization. Each landowner must contribute a portion of previous land (up to 30 percent of total land) to provide space for roads, green parks other public land and for reserve land. (Sorensen 1999). Large –scale LR projects are implemented for new town development in response to socio-economic recovery and increased housing demand (Matsui 2017). Central Government provides subsidy and incentives to LR Implementers. Incentives can be no interest governmental LR funds, tax exemption or reduction on taxation. Government also encourages private LR projects by providing technical and financial support. Furthermore with application of LR Urban Redevelopment (UR) is done for building development in high intensity land use. The Figure shows the conceptual model of UR. In this model land rights are transferred to part of building rights

and share the joint ownership of plot and building.

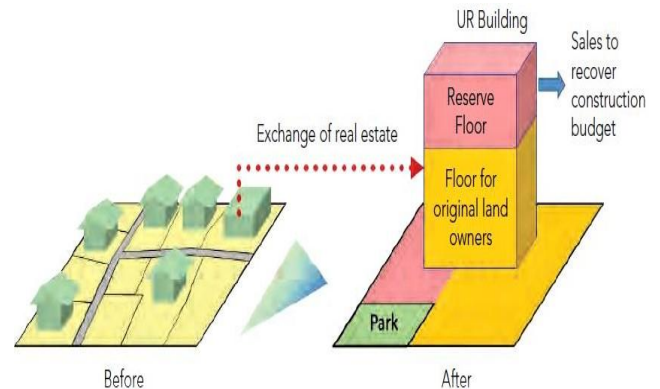


Fig. 2 Conceptual model of UR with application of LR (Matsui 2017)

Since many LR projects have been practiced a lot it is improved and refined then and now for better managed urbanization in Japan.

### 3.1.3 Land Readjustment in Kathmandu Valley.

Land readjustment in Nepal was introduced in 1975 with the initiation of Chipley Dhunga (13.5 ha) project in Pokhara. In the same year pilot project of LR was commenced in Gongabu. Land readjustment in Nepal is referred as land pooling. There are several completed land pooling projects in Kathmandu Valley.

### 3.1.4 Legal and Institutional Framework of LR in Kathmandu Valley

The town development act 1988, in the section 12 of the act empowered the town development committee for initiation and implementation of land development for urban housing through Guided land development (GLD), Site and Services (S&S) and land pooling. The act states the procedure and conditions to secure landowners agreement, government’s approval and project implementation.

After the enactment of the Local Self Government Act 1999, Municipalities are also authorized to implement the LR projects in Nepal with the approval from the Town Development Committee.

Table 1: List of completed LR projects in Kathmandu Valley (KVDA 2019)

| S. No. | Project name                   | Road Percentage | Open space Percentage | Total Area of site ( Ropani) | Completed years | Implementing agency |
|--------|--------------------------------|-----------------|-----------------------|------------------------------|-----------------|---------------------|
| 1      | Gongabu                        | 17.5 %          | 5.6 %                 | 282                          | 8               | KVTDC,KMC           |
| 2      | Sainbu Bhaisepati              | 22.8%           | 12.9%                 | 552                          | 11              | TDC,LMC             |
| 3      | Dallu                          | 25%             | 7%                    | 396                          | 11              | KVTDC,KMC           |
| 4      | Kamalbinayak-1                 | 21.5%           | 4.2 %                 | 145                          | 5               | KVTDC, BM           |
| 5      | Bagmati Phant -1               | 21.6%           | 3.2%                  | 197                          | 9               | KVTDC               |
| 6      | Lubhu                          | 23.6%           | 2.8 %                 | 269                          | 3               | KVTDC               |
| 7      | Nayabazar                      | 22%             | 4%                    | 840                          | 8               | KMC                 |
| 8      | Liwali                         | 17.9%           | 4.4%                  | 670                          | 3               | BM                  |
| 9      | Chabahil,Gopi Krishna          | 22.7%           | 3.8%                  | 201                          | 7               | KVTDC               |
| 10     | Sinamangal                     | 20.3%           | 5.3%                  | 901                          | 7               | KVTDC,KMC           |
| 11     | Sinchitar                      | 18.8%           | 3.4%                  | 525                          | 7               | KVTDC,KMC           |
| 12     | Bagmati Nagar                  | -               | -                     | -                            | 11              | KVTDPIC, KMC        |
| 13     | Chikuphant Kirtipur I          | 23%             | 5%                    | 107                          | 4               | NA                  |
| 14     | Ichangu Narayan                | -               | -                     | 608                          | 8               | KVTDC               |
| 15     | Chamati                        | -               | -                     | 1440                         | 16              | KMC                 |
| 16     | Kirtipur II                    | -               | -                     |                              | 14              | KVDA                |
| 17     | Kamerotar                      | -               | -                     | 900                          | 13              | KVDA                |
| 18     | Manohara Phant                 | -               | -                     | 1774                         | 13              | KMC                 |
| 19     | Tumucho Dugure                 | -               | -                     | 600                          | 11              | BM                  |
| 20     | Dibyewori                      | -               | -                     | 553                          | 10              | KVDA,KMC            |
| 21     | Sainbu Nakhudol                | -               | -                     | 353                          | 11              | KVDA,LMC            |
| 22     | Bagamati Phant II (Shankhamul) | -               | -                     | 140                          | 11              | KVDA,LMC            |

According to the Town Development Act 1988, Sub-section 12.1.2 amendment made on 2007, more than 51% of landowners consent is required to implement the LR projects. The provision of open space should be minimum 5 %. Land readjustment can be carried out in two conditions. First, the government identifies the area which is urbanizing at fast pace but the basic infrastructure is not in place. Mainly urban fringes with irregular shaped plots are developed in regular shaped residential plots with necessary basic infrastructure. Secondly the landowners and tenants themselves can initiate for the LR projects for the development of their area. For this, according to the Town Development

Act 1988, in the sub section 12.1.2a it is stated that land pooling can be operated where at least fifty families can reside.

Land readjustment in Nepal has three levels of institutional arrangement a) Project Implementation Committee (PIC) is set up in town development committee under the Ministry of Planning and Physical Works, b) Project Management Sub-Committee (PMSC) and User's committee. PMSC and User's Committee makes the decision and PIC implements it (KMC 1999). Kathmandu Valley Town Development Committee was established in 1976 under Town development Act 1972 to implement development plans in Kathmandu Valley. In 2012, separate Ministry of Urban

Development (MoUD) was established by government of Nepal for comprehensive urban development on a national level. Kathmandu Valley Development Authority (KVDA) was also formed under MoUD which replaced KVTDC to develop integrated development plans for Kathmandu Valley.

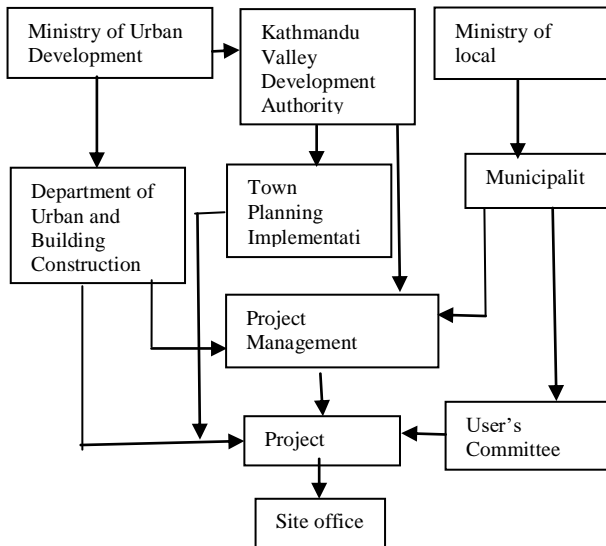


Fig. 3 Institutional Framework of LR in Kathmandu Valley (Subba 2009)

### 3.2 Research Methods and Strategy

The research is qualitative in nature. Primary data is collected from in-depth semi-structured open ended interviews with the experts like planners and managers from local government, central government, lawyer and academicians and landowners regarding the case study project. The interview majorly focuses on legal framework and Institutional strength and procedure of LR. Data and information was collected by purposive sampling technique. Focus group discussion was also done on how to improve our existing legal and Institutional framework. Secondary data provided the overview of international cases such as German and Japanese cases. Shortcomings of LR regarding its legal and institutional framework of Kathmandu Valley has been analyzed. Positive inferences were drawn from LR in Germany and Japan for improvement of LR technique in Nepal. The field study of Nayabazar land pooling majorly focused on the quality of street network and open spaces in the area. The open

spaces and road network is the primary element in any neighborhood. The field observation as well as close ended questionnaire survey of the inhabitants is conducted with the help of students of department of Architecture, Khwopa Engineering College in December 2019.

### 4. Case Study Area

The case study area is Nayabazar Land Pooling. It is situated at North West of Kathmandu Metropolitan city known as Nayabazar, Balaju. To the north and west it is bounded by the Bishnumati River, to the east by Balaju road and to the south by Kathmandu core. Southern part of Nayabazar land pooling area is called Khusibun which means River side farmland in Newari language. There were only two major road seen before land pooling (Fig.. 5.) One is east – west road of 3m width and another is circular road of 3.5m width. The pedestrian paths were 2 feet in width. After land pooling road access are provided to every plot. The primary roads are 6m to 8m and some roads are 2m to 4m as there were already permanent buildings before land pooling. 70 % of the land is returned to the landowners which is 2320 nos. of plots. 22% of land is allocated for road, 4 % for open space and remaining 4% for saleable plots and community purpose. The area of the site is 42 hectare. In this project a part of the total cost is met by HMG, KMC and also through the bank loan assistance from ADB. Since LR has been considered as the appropriate tool for urban development in our country, one of the completed land pooling area where almost all the plots were built is taken as a case study area. Nayabazar is one of the fast developed Land pooling area in Kathmandu. There were only 528 houses before land pooling. The area is now a dense settlement with more than 2000 houses. The legal and Institutional framework and procedure of the area are studied to make comparison with the international case studies. Requirement of good road network and open space are the basic element in any neighborhood. So planning of the streets and open spaces and its current use are studied in this area.

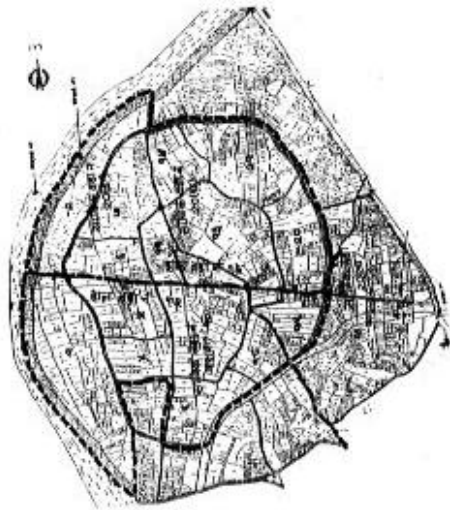


Fig. 4 Map of Nayabazar before and after Land Pooling (DUDBC 2003)

#### 4.1 Institutional Framework of the Nayabazar Land Readjustment Project.

Nayabazar land pooling project has got three major project management bodies for efficient and appropriate implementation of the project. Project Execution Committee (PEC), Project implementing Body known as Municipal Infrastructure Improvement Project, (MIIP), Ward Land Management Committee. PEC monitors and supports MIIP and helps to coordinate the different stakeholders at policy level. PEC consists of different actors, such as Town Development

Committee, Kathmandu Valley Urban Development Project, Ministry of Housing and Physical Planning. It also consists of line agencies such as water supply Corporation, Sewerage Board, Electricity and Road Department. There are other related offices, such as Land Revenue and Survey Department. The PEC committee is chaired by Mayor of Kathmandu Metropolitan City. MIIP was the main responsible body which monitors and formulates implementation strategies for this LR project in close coordination with land management subcommittee. The administrative issues, technical issues, co-ordination with the land information department and other line agencies are also done by MIIP. Ward land management committee plays intermediate role in delivering the decision of the MIIP to the User's Committee (UC). It plays major role in decision making at local level planning of the project with the coordination of the User's committee. The UC represents all the landowners and tenants of the project area to take field level decision. In Nayabazar land pooling project Landowners played the important role as they decided how much land will be contributed for the development cost of the project, such as infrastructure, open spaces, development and management cost. According to the civil engineer of KMC, "The level and quality of the infrastructure depends on the will of the landowners as the land belongs to them."

According to the project report of Nayabazar Land Pooling scheme prepared by Kathmandu Municipality following procedure for the project has been adopted. First, through the Land Acquisition Act 1978, all the land of the project was transferred temporarily to the LMSC. Survey of the area and preliminary design of the infrastructures (roads, storm water drainage, sanitary sewers, solid waste collection, street lighting, and open spaces) in the project area were done by the consultants. Final design of the project was made after the approval of the land management Committee and User's Committee as decision of land contribution depends largely in the will of the landowners. In doing so, the landowners contributed a certain percentage of their land for the infrastructure and for service plots and open spaces. The plots were then readjusted taking into account the contribution of land for this purpose. The landowners and the implementing

agencies shall be working as partners of the programme. The community was to be involved right from the planning stage to implementation of the project. The work was commenced by the selected contractors and infrastructures were built according to the approved planning. After the completion of the project every landowner in the project was given back readjusted plots. The service plots allocated to land management sub-committees could be sold to meet the cost of infrastructure of the project area. Landowners having land less than or equal to the minimum permissible size and having houses in the land parcels where it was not possible to deduct the contribution in terms of land shall contribute in terms of cash. After completion of the LP scheme for the entire LP area, temporary landowners' certificate was issued to each and every landowner. The project took almost 8 years to complete.

## 5. Result and Discussion`

Land Readjustment has been proved to be the one of the best planning tool for urban development. It has been practiced in many countries to have planned development. After reviewing the international cases specially German and Japanese cases comparative analysis can be done with the ongoing LR in our country. In order to achieve planned development through LR there should be improvement in Legal and Institutional framework.

### 5.1 Legal Analysis

Town Development Act 1988 describes the conditions available to implement land readjustment, site and services and guided land development in the urban areas. So small scale neighborhood level projects are carried out by government. There is no legal binding for large scale, city level LR projects so far. Insufficient legal framework for LR technique gives rise to grievances from landowners with regard to land contribution and property rights blocked by the implementing agency till project completion which may be prolonged. The law does not provide any legal advice in such conditions. In Germany legal binding is so strong that the scheme design of LR project is

guided by land use plans and government has authority to acquire land even at the places landowners disagree the project. Land Value capture is practiced in Germany by municipality to further improve the infrastructure quality of LR projects. In this way the benefit is shared between landowners and public goods equally. Fig. 5 shows how the price of land is increased after LR project is completed. All the benefits go to the landowners only. The financial benefit cannot be utilized to improve quality of infrastructure within the project area.

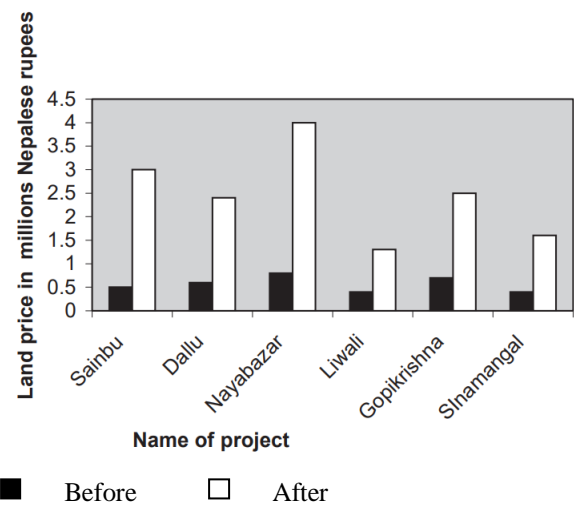


Fig. 5 Land Price before and after the LR project (Karki 2004)

### 5.2 Institutional Analysis

At present land readjustment projects are solely undertaken by government organizations either by KVDA or municipality in case of Kathmandu Valley. Like in Germany and Japan streamlined institutional practice would be better for clear and specific land pooling laws and regulations. The LR projects in Kathmandu Valley lack cooperation and coordination between inter-institution agencies such as road department, Water Supply Corporation, electricity authority and telecommunication corporation thus delaying the project. The roles and responsibilities of projects management committee and landowners' committee are not explicitly defined thus creating ambiguity. Almost all projects face financial crisis in the beginning as there is no such institutional arrangement to provide financial support. There is lack of information dissemination

regarding the project proposal which is necessary for arousing public awareness, especially among the landowners to reduce grievances after implementation of project.

### 5.3 Analysis of Street Network and Open Spaces of Nayabazar Land Pooling

The Nayabazar LP mainly focused on planning of road network and providing pocket of open spaces. The road percentage in the area is 22% and open space is 4 %. There is no definite street pattern. It does not have grid iron pattern unlike other land pooling area. Comparing the maps of before and after land pooling map of Nayabazar in Fig. 4 we can see that the old streets and foot rails are upgraded in new planning. These streets are widened and other tertiary streets are added to provide access to every plot. There are very less dead end streets. The brief questionnaire survey was done regarding the streets and open spaces of the area. Around 30 inhabitants of the area are the respondent. At first the convenience of the street network is questioned in which more than 50 % find it convenient and 36 % feel it is inconvenient. Since all the streets are interconnected the inhabitants who walks find it convenient shown in Fig. 6a. All the streets have vehicular access except those streets are narrow where building exist before LP is implemented. According to local people one of the street junction known as *Geetanjali chowk* has maximum number of vehicle accident rate. There is a sign board stating that the place is accident prone area in Fig. 6b. Sidewalks provided in main road are occupied by shop materials. This street junctions do not have enough turning radius. Many of the streets in the area are incorporated from existing road network. During land pooling the streets are widened but the standard norms may not have been achieved. Initially as shown in Fig. 7a there are five open spaces allocated in the area. But now during field survey one of the open space in the northwest of the site is used by KUKL where water tank is built for supply of drinking water to the inhabitants in Fig. 7b. This open space with a large green area with boundary wall and gate is not accessible to local public. In Fig. 7c, the martial art hall is built where the people practised marshal

art. There is open space known as football ground in the north eastern part of the area where children were playing freely in Fig. 7d. The place was also used for driving practice. These activities were observed during field visit. Khusibun Park in Fig. 7e is open for the public in morning and evening which is well maintained. Other open spaces are either under used as in Fig. 7f which is located at backside of residential plots of the area or not accessible to all public such as water tank area.

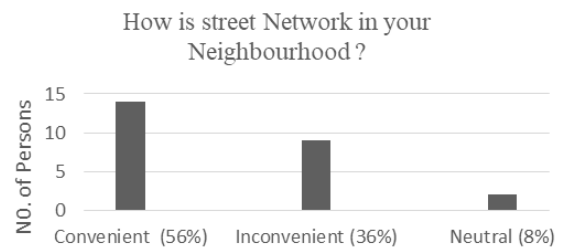


Fig. 6a Bar chart showing inhabitant's perception on street network (Neighbourhood planning studio 2019 A.D, modified by author)



Fig. 6b Photograph of Gitanjali chowk (author 2019)

The questionnaire survey with the inhabitants also shows that the open space provided is insufficient in Fig. 8a. There is community building known as *Layeta Chemin* the site where the office of the user community is also located and used for communal gathering during feast and festivals in Fig. 7g. Inhabitants consider this space as socialization place. The Fig. 8b shows the provided open spaces and community building in the area is useful for the inhabitants. There is a need of more public space. In order to use it efficiently by the public the location of open space also plays important role. It



should be easily accessed by the public near the streets. It should not be in hidden spaces where people feel the area is isolated and left as unused area.



Fig. 7a Google map showing open spaces and community buildings in Nayabazar LP (Faust 2019)



Fig. 7 b



Fig. 7 c



Fig. 7d



Fig. 7e



Fig. 7f



Fig. 7 g

Fig.7: b)water tank; c)Marshall Art Kendra ; d) Football ground; e) Khusibun Park f) unused open space; g) Community Building (author 2019)

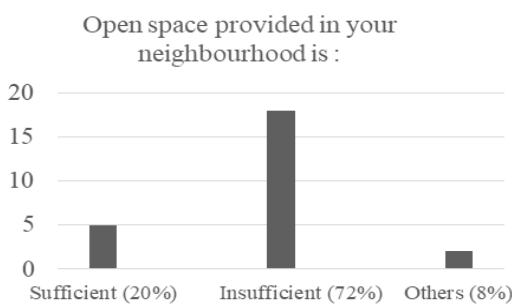


Fig. 8a Inhabitant's perception on open spaces (Neighborhood planning studio 2019 A.D, modified by author)

How do you find open / community spaces in your neighbourhood ?

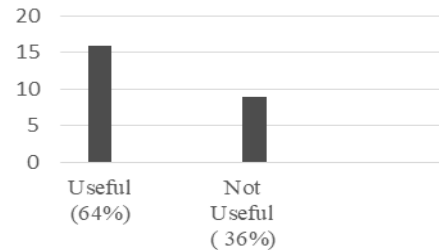


Fig. 8b Inhabitant's perception on Community space (Neighborhood planning studio 2019 A.D, modified by author)

## 6. Conclusion and Recommendations

The research aims to understand the role and outcome of Land Readjustment through literature review, international experience and case study of Nayabazar Land pooling. To sum up Land Readjustment should be viewed as a critical tool for urban land management. It benefits both the landowners and local government. So local government has to improve this tool according to the changing situation and place. Nepal has now become the federal democratic republican state since 2072 B.S. So local government of all provinces can make comprehensive land use plan or master plan of their city. Each Province will have Provincial Planning Commission (PPC) which provides vision for urban development in the province. Each municipal government do have urban planning department or division or unit in its office and also City Planning Commission (CPC) which provides vision for urban planning in its territory. In this way the enforcement of land use plan will be more effective. In case of Kathmandu Valley there are number of LR projects completed. So there is no doubt that the LR has proven to be effective tool to achieve planned settlement. It is very essential that we learn from our previous experiences and improve every time to have planned urban development in our country. So, through this research some of the key points for improvement of LR has been listed below:

- Land Readjustment projects in Kathmandu Valley need to focus on good quality basic infrastructure. At least open spaces and road network need to have standard design for both pedestrian safety and vehicles. Sidewalks and playgrounds are essential in planned areas. Infrastructure like water supply, electricity and drainage should be planned before implementation.
- Land Value capture is a tool which helps the local government to generate finance to improve the infrastructure quality of the LR area as in international cases. Depending on the project scale and type, schemes should be made to finance the project.
- Updated cadastral map is vital for smooth running of the project. Likewise transparent land market is needed to assess the value based distribution method and lessen the grievances from landowner's side.
- Government should encourage land owners and private sector for participation in LR by providing proper incentives. Federal government role could be vital for providing easy access to financing for infrastructure development in LR project because it is difficult for land owners to contribute for infrastructure development outside Kathmandu Valley where land price is not very high to meet the development cost.
- Large scale LR projects are necessary to have well planned city and town. The piecemeal approach, like before, does not contribute much in city level planning. There should be separate LR law which clearly specify set of rules and regulations, and procedure must be clearly detailed out regarding the different scales and types of LR projects needed for overall development of the city.

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