Land Pooling (Pooling) in Practice

This description is based on the aggregate experience of places where land pooling projects have been implemented, primarily in the United Kingdom, Japan, Germany, and Australia. There is very limited experience with this method in the U.S.

Land pooling has been used to address the following conditions:

- Development of new urban sites;
- Redevelopment of an already urbanized area;
- Re-platting of large, non-conforming subdivisions with a large number of vacant lots;
- Disaster rehabilitation;
- Improvement and expansion of public facilities.

In land pooling projects, landowners contribute a portion of their land for the benefit of the entire project, and in return get greater utility and value for the remaining portion through better access, more developable building sites and/or improved public facilities and infrastructure.

Land pooling projects are usually limited to re-plotting and the improvement of common infrastructure and do not include direct improvement of buildings. Buildings are typically owned by a single individual or a small group.

Land pooling procedures are complex. Time cannot be a critical factor. It takes time for the landowners to understand the project before they may consider contributing pieces of their real property. Since many people’s interests are involved, it is necessary to listen and fully understand everyone’s opinion, and adjust the project accordingly, which takes more time.

Basic Organization

Land poolings are implemented and facilitated by three types of organizations:

- Public Authority – i.e., the State or County government;
- Association – i.e., an individual, several individuals, or a local community association working as a “Land Pooling Association”; and
- Public Corporation – i.e., a public or quasi-public housing or development corporation.

Draft plans are created by the administrative authority and through opinion surveys and orientation meetings held by community organizations, a consensus is created for the land pooling project.

Standard land pooling procedures have developed into three phases:

- Phase I – A present conditions study and map of the area is created and used for the formulation of a project’s key concept and master plans.
- Phase II – A study is carried out to check the details of the area being considered for land pooling. Then an implementation plan is developed and cost calculated.
- Phase III – Since successful land pooling projects hinge on the understanding and cooperation of the residents within the project area, surveys and studies are done to assess the awareness and attitude of residents toward the project. Public relations work to attract “favorable attention” is also done, and may include building scale models,
conducting tours of areas where successful land poolings have occurred, and distributing literature about the land pooling project.

Steps to Create a Land Pooling Project Plan

The Present Condition study is carried out to determine the condition of the project area, and includes a land and buildings assessment, a residential survey, and environmental assessment, and a traffic analysis. The present condition study is used as a tool to develop three plans; the Key Concept Plan, the Action Plan, and the Master Plan.

The Key Concept Plan is a guide to the direction of development and improvement for the project area. It contains the broad ideas that make the foundation of the project and guide the decisions pertaining to design and development standards and methods. Broad ideas such as maintaining a rural character, decreasing traffic by increasing local businesses, establish and enforce urban growth boundaries to force greater densities. The reasons for selecting land pooling over other (re)development procedures are clarified in the Key Concept Plan. The Key Concept Plan also clarifies the basic policies of land pooling, and promotes understanding and cooperation of project area residents. The Key Concept Plan consists of three elements; the Basic Policy, the Allocation for population and facilities, and the Feasibility.

Basic Policy – A vision of a better community that establishes guidelines for road and park locations once a project area has begun reploting. The Basic Policy Plan includes the planning theme, basic policy, and a basic “constitution.”

Allocation Plan – Public facilities are allocated according to the Basic Policy Plan. The Allocation Plan is broken into chapters or sub-plans that describe and indicate the proposed locations of various planning elements including population growth, neighborhoods, land use, transportation, station plaza, parks and greens, drainage, utility and waste disposal, community facility, and overall project area.

The Action Plan is the integration of everything from the present conditions study to establish improvement policy. Once approved, the action plan has legal and binding power over project activities. The action plan consists of a description of the project area, an outline of area design, an estimation of the length of implementation, and a proposed financial plan.

Typical Action Plan Outline

I. Name of the land pooling project
   A. Name of the project area
   B. Name of the implementing body

II. Area of the land pooling area
   A. Location of the land pooling area
   B. Location map of the land pooling area
   C. Districts (street names and numbers) in the project area
   D. Map of the project area that includes boundaries of project, administrative districts, city planning areas, urbanization areas, and adjacent areas outside the project boundaries

III. Outline of area design
   A. Written statement of area design
      1. Objectives of land pooling project and reasons for selecting area
2. Present conditions of land use in the project area characteristics and comprehensive description of an area’s development history, population density, land use conditions, streets, buildings, density patterns, topography, utilities, disposal facilities, educational facilities, location of industry and land prices
3. Design policy; an outline of land use design, population and public facilities allocation plans
4. Acreage before and after land pooling project
   a. Balance Sheet by categories comparing “before and after” land acreage figures
   b. Table for calculating contribution ratio
5. Estimated area of reserve land
6. Public facilities improvement policies are explained within established city zoning and planning areas; fire prevention areas, and establishment and/or improvement of major public facilities such as railways and harbors are also detailed
7. Details of building and structure removal plans
   B. Design map

IV. Designated project implementation period
V. Financial plan
   A. Revenues; national subsidies, prefectural grants, municipal share defrayments, sale of reserve lands, donations, share defrayment of public facilities management authorities
   B. Expenditures; public facilities improvement costs (road construction, building removal, water system relocation), construction costs, study and design costs, interest on loans, administrative costs
   C. Table of revenues and expenditures by the fiscal year

VI. Reference materials
   A. Implementation Ordinance
   B. Present Condition Map
   C. Estimated urbanization map

List of Maps Necessary for the Action Plan

| Location map (city planning map) | Facilities planning map |
| Project area map | Present condition map |
| Design map | Land arrangement map |
| Estimated urbanization map | Park facilities map |
| School District map | Public facility site map |
| Standard section map of road | Structure map |
| Map of areas surrounding project area | Drainage facilities map |
| Watershed area map | |
| Map showing plans of removing buildings, and relocating gas line, telephone poles, water lines, and sewer lines | |

Detailed rules for the implementation of individual land pooling projects are called Implementation Ordinances for public authority initiated projects, and agreements for private association-initiated projects.
Process and Procedure for Implementing a Land Pooling Project (Japanese system)

When a land pooling project is implemented by a public authority, the implementing agency must exhibit the project’s Action plan to the public for two weeks. The outline of the project’s design specified in the action plan must be approved by the Prefectural Governor or Minister of Construction. When a land pooling project is implemented by an association, two-thirds of the landowners and leaseholders in both numbers and acreage within the project area must approve both the agreements and the action plan. Once approved, the association applies to the Governor for legal establishment of the project. The approved agreements and action plan are then exhibited before the public for two weeks.

Control of Building Activities/Application Rights

The construction of buildings is subject to approval by the prefectural governor through the appropriate implementing body during a land pooling project. The governor’s control over building activities begins on the day the Action Plan is promulgated, and ends after replotting disposition is carried out. During the governor’s building control period, the governor may regulate alteration of lots, all new construction, enlargement and/or rebuilding of structure, installation and/or heaping of goods and loads which weigh more than five tons and are a hindrance to project completion. The governor must solicit the opinion of the implementing body prior to granting permission for building activities. Permission may be granted conditionally. If a building is constructed without permission, the governor may order them removed or rebuilt at another location after soliciting the opinions of the builder and the implementing body.

The implementing body is charged with ascertaining land ownership rights that exist in the project area from official land ownership registration books. Should applicable rights other than land ownership exist; the application forms for such rights should be signed by both the applicant and the landowner. [NOTE: In Hawaii, additional rights might be Ohana housing rights, historical/cultural rights, or agricultural rights.]

Land Pooling Council

A land pooling council is established for projects implemented by a Public Authority. The purpose of the council is to protect the rights of landowners and to ensure that landowner opinions are reflected in the replotting disposition. Council members are elected representative landowners and leaseholders within a project area. The council size is dependant on the project area, but is usually between 10 and 50 members. Representatives serve terms of not more than 5 years. The implementing agency must seek the Council’s agreement on issues pertaining to the selection of evaluators, decisions on reserve land, decisions on “no-delivery” of replots, special disposition for special sites, and what constitutes an “excessively small” site or leasehold. The council may make suggestions for replotting design, give opinions on the creation and alteration of replotting design, the designation and alteration of temporary replotting, and the amount of compensation for decreased land value after replotting disposition occurs. The council is convened by the implementing agency and a chair is elected by the representatives.

In a land pooling association, all landowners and leaseholders within the project area become members of the association. The executive board of an association is made up of at least five directors and two auditors. At a General association meeting, decisions are made with the
entire association. If the number of association members exceeds 100, a Representative association meeting may be established, and the number or representatives are established by the Agreements of the Association.

Land and building evaluators are enlisted by associations to determine land values, existing rights for lands designated as reserve land, compensation for decreased value, and payment of equity in the reploting design. When a project is implemented by a public authority, evaluators are selected by the implementing body with the approval of the council.

Replotting Design

Replotting design refers to the reallocation of land to landowners, less contributed land, within a project area using specific guidelines. A replotted parcel must “correspond” to its pre-project plotting with regards to location, acreage, soil condition, accessibility to water supply, land usage, and environment. The term correspond means a replotted lot must resemble the original lot in regards to the relative balance of the various factors listed.

- Location: “absolute” means location recorded in property register; “relative” means location relative to surrounding sites and/or facilities. Location of a site as it relates to degree of site utility is the basis of property value. Absolute location cannot be maintained if the parcel is replotted because the meets and bounds change. However, relative location can.
- Acreage: the size or extent of land over which rights are claimed. Must assume relative acreage because the meets and bounds of property may change in reploting.
- Soil condition: composition, strength/weaknesses, fertility, moisture content.
- Accessibility to water supply: relationship to water supply and drainage capacities, canals, rivers, and water channels. Water is especially important if post-pooling land is to be use for agriculture.
- Land usage: zoning and other restrictive planning measures.
- Environment: natural and social environmental factors of pre-project are retained in replotted areas.

There is flexibility in the application of the above factors. Areas where facilities or land benefit the entire community can be subject to “no delivery of replot” making them exempt from the reploting process. Examples include roads, waterways, cultural/historic sites, and public centers. Acreage of a parcel may be heavily increased in the reploting if doing so will constitute a significant increase in fire protection, decrease congestion or other hazardous conditions, or regularize shapes and sizes of smaller lots. It is possible to designate and sell “reserve land” before the reploting process to cover the initial implementation costs.

Each parcel is subject to a “contribution ratio” or a required contributable portion of land. The Contribution Ratio is calculated as follows:

- Total area of parcels before project \( = A \)
- Total area of parcels after project \( = E \)
- Average contribution ratio \( = d \)

\[
d = \frac{(A-E)}{A} = 1 - \frac{E}{A}
\]
There are three major methods for the calculation of replot values:

- **Evaluation Replotting** - Street values are utilized to calculate the total value of sites prior to project implementation and after. The positive difference of subtracting the after value from the prior value is recognized as “profit” created by land pooling. The value difference is distributed among all sites involved proportionately based on pre-project value.

- **Areal Replotting** - Communal Contribution areas are defined as parks, river areas, and roads. These are taken in proportion from all replotted sites. For example, if the community decides that they would like a new 20 acre park, then the area for the park is taken proportionately from all replotable sites. Reserve lands sold to cover implementation cost are treated as communal contribution. Frontage Contribution applies to sites that face roads created or improved by the pooling project. The utility value of sites that front new or improved roads increases based on with of the road and the length of the side that borders the road.

- **Combined Replotting** - Uses features from both Evaluation and Areal Replotting in determining replotting disposition.

**Land Evaluation: Laying the Foundation for the Action Plan**

Evaluation of land serves many purposes and includes the following:

- Create a basis for the calculation of replots;
- Select and acquire reserve lands for a project’s financial resources;
- Calculate compensation for any decrease in land values;
- Settling equity questions;
- Purchase of land for public facilities;
- Estimates the increase in value and determines the percentage of contribution ratio for the project.

When a high rate of increase in site utility is expected, the **contribution rate** per individual site may be higher than if a lower rate of increase is expected (p. 112). Standards for Calculating Site Utility Increase Ratio were developed and issued by the Ministry of Construction in October of 1950. Site utility is directly proportional to site value. The Site Utility Increase Ratio suggests that land values before and after project implementation should be equivalent when taking into account price increase caused by project improvements and price decrease caused by contribution of land. In other words, even though the absolute acreage of parcels is reduced by contribution, the value should not decrease because of the increase in value expected from impending project improvements such as roads and public utility lines.

The Utility Increase Ratio is calculated as follows:

- Increase ratio = \( Y \)
- Contribution ratio = \( d \)

\[ Y = \frac{1}{1-d} \]

- If \( Y = 1 \), then the Increase ratio is equal to the contribution;
- If \( Y > 1 \), then the Increase ratio is greater than the contribution meaning profit to landowner;
• If \( Y < 1 \), then the Increase ratio is less than the contribution meaning a loss to landowner.

Often a public facility is condemned by a project and needs to be rebuilt at a new location before the formal disposition of a reploting plan. Therefore, temporary (advanced) reploting disposition is selectively allowed for building, demolition, and road construction prior to actual reploting disposition. All rights of use and earnings are transferred from the original site to the new site that designated by the implementing body. Any losses of earnings incurred by an individual or business due to construction of new facilities are compensated by the implementing body. Cost incurred because of forced residential relocation are compensated by the implementing body.

The Replotting Plan includes the following:

• Design maps showing the area before and after the project
• Individual lot specifications (written)
• Applicable equity specifications per lot per right (written)
• Specifications for special purpose land such a reserve land.

The Replotting plan is displayed before the public for two weeks. During which, landowners are allowed to submit letters of opinion requesting alterations of the plan. Any alterations adopted by the implementing body are made available to the public for an additional two weeks. Final plan approval for Public Authority land pooling projects is the implementing agency. Final plan approval for Association or Corporation land pooling projects is the Prefectural Governor.

Removal of Buildings and Compensation

Building removal occurs in two ways, negotiated removal or direct execution removal. Negotiated removal occurs when the demolition of a building is successfully negotiated between the owner and the implementing body. Direct execution removal occurs when the implementing body demolishes a building without the consent of the owner. Direct execution may occur in the following cases:

• A landowner is not satisfied with the replot or the monetary compensation received and will not agree with removal;
• There is conflict among owners concerning land and buildings;
• The landowner cannot be located or is an absentee landlord residing away from the project site.

The bottom line is that a building owner can negotiate compensation for removal of their building with the implementing body, or the building will be removed by the implementing body without consent or compensation.

After necessary buildings have been removed, land planned for roads and parks are prepared and construction of public facilities begins.

Replotting Disposition and Reserve Lands

Replotting disposition is the manifestation and realization of the reploting design and plan. If the total value of sites after project implementation is greater than the total value of sites before, then reserve land is determined within the range of value added.
Reserve land is factored into the project plans. It is set aside for sale to finance the land pooling project. Reserve land is considered an improvement, and thus, reserve land value is lumped together with infrastructure and public facility improvement value. So when proportionate contributions are being calculated as a function of value, reserve land is factored in. Utility is a function of contribution, and contribution is a function of value; thus utility is a function of value. Increased value means increased utility.

**In summary, the land pooling process proceeds as follows:**

- **Study and surveys** to determine the current state of the project area.
- **Laying of Action Plan** which is derived from the Key Concept plan and includes basic policy and allocation of facilities (see Action Plan outline).
- **Replotting design** or the reallocation of land to landowners less contributed portions. Replotted lands should “correspond” or have relative balance in regards to location of original plot, soil condition, accessibility to water, land usage, and the environment. The amount of contribution is proportional to lot size. The value of contributed land should equate the value of utility gained by project improvements.
- **Designation of temporary (advanced) replotting disposition.** Some public facilities need to be moved before the final the disposition, so a temporary disposition is allowed to relocate necessary public facilities and services to make way for new project roads, parks, infrastructure, and other public facilities.
- **Demolition/Construction** is the permanent removal of old or unnecessary buildings, or the relocation of businesses. Removal can proceed by negotiated removal and compensation between the owner and the implementing body, or by direct execution without compensation by the implementing body. Improvements to roads and infrastructure or new roads and infrastructure are built during this part of the process.
- **Decision on the replotting designation** is where the public reviews the replotting design (plan) and may submit comments and request alterations of the plan. Then the final plan is approved by the appropriate body or individual.
- **Replotting disposition** is the manifestation of the replotting plan. New boundaries are drawn based on the plan and recorded into public record.
- **Registration** is the step where changes in land tenure or building ownership are recorded into public record. Registration is for changes that occur as a result of replotting disposition only. All other changes of record such as sale of land are not allowed until registration for replotting disposition changes is completed first.
- **Collection and payment of equity.** Contribution value should equate value gained in increased utility due to project improvements. For lots that gain utility value that exceeds contribution value, equity is collected by the appropriate government agency. For lots that do not gain sufficient utility value to equate contribution, equity is paid by the appropriate government agency.
Financing

One of the more difficult tasks of a land pooling project is covering the cost of the project, especially the initial implementation. There are many different ways in which an implementing body can raise funds.

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<th>Implementing body is a public authority</th>
<th>Implementing body is an association</th>
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<td>National subsidy</td>
<td>National subsidy with conditions</td>
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<td>Share of defrayment by public authorities</td>
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<td>Subsidy of public authority</td>
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<td>Public authority’s own expense</td>
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<td>Revenue from the disposition of reserve land</td>
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<td>Share defrayment of public facility management authorities</td>
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<td>Share defrayment of Japan National Railways</td>
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<td>Levy</td>
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<td>Others</td>
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Defrayment is the act of paying money. In this case, the defrayment amount is the total cost of the project minus subsidies.

The sale of reserve land is the main source of project financing, but may take years to accumulate. The initial costs are typically subsidies, defrayments, and loans.

Project Expenditures

Appropriate and authorized project expenditures take the form of:

- Construction and/or alteration of public facilities (parks, roads, plazas, and canals)
- Removal of old buildings and structures
- Removal of natural objects (stones and necessary vegetation)
- Removal or relocation of public utilities (water, sewage, electricity, gas) during temporary replotting
- Improvement of reserve lands for disaster prevention
- Construction or alteration of bridges and railroad crossings adjacent to the project area, within reason
- Compensation to landowners for damage to property as a result of studies or surveys
- Compensation to landowners for earnings lost because of replotted lands interrupted or halted business
- Equity paid to landowners whose contribution exceeds utility gained from improvements (e.g. landowner was asked to contribute more land than the calculated contribution rate)
• Partial or whole costs for the improvement of utilities necessitated by the implementation of the project are paid as “share defrayments” to respective authorities
• Cost of personnel, equipment, and supplies
• Interest paid on loans

Taxes

Land poolings are based on the premise that they are public projects for the collective public good. Taxation policies are aimed at the promotion and encouragement of projects considered “good” for the public.

Because of reploting, some landowners may acquire additional acreage. Therefore, no capital gains for real estate acquisition taxes are imposed upon landowners who gain acreage because of reploting. In ordinary land transactions that are not the result of a land pooling project, taxes are imposed or reduced appropriately.

Any compensation received as a result of building removal is tax deductible.

Land pooling projects take a long period of time. The time period expands as the project area expands. Project areas may be large enough to be broken into sub-project areas.