

# Land Pooling / Readjustment Programmes in Nepal

Punya P. OLI, Nepal

## SUMMARY

The growth of urbanisation started in Nepal during 1980s. The annual urban population growth rate is about 5% and about 25% percent of Nepalese live in urban areas. The city areas are expanding as per the need of housing without planning, and prior provision of infrastructures. As per the cadastral survey, only 23% of territory belongs to the private ownership which is mostly good agricultural land and being urbanised. The average size of parcel is about 180 sq. m. The infrastructures added later date after construction of the building.

The present urbanisation is neither planned nor sustainable nor will meet million Development goals (MDG). The squatter settlements are also illegally settled by political parties cadres to their supporters in vulnerable and unsafe areas of public places. Dept. of Housing and Physical Planning, of Nepal is planning to develop modern cities through land pooling (readjustment) programmes as per the Town Development Act 2045. It is difficult to have consent of 51% of land owners prior to the execution of land pooling programme and support of government for infrastructures development, and assistant to landless and very small land owners on land contribution.

The land pooling method is the only programme which will assist on sustainable urban development with appropriate infrastructures, and land consolidation without financial assistance of the government, most of land litigation will be solved and nobody will be evicted from their areas. The land pooling programmes, if implemented will assist in meeting the MDG and climate proof goals.

In this article, various problems including training stakeholders and their solutions are explained in Nepalese context.

## 2. KEY WORDS

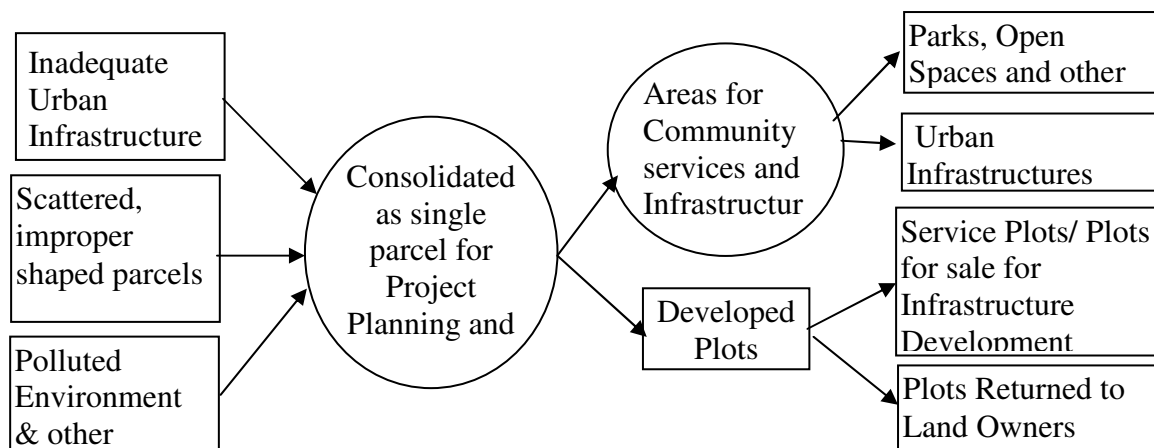
Land Pooling, Cadastral data, Land valuation, Readjustment plans, Infrastructures development, climate proof goals.

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## 3. BACKGROUND

Nepal is a mountainous country covering 147,181 sq. Km. with 23.1 million people (CBS, census of 2001) among which 3.2 million people living in urban area, representing 14 percent of the total population of the country. The annual population growth of Nepal was 2.27% whereas urban population is increasing 6.65% per annum (CBS, 2003) which signifies the high rate of urbanisation and demands of housing. Concentration of population and housing is very high in urban areas. Most of the urban areas of Nepal are unplanned where housing and infrastructures situation are worst. The government does not have enough resources to develop these infrastructures. It is also striving to achieve minimum development goals (MDG).



**Chart No.1**

The land readjustment programme is term as land pooling in English and Jagga Ekikaran or Chaklabandi in Nepali. So the term land pooling is used in the article. It is fairly developed in Nepal to assist urban development and not yet utilized in the agricultural land uses.

Many development projects like road, hydro-electric power generation, will develop the surrounding areas and the resident population who will contribute the land and be benifited. The acquiring land by compulsory purchase will be troublesome, displaced the local residence and take very long time, which will further increase the project costs. In order to generate resources for the development of infrastructure in peri-urban or developing areas and the construction project requiring to acquire large land area are now being carried out by land pooling/ readjustment method. It is described by the above chart No. 1.

Nepal started to use land pooling programme which is the best method to acquire land and fund for the infrastructure development and develop plot suitable sizes as described in the chart.

Land of a person is fragmented into smaller pieces to fit the topography and located 2-3 difference places. Therefore, it needs to be resized and consolidated for building construction and most beneficial uses. Hence, it is carried out with provision of legislation.

#### **4. LEGISLATION**

The legislation are Urban development Act 2045, Para 12 (2) defines the land pooling and the procedures. The land pooling Manual 2061, compiled by SB Sangachhe and G.P Gorkhali, and published by Dept, of Town Development and Building Construction, Min. of Physical Planning and Construction, Govt. of Nepal, is guiding the land pooling/readjustment programmes for urban development in Nepal. The users committee and project management committee will provide guidance for running land pooling the project.

Land (Survey) Act 2019, Para 11 (C) had provision of survey of private, government or common land and Land (Survey) Bye law 2058 Para 24, also have provision on the land pooling.

Land related Act 2021, has provision of minimum ceiling of land, that a parcel could be sub-divided i.e. in case of urban land, minimum ceiling are is 80 sq m in hill and mountain areas and 85 sq. m in Terai areas. There are also maximum ceiling of land which is not problem in land pooling projects.

Building standard also fixed the 6 m minimum size of frontage of the parcel. The standards for infrastructures of urban development are being worked out; however, twenty years of town development programme of Kathmandu Valley can be used as guide.

#### **5. INSTITUTIONAL ARRANGMENT**

The government of Nepal constitute town development committee or project with appropriate legislation to carry out the land pooling or urban development programme. The Kathmandu Valley Town Development Committee(KVTDC), Outer Ring Road Development Project, Town Development Committee in municipal or town of developing areas outside Kathmandu Valley are the examples, who will develop town plans and carry out land pooling programmes.

The users committees from land owners, and project implementation committee from the stakeholders will be also constituted to each project to mobilize land owners and other stakeholders.

The town development committee generally composed under the member secretary of district town planner and chaired by member secretary of KVTDC in Kathmandu Valley or independent expert nominated by the government. Study is generally carried out by the district town planning and building construction office with private surveyors and planners.

Most of the large land development work is carried by Land pooling techniques, which is public, private partnership on private, public and government land.

#### **6. FEASIBILITY STUDY**

The concerned project conducts the study of the possible areas for feasibility of land pooling by studying maps and documents, interaction to local officials and land owners and site visit. The area is identified in terms of technical feasibility-suitability of the area for urban development and social feasibility- the acceptability of programmes by land owners, agencies and local politicians.

The feasibility study is carried out mostly where the land owners applied for urban development, construction of buildings are taking place rapidly, government project requiring of large private portion of land and area assigned by government for land pooling. If the area feasible, than, the general meeting of stakeholders will request the concerned government agency to implement land pooling programme. During this period, nodal points of major infrastructures and tentative areas will be fixed by the stake holders and district development committee for land pooling programme.

## **7. DETAIL PLANNING**

It will be carried out by detail surveys-digital topographical surveys, preparation digital cadastral data (map and records), establishment of GIS, socio-economic survey, the study of economic and social feasibilities of land owners and stakeholders, decision on contribution policy, and preparation of urban development plan and sample readjustment of cadastral plots. The detail reports including descriptive text, maps and charts in hard and soft copies form.

During the period, the area will be divided into sector, sub sector, neighbourhood, blocks and sub blocks. The existing administrative boundary and land owners land to be returned will be considered during the sub block or road alignment planning. No land owner, total area ward(administrative boundary) or natural features will be effected during block planning. As far as possible, the road will be planned to be the boundary of existing administrative units. The survey activities briefly described as following:

### **i. Mapping**

The control survey for topographical mapping will be based on national control networks and carry out to cm accuracy. If the area will be extended and the inaccuracy of existing control points may be not negligible, the coordinates of mid point will be fixed and calculation be carried out accordingly.

Topographical mapping will be carried using total stations, and graphical maps at the scale of 1:500 will also be produced, showing all details including infrastructures - road, electricity, water supply, sewerage lines, other facilities. Frontages of buildings are also important for new road network planning. The connection of water, electricity, telephone and roads will be considered and shown in mapping areas. Generally survey area is extended 50 m outside the periphery of the area. During survey period, any objections of the land owners will be appear on land pooling programme. The surveyor should arrange meetings of stakeholders and official, as and when problem will be arose and the finding of study will be presentation at the end of field works.

The half of these earlier cadastral maps are mainly isle land type or free sheet maps. They may not have accurate connection to each other. These existing cadastral data (maps and records) will be digitized and superimposed on digital topographical maps, map by map and the cadastral data base will be prepared as per the accuracy of maps.

### **ii. Land Valuation:**

The existing price of land parcel will also be evaluated during survey period judging the price of land owner willing to sell, and the purchaser or real estate agent willing to pay and from the cadastral survey data which also have of land area, land class and use . The simple questionnaire is completed in the field for the purpose.

After planning and provision of infrastructure, the value of land/land class will be increased as per the land classes. The price of the land will be estimated as per land price existing developed neighbouring areas. The real estate agency will also be asked for the price they are willing to pay after the infrastructure development.

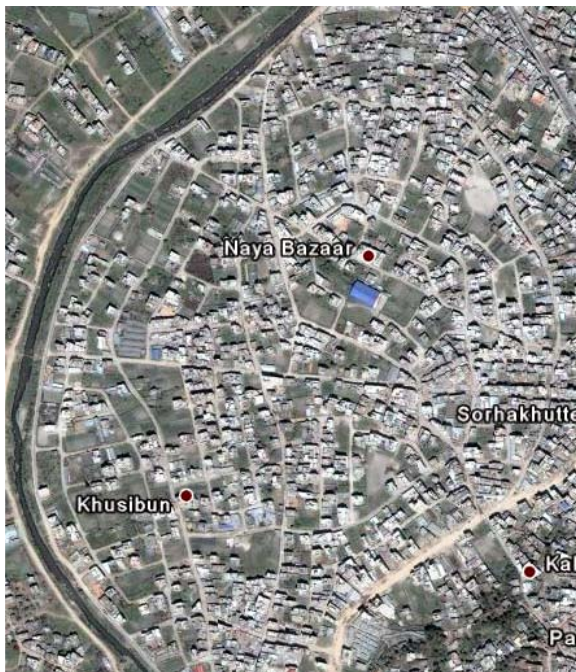
**iii. Socio Economic Survey:**

The socio-economic survey of all land owners including residing outside the land pooling area will be conducted to explain about the project, collect their opinion about the project, infrastructure requirement, land utilization and their contribution, and gather other information required for planning. A simple questionnaire will be completed from all land owners.

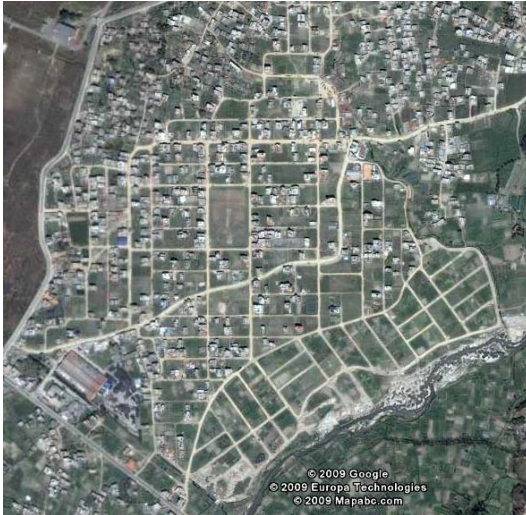
**iv. Readjustment:**

The sample readjustment plan of a block will be also prepared after decision of contribution policy, infrastructure, road and block planning and calculation of total project cost to be borne by each land owner or parcel.

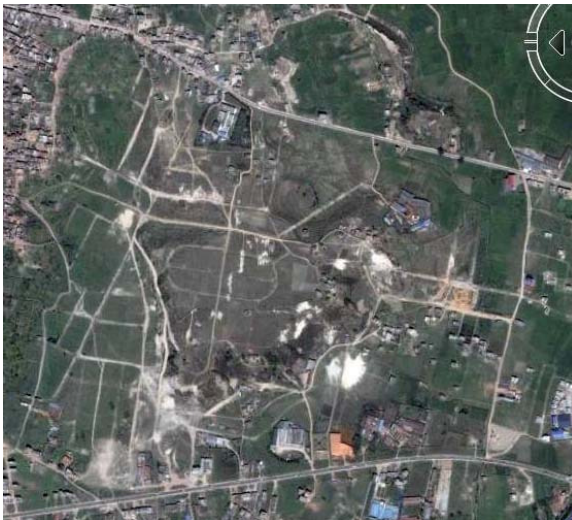
In Nepal the contribution of land pooling of a parcel is recovered by deducting the portion of land parcel that receive extra facilities. Generally the contribution of land of land pooling in Nepal is about 19% for road, 5% open spaces, 8-10% infrastructure development and 4% administrative cost and in total about 35-40% of the land. The individual land owner has to contribute 15-55% of parcel depending upon the position of land and infrastructure available. The minimum size of parcel for planning will be kept 125 sq. m and 80 or 85 sq m parcels could consider as rare case. The plot depth and frontage ratio of parcel will be 1.5-2.5 and minimum frontage will be more than 6m. The sample of some land pooling project as seen in Google are below:



Naya Bajar LP area



Jadibuti LP area : near completion



Kamerotar L P area: under construction

#### v) Land Use

Most of the land pooling projects implemented to provide comfortable housing plots on small areas to control the unplanned urban sprawl. After implementation of land pooling programmes, the area will be a mixture of housing plots, shops, small scale industrial and commercial areas. It is difficult to develop the industrial and commercial plots in such small plots. Therefore, large scale land pooling programme should assign the larger plots for commercial and industrial purposes near the main road areas. There are common opinions that the block adjacent to outer ring road or main road will have commercial and industrial plots with larger plots and plot depths. The area adjacent to it will be mixed commercial/ industrial and residential uses and further blocks adjacent minor roads will be mainly residential use. The land use areas will be assigned as per the existing situation and planned infrastructures. The parks/open spaces are also assigned to each block or large open spaces within

neighbourhood. The educational, institutional, communal and other areas are assigned as per the norms within blocks, neighbourhood.

**vi. Cost Recovery:**

The cost of land pooling work is generally borne by selling every year service plots assigned to each sub block as per the annual budget requirement. Initially seed money and administrative cost will be available from government and donor agency. The local administration or financial institution may also be involved to assist the programme by providing soft loan to develop infrastructure in initial phase of the programme. The cost will be recovered by selling developed service plots annually. Before implementation of the programme, initial cost or seed money should be arranged and detail financial schedule is required to prepare to sell the developed plots.

## **6. IMPLEMENTATION**

The implementation of programme consists of works like formation of users' committee, project management committees and project office, getting consensus of land owners, updating maps and land records, preparation readjustment plans and marking plots on the ground, final design of infrastructures and constructions of roads and other infrastructures. It may take 3-5 years to complete the work of this phase. The project in this phase will only starts after approval of planning and commitment on implementation by the government and concerned authorities and leaders. It may be briefly describe as following:

**i. Consensus Collection:**

A team of sociologists will be assigned and series of local meetings will be conducted along with project teams, land owners, local authority and other stakeholders at various levels. During the meetings users' committee of each word will be formed. The land owners will be requested to sign for consensus of carrying out development works through the land pooling programme. It will be most difficult tasks to have consensus of all people especially at present Nepal, where there are diverse political opinions about ownership of land.

**ii. Preparation of Readjustment Plans and Demarcation**

The topographical and cadastral data base will be updated before finalization of readjustment plan. The readjustment plans will be prepared after decision of contribution policy which fairly fixed. However, there will be minor variation in each project, as it will be decided by project management committee. The contribution area of each parcel will be calculated and the positions of all parcel areas will be tentatively fixed. Generally, a land owner will get his/her land in the original location, where his/her majority of land falls or his house exists. During the planning of minor roads, demolition of house will not be carried out. If it is economical to demolish the house, than to relocate the main road, the house will be compensated to rebuild in the new location of parcel. The land parcel of small plots may be located on smaller plot depth areas. The tentatively fixed parcel will be decided after discussion with land owners. The new parcels plans will be prepared with tentative parcel No, area and dimension of parcel. The field book will also be prepared and provisional land certificates will be issued. The demarcation of all parcels in the field will be set out

including road by concrete markers using existing ground control point established during topographical survey.

The above cadastral plans will be also printed to the scale of the cadastral map with new parcel numbers and sent along with field book to Survey Department for approval. The new maps and records will replaced the existing maps and records after approval of Survey Department, concerned district survey office and Land Revenue office. The concerned office will issue the final (new) land owner registration certificates to land owners.

**iii. Finalization of Infrastructure Plans and Cost:**

After updating maps, the minor changes of minor roads and other infrastructures will be carried out and final drawings, cost estimates and tender documents will be prepared.

**iv. Construction of Infrastructure:**

The track road will be opened on the demarcated areas and construction will be carried out as per planned schedule. The land owner will be compensated for the crops which they would be unable to cultivate. The construction will be carried out phase wise basis block by block. The road, drainage, sewer line and electricity poles and line will be constructed completely one area by another areas. It will be generally contracted out and supervised and monitored by the project office in collaboration with users' committee.

## **9 PROBLEMS ENCOUNTERED**

The problems encountered of the implementation of land pooling projects are social feasibility or convincing land owners for land pooling, weakness of cadastral map and records, management of small parcels, location of returned parcel and financial problems.

**i. Social Feasibility:**

It is hard convince the land owners to agree to allow their land to carry out land pooling. They are sure that the value of land will be increased tremendously after land pooling. The project office should seriously explain and commit that the programme will be implemented as per schedule and honestly. Some political parties or local land brokers may disturb the work and misguide the land owners. It will be seriously delay the schedule.

**ii. Weakness of Cadastral Maps and Documents:**

The cadastral maps have errors due to smaller scale of maps, difficulty to match adjoining sheets and errors of land records. Some of the parcel may not be registered or has litigation or on mortgages.

If the total area of the project and the summation of area of all parcels as per the land records are same or more or less same, it will not be the problem. Because, new parcel may not be the same and after land pooling the owners will have undisputed, accurate map and document for future. The mismatching of adjoining sheets will be solved.



The unregistered land disputed ownership or on mortgaged land will also be readjusted and returned to the land owners with ownership situation as it existed.

**iii. Management of Small Parcels:**

The small parcels will be managed by consolidating the other parcels to form a better parcel. If the owner has parcel smaller than minimum size, he/she will be provided minimum size of parcel, however the owner required pay the present price of extra land in instalments basis or he/she has to sell his land to the project which is against the objective of the programme.

**iv. Location of Parcels:**

The parcel will be located to its original position. The existing house/building will not be shifted. The owner of parcels located 2 or more places will be consolidated and allowed to choose the location. Similarly, owner of smaller parcel required to swift to the area of low plot depth or procure more land from the project.

**v. Financial Problems:**

There will be no fund in initial stage or without developing infrastructure and selling the service plot. Fund is also required for the feasibility study, detail planning and construction of infrastructure of priority areas. It is usually carried out by the assistance of central and local governments, seed money, or bank loans. After selling the parcels first year lot, the project will have required fund for infrastructural development and payment of loan if any.

The poor and landless/houseless persons will not be considered in land pooling programme because it looks after the interest of land owners and government may purchase the service plots and distribute to poor at soft loan.

There will be numerous financial problems encounter during implementation, which will be solved in consultation with users' committee and members of project management committee.

## **10 CLIMATE PROOF GOALS**

The land pooling improves the environment of the city or municipality at the investment of land owners. It will conserve cultural and natural heritages existed in the area and provide spaces for tree plantation.

Past land pooling considered only the conservation and improvement of cultural and urban recreational environment. Instead of taxing more to the uncultivated land in urban areas, municipality should encourage land owners to have more trees and open spaces in city areas. The urban greens are being planned in higher slopping areas with walkways along with terraces in land pooling areas. It may require tree plantation or grove with number of trees ten times of the projected population to meet the climate proof goals. Therefore, it may require 10-15% of land for park and open space instead of 5% presently prescribed. The areas for water harvesting, solar, wind or bio energy generation and composting facilities of solid waste should be assigned.

The government and donors should encourage and assist the land pooling programme on production of alternate energy and water harvesting.

## **11 CONCLUSION AND RECOMMENDATION**

The land pooling programme contributed development of infrastructure, better environment, comfortable housing plots in Nepal, specially in Kathmandu Valley on the expenses of land owners. The government and donor should assist and encourage such programmes all over in Nepal. It is also required to train engineers to carry out such programme on ethnic community areas. Adequate water supplies are important for successful implementation of such programme and implement the climate change programmes. The criteria of existing land pooling are required to revise to provide water harvesting facilities, sufficient open space and greeneries. After completion of land use planning, the present weaknesses of implementing land pooling on prime agricultural land is expected to be avoided and poor and/ land less persons will also be accommodated by the government investment on such programme. The municipality provides 40% subsidies for infrastructure development in city areas. Therefore, the land pooling programme, the planned urban development should be encouraged by providing 50% or more funding.

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