

# **Development of land consolidation in The Netherlands from project objective to project instrument**

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## **Historical summary**

Throughout the 20<sup>th</sup> century, land consolidation either on a voluntary or a legal basis, has been going on in The Netherlands. History also shows that consolidation was rarely an isolated activity, but was from the beginning connected with land reclamation and water management activities.

Only after the Second World War, land consolidation grew considerably in importance in The Netherlands and became particularly in the 60ties and early 70ties an instrument for farm restructuring and enlargement. Illustrative are the figures for the total area under implementation, which was only 36,000 ha at the end of 1945, while from 1960-1969 annually over 50,000 ha were taken on, which then decreased again in the 70ties to an average of 41,000 ha per year. Although after the war land consolidation was also applied in a few larger disaster areas (e.g. flood disaster 1953), the consolidation instrument usually concerns areas between 2,000 and 10,000 ha.

During the early years after the war, land consolidation, was also a labor-intensive activity to provide extra employment opportunities for the many unemployed, but as this problem was largely solved in the mid fifties, the state investments for consolidation works were critically analyzed on rate of return for the national economy.

This analysis resulted in 1958 in a multi-annual land consolidation and related works plan, in which a regional priority ranking was presented, whereby the investment impact ratio was one of the determining factors. State investments per ha for the decade to come were budgeted on Euro 900 – 1,100.

In terms of development of the agricultural sector in the corresponding period it is noted that from 1950 – 1974 the number of agricultural holdings (1 ha and more) decreased from 241,000 to 147,000, and the agricultural labor force diminished with over 60% (Greve, 1981).

In spite of the successes of land consolidation, already at the end of the sixties, doubts were expressed about the single sector emphasis of the instrument. Particularly the negative consequences for the traditional rural landscape types were a source of concern, although the attachment of a landscape plan to the land consolidation plan was already mandatory according to the land consolidation Act of 1954.

Therefore in the 70ties a period of reflection started, whereby new directions were discussed and explored for the land consolidation projects. The main focus was now on a

sensible balance between the interests of agriculture, landscape, nature conservation and recreation facilities in the planning and implementation of land consolidation/rural area development projects. These new developments led to two important national policy documents, one describing the relations between the relevant sectors in the rural areas (Relation memorandum) of 1975, and the “Structure Schedule for rural area development” (Ministry of Agriculture and Fisheries) of 1981.

Together with similar schedules for “Outdoor Recreation” and “Nature and Landscape Preservation”, the latter schedule forms the backbone for the rural area policy until 1990. Besides this joint policy was an important inspiration for the presently still valid Rural Area Development Act of 1985. This Act provided more room for a flexible implementation of land consolidation in solving spatial constraints, particularly also in urbanizing areas (see also Annex 1, with 17 project plans of 1993). The projects, initiated in the past decade are more often around cities (e.g. Amstelland, Noorderpark, IJsselmonde, de Venen, Haarlemmermeer).

Gradually the emphasis of land consolidation thus shifted from being a project objective to restructure agriculture into being an instrument to achieve more efficient multiple uses of the rural areas, which will lead again in 2003/2004 to a new Act, in which the scope likely will be rural development in a much wider sense.

### **Legal basis for consolidation**

Land consolidation in The Netherlands has been carried out from the beginning of the 20<sup>th</sup> century, and was legally supported by the first act in 1924.

The foundation of the Land Consolidation Service in 1935, was soon followed by the second land consolidation act of 1938, in which among others the decision making process on land consolidation was simplified. After the Second World War, land consolidation became an instrument for the structural improvement of the rural areas, in the beginning very much directed by the provision of labor opportunities and increase of agricultural production. This endeavor was perfectly worded in the Land Consolidation Act of 1954: “Land consolidation serves to promote the interests of agriculture and horticulture, forestry and animal production”.

Nevertheless the latter Act contained the important provision to withdraw land from agricultural production for non-agricultural general purposes, up to 5% of the project area. Noteworthy in this context is the relation between land consolidation projects and spatial planning. Only since the Spatial-planning Act of 1965, this relation was brought in practice. From that period onwards the provincial programs for land consolidation were brought in line with the adopted regional spatial plans.

An important factor of the 1954 Act is the voting system. The final land consolidation plan, which is compiled by a representation of the stakeholders in the project area (local land consolidation committee), will only be carried out if a majority vote can be obtained. A majority in this case is either a majority of the registered landowners and, since an amendment in 1977 also tenants, or a majority of land area, which the yes-voters own and/or use.

As earlier noted the decrease of the importance of higher agricultural productivity and the increase of the multi-disciplinary use of the rural areas in the 70ties required a new Act, which finally came about in 1985: The Rural Area (Land) Development Act. A main property of this Act is the choice it offers between different types of rural area

development instruments, depending on the character or pre-dominant destination of the area concerned. Still land consolidation according to the 1954 Act, including voting by landowners and/or tenants is possible. However, the more important instrument since 1985 is the so-called Land redevelopment project, whereby the agricultural stakeholders are one of the interested parties, and the provincial government has the final decision.

### **Institutional build-up**

The administrative responsibility for land consolidation was lodged for the larger part of the last century in the inter-ministerial Central Consolidation Committee (CCC/later CLC), founded in 1935 together with its executive land consolidation service (CD). Only during the last decade this responsibility shifted to regional (provincial) government, which also received shared control over the executive service, presently named “Dienst Landelijk Gebied” (DLG, Service for Rural Areas). The latter service played and still plays a vital role in implementing rural development policy. In the daily practice DLG is the manager of the process of land consolidation and rural development, through among others serving as secretary of the local development committees. In land consolidation, however, an important task is also assigned to the Dutch Cadastre. They actually design the new parceling structure. A third very important actor in the land consolidation process is the Foundation for Land Management (SBL/later BBL), established in 1946. This bureau has the task to acquire (buy) the land in planned and ongoing land consolidation projects, which is needed to lubricate the restructuring and to create the generally required new infrastructure (water, roads, landscape elements). During the last decades this task grew even in importance as large tracts of land are taken out of agricultural production for (re)-creation of nature reserves, recreation areas and ecological zones (EHS).

### **Impact of land consolidation**

In spite of the substantial investments (roughly estimated on 5 billion Euro in the last 50 years) and the large area (about 2.3 million ha, which equals presently all land in culture in The Netherlands) related to land consolidation, comprehensive impact assessment studies of this instrument are hard to find. Nevertheless it is save to say that the land consolidation efforts of the last 50 years have changed the face of agriculture and the Dutch landscape. In terms of agriculture there are now some 90,000 highly efficient agricultural holdings, from the over 300,000 directly after the War. They contribute still a substantial part of the Dutch export surplus, and related to the sector a wealth of knowledge, technology and expertise has been developed. On the other side of the balance sheet is the far-reaching environmental impact of the sector, which by an increasingly severe environmental policy is now in the process of being mitigated. The precise measurement of the effects of land consolidation is complicated by the uncertain estimate of the autonomous development. Still several methodologies have been developed over the years to execute ex-ante evaluations in order to prioritize the implementation of land consolidation projects.

As land consolidation is about re-parceling, obvious efficiency factors are average parcel size and number of parcels per farm before and after. In Annex 2 two tables are presented on this subject. In comparison with the substantial consolidation ratios in the project areas, the total effect on parcelation in the whole of The Netherlands seems relatively

small. According to statistical figures from the annual agricultural census the average number of parcels on farms larger than 5 ha decreased between 1955 and 1976 from 4.7 to 4.1. In the same period the farm size increased from 14.1 to 18.4 ha, and the average parcel size from 3 to 4.5 ha. (Oosterbaan, 1981).

The economic impact of land consolidation is for a large part depending on the follow-up investments of farmers, who benefit from a better farm structure. This investment drive again depends on the economic climate and particularly prospects.

During the period that land consolidation was carried out on a large scale in The Netherlands, the latter circumstances were rather favorable. The EU market was large and besides there were price guarantees for quite some products. An extra stimulant for farmers to invest was the Dutch Government farm investment subsidy system connected with land consolidation projects, which was certainly from 1950-1970 quite generous. Ex-ante calculations of expected internal rates of return for agricultural investments in land consolidation projects in the period 1970 – 2000, are in the range between 6 and 15 %. In a study on agricultural policy in The Netherlands (VD Brink, 1990), 42 projects between 1983 and 1989 yield a weighted internal rate of return of 9.0%.

In this context it should be noted that the cost of the public services, which are involved in land consolidation projects (notably DLG and Cadastre), are excluded from the investment picture.

### **Participation of stakeholders**

In the history of land consolidation, the local stakeholders had a large influence on initiation, planning and implementation of land consolidation projects.

In fact before the 1954 Act, the start of land consolidation in certain areas depended largely on a strong local organization of the stakeholders. Also the Act of 1954 institutionalized the foundation of local committees (LC), consisting of representatives of farmer organizations, water boards, municipalities and of other interest groups. Although since the beginning sixties the allocation of state funds for land consolidation has been made dependent on regional priority settings, the project areas could only be scheduled for plan preparation if a valid application by local stakeholders was received. When the project initiative was favorably decided upon by the provincial government, a LC would be carefully selected and installed.

These LC's were responsible for the planning, public hearings, voting and finally execution of the projects. They were professionally assisted by the Project engineer of the Land Consolidation Service and by a land-surveying engineer of the Cadastral Service. With the shift of emphasis from land consolidation to rural development, more parties became involved in the development of plans and gradually the voting system will probably disappear altogether, but in principle the size of local support is the determining factor for carrying on with the implementation of the projects.

### **Conclusions and relation to CEEC**

#### *Advantages and disadvantages of land consolidation*

So far the positive impacts of land consolidation in The Netherlands were:

- A much faster adjustment of agricultural structure to new technologies
- The presently resulting prosperous and efficient agricultural sector
- A strong economic development of rural areas

- Development of instrument in The Netherlands, which now serves multi-disciplinary goals

Lopsided use of the instrument of land consolidation in The Netherlands had the following negative impacts:

- Rapid decrease of nature and landscape values
- Overproduction at the cost of environment and bio-diversity
- Integration with deeper drainage caused gradual drying up of nature areas
- Large projects brought long implementation periods and high overhead costs.

#### *Pre-conditions and obstacles for land consolidation*

The introduction of large-scale land consolidation in The Netherlands had quite a few favorable pre-conditions:

- The increase of food production and productivity were important policy issues in the period after World War II.
- A powerful land consolidation Act was in place, which enabled intensive participation of stakeholders
- A Government subsidy system existed for farm investments in connection with land consolidation
- A group of strong-minded leading personalities in the agricultural sector were strongly in favor of land consolidation in the 60ties
- Dismally fragmented parcelation in the beginning years enabled to show spectacular improvements.
- The favorable economic climate in the 60ties was able to absorb the outflow of labor from the agricultural sector
- New land became available (polders) to make the necessary room in farm congested areas on the “old” land
- Development and Reconstruction fund was from 1963 available for farm termination. The share of the fund in farm termination between 1965 and 1975 is estimated on 20% (VD Brink, 1990).
- Strong and reliable government services (DLG, Cadastre) were established to guide the process.

At the same time one can distinguish some factors, which were hindering the process:

- Inflexibility of the Act of 1954 and the executive services
- Unbalance between planned projects and the available budget caused long implementation delays
- The latter long duration of projects sometimes led to outdated objectives
- Minor individual disagreements cause un-proportional long delays

#### *Comparability with CEEC*

Although generalization is not in order here, there are conditions of the agricultural structure in CEEC, comparable with the Dutch situation in the sixties, during which a strong consolidation drive occurred:

- Land fragmentation is rampant, although CEEC's often have quite a substantial sector of large-scale farms and co-operatives
- Larger market for increasing agricultural production is around the corner (EU accession)
- Economic growth is accelerating
- Large tracts of land are still in hands of the State or can be easily acquired
- Land prices are still reasonably low
- Availability of structural funds in 2-4 years

From these similarities and above pre-requisites one can derive the following recommendations for land consolidation in CEEC:

- Priority design of consistent rural development and agricultural sector strategy
- Development of workable Act to enable land consolidation
- Use of instrument in integration with other sector developments
- Promotion of use of the land consolidation instrument for a diversity of spatial constraints
- Start of the process should be demand driven
- Identification and implementation of some successful example pilots

**18 February 2002, Jack Damen**

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- Herinrichting Midden-Groningen 1998; Ontwerpplan Strategisch Groenproject

## ANNEX 1

### Project planning in the 90ties (magazine for land development 1994/34)

	Total Area	Agricultural Area (ha)		Nature, Recreation (ha)		Roads, buildings (ha)	
		Before	After	Before	After	Before	After
Administrative Land consolidation projects							
Beemster-Noord	3660	3445	3506	-	3	195	131
Beemster-Zuid	3380	3215	3210	-	-	165	170
Oud-Vossemeer	2584	2215	2128	-	86	369	370
Land consolidation projects							
Lutjegast-Doezem	2390	2070	1745	200	515	120	130
Rouveen	6000	5680	4756	90	988	230	256
Aardenburg	6040	5635	4935	120	820	285	285
Lage Maaskant	4375	4030	3878	90	216	255	281
De Hilver	8175	7080	6040	415	1275	680	860
Rural Area (Land) redevelopment projects							
Roden-Norg	13100	9380	7650	2620	4290	1100	1160
Noorderpark	5900	4000	3000	1800	2800	100	100
IJsselmonde	5160	4210	3350	250	1100	700	710
Bodegraven-Noord	2510	2395	1860	-	535	115	115
Abstoude	2485	2051	790	434	1695		
Ooypolder	5340	3430	2600	1740	2570	170	170
Ouddorp-West	1210	880	664	65	275	265	271
Mergelland-Oost	7800	5650	4690	1680	2510	470	600
Centraal Plateau	5700	4900	4552	450	730	350	418

## ANNEX 2

Executed land consolidations in 104 land consolidation projects, completed between 1967 and 1979.

Source: Oosterbaan 1981

	Nr. Of projects	Consolidated area (ha)	Number of parcels per farm		Average parcel size (ha)		Consolidation ratio
			Before	After	Before	After	
Arable regions	17	77,360	5.4	2.1	3.25	10.95	3.37
Meadow regions	28	116,020	3.2	1.8	5.24	14.16	2.70
Sandy soils	49	226,380	6.2	2.4	1.99	6.35	3.19
Horticulture	10	28,350	3.5	1.7	2.44	6.30	2.58
Total	104	448,110	5.2	2.2	2.62	8.09	3.09

Land consolidation / redevelopment project examples during the last 30 years

Projects	Grootslag	Beerta	Bommelerwaard-Z	Midden-Groningen
Year	1969	1973	1979	1998
Size	6115 ha	6170 ha	1978 ha	6360 ha
Project type	Consolidation	Consolidation	Consolidation	Strategic Ecol. Zoning
Type of agriculture	Horticulture	Arable farming	Dairy farming	Arable farming
Nr. farms before	1172	114	153	
Nr. farms after	520	95	112	
Nr. parcels before	4138	543	886	
Nr. parcels after	701	231	196	
Parcels/farm before	3.5	4.8	5.8	
Parcels/farm after	1.3	2.4	1.8	
Parcel size before	1.3 ha	10.1	1.8	
Parcel size after	5.6 ha	22.2	5.8	
Consolidation ratio	4.31	2.20	2.83	
Total cost (MEuro)	35.0	15.1	20.9	20.9
Consolidation cost (Meuro)	8.9	5.5	2.1	6.9