

Farmland Consolidation in Korea

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Key words: land consolidation, land readjustment, land reallocation, farmland arrangement

SUMMARY

Agricultural policy makers of Korea have made great efforts to maintain a certain level of annual rice production. They have devised several legislative measures. However, the net amount of the agricultural land and rural population is still decreasing. Korean efforts to secure food comprises two ways, farmland manipulation and farming technique improvement. The farmland manipulation means promotion of farming environment by changing the topography of land. It involves widening farm roads, equipping with better irrigation and land consolidation. The paper shows the procedures, instruments, legal and organisational framework, and proposed methodologies from the lessons of the unique Korean way of land consolidation.

1. Introduction

1.1 Socio-political background

Agricultural policy makers of Korea have made great efforts to maintain a certain level of annual rice production in order to guarantee food security. They have devised several legislative measures. A change permit of an agricultural land use to another is issued with a levy to raise a fund for providing arable lands elsewhere in compensation for the loss of cultivation area. People living in urban areas cannot buy a piece of arable land. Only farmers are allowed to buy it.

However, the net amount of the agricultural land and rural population has steadily decreased during last 2-3decades as shown in the table 1, and it will be accelerated in the next decade. From the beginning of 1970's, manufacturing had replaced agriculture as the top industry of Korea. Rapid industrialisation caused the concentration of urban population and hollow of rural villages. Farmers left their land to be factory labourers. The reasons why people leave rural regions are mainly the socio-economic gaps between the two areas in which the resident's way of life far

differs from each other such as job opportunity and income, cultural and educational environment, medical and housing support, and so on.

Table 1. Decrease in agricultural land and rural population (MAF, 2004)

Year	2003	2000	1995	1990	1985	1980
Agricultural land (km ²)	18,560	18,888	19,853	21,088	21,444	21,958
Rural Population (Million persons)	3.5	4.0	4.9	6.7	8.5	10.8

The rural population engaged in agriculture-related professions is currently less than 8% of total population. It was more than 55% in 1965 and 21% in 1985. In addition to the decrease of population, the manpower devoted to this field has drastically aged. The population ratio of over 65 years exceeded 17% of rural population last year. The aged residents of the rural areas are three times more than those living in the urban areas, which make the lack of labour in agriculture severer. Moreover, the rice paddies require intensive labour.

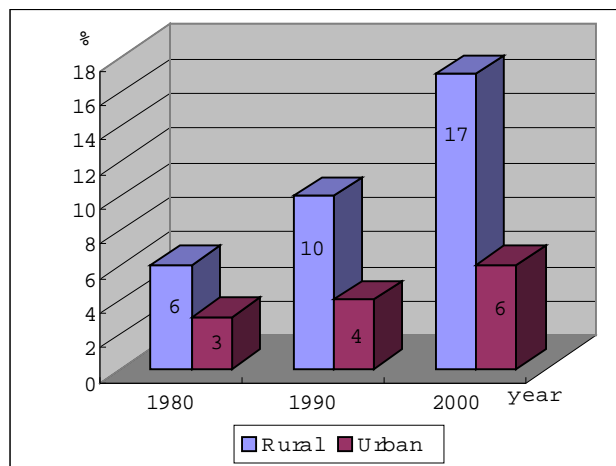


Figure 1. Population ratio over 65 years(NSO, 2004)

1.2 Historical background

The modern agricultural system was established by “Land Reform Program” in 1950 when agriculture was the primary industry in Korea. Most real farmers could possess their own land by the program which they had unfairly plundered by the colonial regime. The government propelling program aimed at realising social justice and facilitating the principle “land to the tiller”. The event resulted in larger parcels subdivided into smaller ones and provided to different rural households(Park, 1993).

In the middle of 1960's, the first land consolidation project had completed. It was a pilot project and several another ones continued. The pilot projects aimed at giving the basis of institutional and technical means which should be introduced before a real project began. However, the focus to yield more crops was on finding the instruments to cultivate wasteland by the "Farmland Improvement Project Act(1961)".

In 1970, the National Assembly passed "Rural Modernization Act". The act provided the legal background to the land consolidation projects. The act regulated the procedures of consolidation such as irrigation, drainage, road, reclamation of water body. Many projects have launched to encourage crop production and to promote the income of farm households. The act had been amended twelve times and abolished in 1995. However, the part of regulating land consolidation was succeeded by other agriculture encouraging laws.

Table 2. Number of farm households by farm scales (MAF, 2004)

year	No. of farm households by farm scales (million)		
	total	Less than 1.5 ha	More than 1.5 ha
1970	2.4	2.1	0.3
1980	2.2	1.8	0.4
1990	1.8	1.4	0.4
2000	1.4	1.0	0.4

2. Korean Land Consolidation

Korean efforts to secure food have been made in two ways, farmland manipulation and farming technique improvement. The farmland manipulation means promotion of farming environment by changing the topography of farmland. It involves widening paths and drainages, equipping with irrigation and farmland consolidaton whilst farming technique improvement implies the application of chemical, biological and mechanical knowledge to the farming such as better fertilizer, manure, raising skill and agricultural machinery.

2.1 Farmland Reform

A half century ago, most of farmland had been traditionally owned with a small number of landlords under the influence of feudal system. Farmers were tenantry without written or guaranteed tenant rights. Usual rents amounted to 50% of crops. Most tenants were economically and socially dominated by their landlords. The first democratic administration after World War II recognised the urgent resolution of distorted land system and launched the “Land Reform Program”. The important measures devised by the Land Reform Program to redistribute agricultural land were as follows(Kim, 1992):

- The government bought the farmland owned by non-farmers
- Maximum farm size was set at 3 ha, and any farmland in excess of the limit had to be sold to the government.
- Farmland sold to the government was distributed to small-scale farmers and former tenants who wished to continue farming.
- Farmers who received land from the government were to pay the land price within five years.
- The government was to compensate landlords for their farmland.

The new system limited the maximum size of each holding, and the institutionalized the principle of “land-to-the-tiller”. The maximum farm size of 3 ha is now being questioned by many policy makers and farmer's organizations, and has recently come under debate.

Anyhow, the project gave bad influence on cadastral parcels. Large parcels were to be subdivided for the distribution. The reform included over 8,000 km² as project coverage that equaled 40% of total agricultural land. The project accompanied many parcel mutations in a short period without appropriate manpower. A considerable number of the mutation cases was processed by the insufficiently trained surveyors, which caused problems and is influencing until today.

2.2 Government Policies

The main objective of government policy has focused on keeping the self-sufficiency of rice product(Zhou, 1997) but, as shown in table 1, agriculture became no longer attractive to the farmers since the industrialization was accelerated and the average income of urban labourer surpassed that of farmer in 1970's. Farmers migrated to cities and worked in towns for high

wages leaving the aged in agriculture.

Hence, the government confronted the alternative of abandoning the self-sufficiency of rice or keeping the policy by whatever costs. It chose the latter and developed a series of policies such as rice price support, farm credit and subsidies, technological research services, rice import protection. Although all those political measures, the rural population kept decreasing and aging while the average scale of farmland for a farm household increasing. Aged farmers should take the responsibility of cultivating larger farm and traditional farming needed to be reformed. Machine farming was required but the infrastructure could not support it. The rural society quite depended on human and animal power for farming then but knew the use of machinery could save labour, reduce costs and increase returns.

At first, the government wanted to upgrade the rural infrastructure, so kinds of agricultural machinery could be applied. In 1970, the National Assembly passed “Rural Modernization Act” and the administration started to propel land consolidation projects. The projects focused on widening farm transportation, arranging irrigation system, merging fragmented agricultural plots. Central government, municipalities and farm owners shared the project expenses. 80% of the money was covered by the governments and landowners paid the rest 20%. Banks lent 2/3 of farmers share with long-term-low-interest loans.

2.3 Farmland Consolidation

The agricultural land is classified into two categories in Korean context, rice paddy and upland. Rice is the only predominant grain and requires well arranged irrigation system. The total area of agricultural land is 18,888 km² and over 60 % is the rice paddy. Farmland has consolidated within the rice paddy area. The consolidated rice paddies occupy 6,289 km² out of 11,490 km² total paddy area. The case of upland consolidation is rare and not considered in this paper.

2.3.1 Procedures

The execution body of a land consolidation project can be legally municipal government, private person and a special legal person, Korea Agriculture and Rural Infrastructure Corp. (KARICO). KARICO is a public company who carries out kinds of rural improvement projects for the construction of infrastructure and the optimization of farming scale. It is a dominant body of executing farmland-related projects.

If there is a project application to a provincial government by an execution body, the governor assesses the application and then directs it to the Minister of Agriculture and Fishery with his/her assess results. The minister is the only body who can approve or return the application. After the application is approved, the applied body prepares basic and detailed plans. The plans should be publicly notified and the residents' opinions be heard. The opinions should be reflected and plans are modified by the feedback. After second notification and hearing, the plans are approved. The whole project area is replotted after Engineering works are done. Average period of a project lasts not more than 2~3 years.

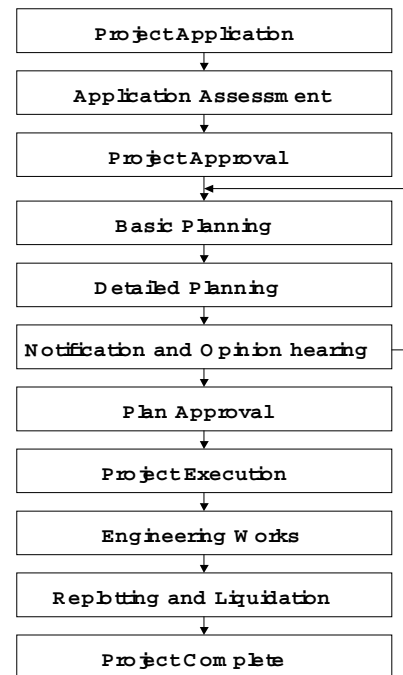


Figure 2. Procedural steps

2.3.2 Project Financing

Governments were much enthusiastic to drive consolidation projects while farmers were not on the contrary. Almost all consolidation projects were driven by governments, water boards and a government-invested company(KARICO). It means most project expenses were paid with government subsidies. Therefore, farmers' opinion and approval could be ignored to a degree and, at earlier stages, projects could be completed in a relatively short time without considerable disturbance and objection. The farmers' approval becomes the most important process today.

The government subsidy covers 80% of the total costs of engineering works. It costs 2,4 million US dollars per 1 km² by close estimation in 2000. Levels of governments donate public land – state, province and county owned land - included in the project area. The rest 20% of the cost is farmers' portion. Bank loans are guaranteed by the government endorsement.

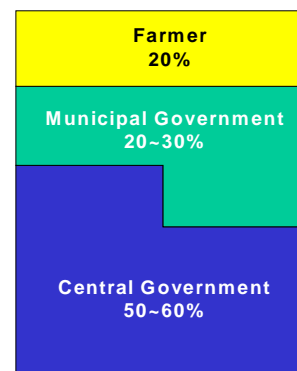


Figure 3. Financiers

2.4 Examples

Korean land consolidation means firstly, enlarging plot size, secondly, straightening curved paths, waterways and levees, lastly, consolidating fragmented plots. The order of priority is somewhat different from western countries. Anyhow, the three objectives tend to be achieved at the same time if a farming unit is small and a farmer possess less than several farming units.

Figure 3 shows the rice paddies with meandering paths and levees. It is not efficient to plant, fertilize or harvest rice with machines. Paths are not enough wide and straight for trucks and agricultural machinery. The levees are irregularly created to capture natural water flows. So, the levels in the same plot are nearly flat but the level of each paddy plot differs from those of adjacent plots, which makes machine farming difficult. The size of each plot also lowers the efficiency of machine farming. The first objective of Korean land consolidation is to make larger farming lots with straight paths and waterways.

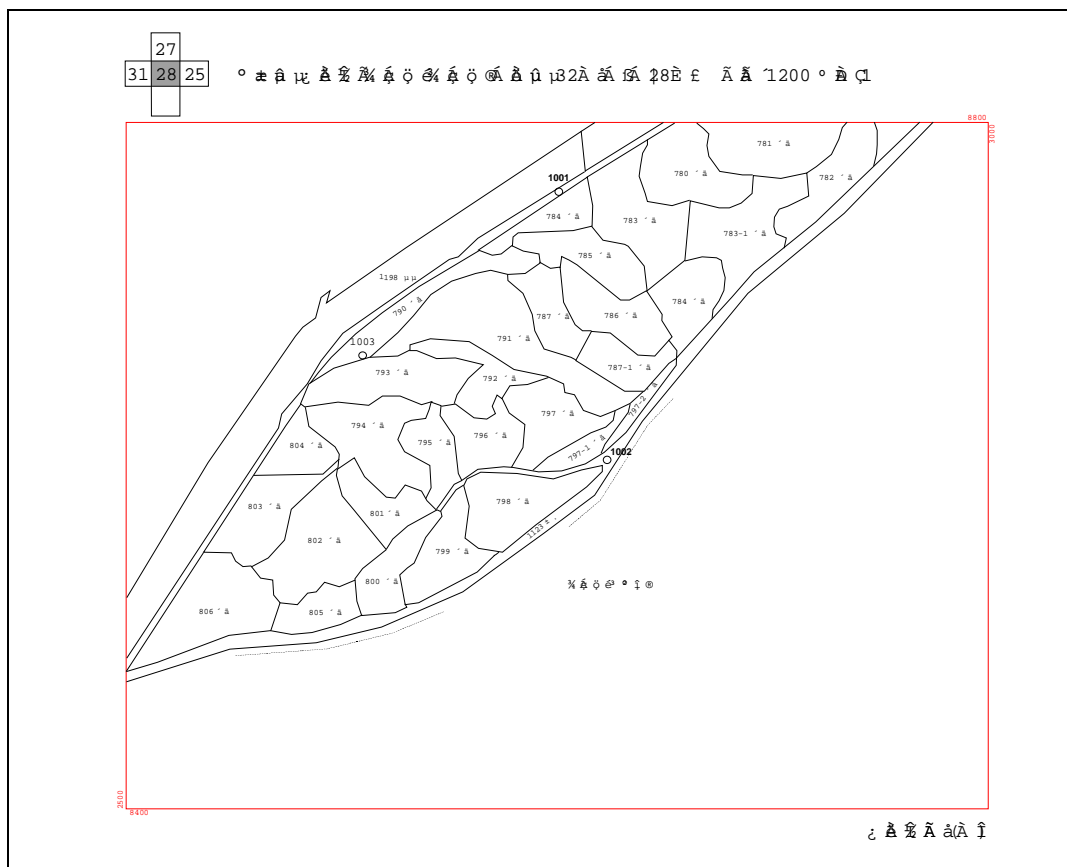


Figure 4. Typical rice paddies with irregular and curved paths and levees

It is impossible to imagine the old topography if the engineering work has done in a project area. New boundaries replace old ones. Farmers can get replotted land near where his farmland was but old topographic features have thoroughly gone (figure 4).

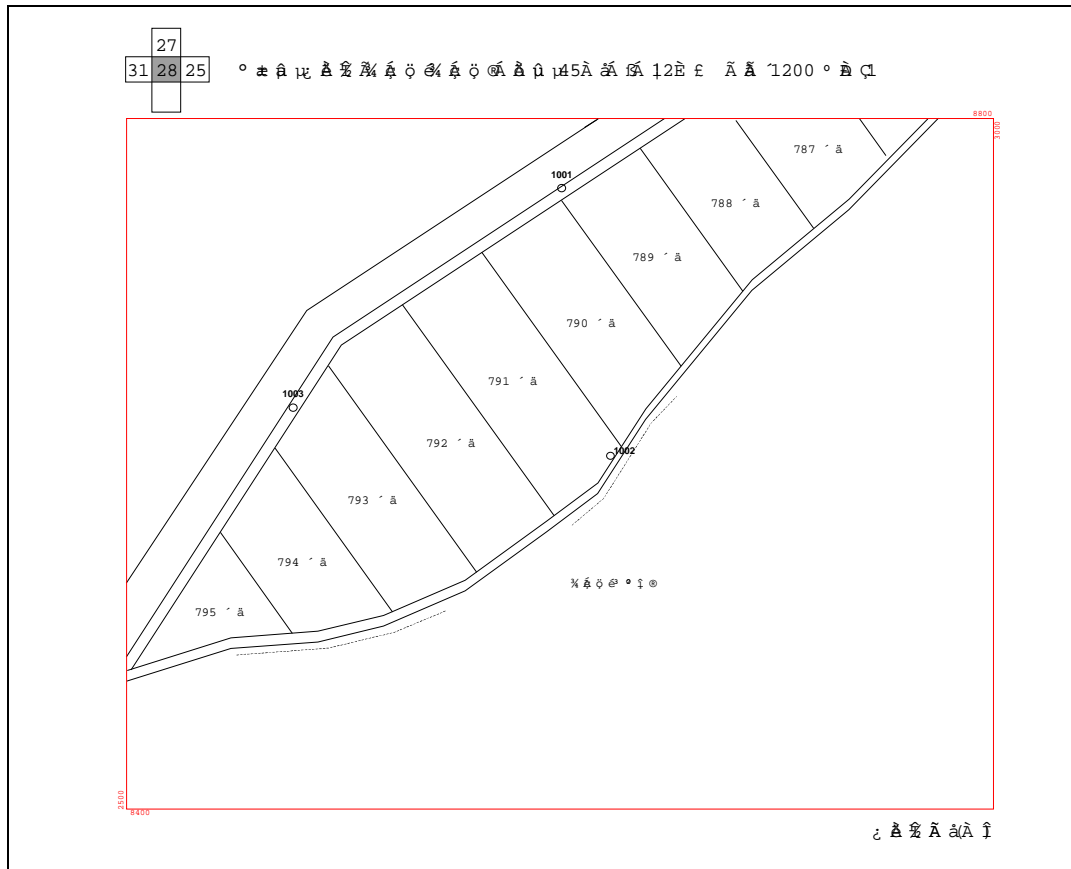


Figure 5. A cadastral map after land consolidation completed

3. Conclusion

The history of Korean farmland consolidation dates back to 1910's but after the National Assembly passed "Rural Modernization Act" in 1970, the administration started to propel land consolidation projects.

Korean land consolidation purposes enlargement of plot size, straightening of curved paths, waterways and levees, and consolidation of fragmented plots. The three objectives are achieved by a consolidation project at the same time if a farming unit is small and a farmer has a few units.

One of the main characteristics of Korean land consolidation is the short project term. It is usual for a project to take 1 year from planning to completion. The reason is farmers and governments know that farmland consolidation brings them mutual benefit;

- Y Government policy for food security and resulted sufficient government subsidy for the consolidation projects
- Y Farmer's needs of machine farming and resulted less labour - increased crop

Rice paddies have been consolidated for 35 years and 55% of paddy area has completed. The rests sporadically exist in the areas of higher slopes near the valleys or in between ridges. It means the areas have low benefit after consolidation. Thus, the strategy to approach these areas should be developed. The methodology for upland consolidation also needs to be researched. That will be the way to maximally use the arable land which is less than 20% of the Korean territory.

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