

## The Cottage in the Netherlands and its Possibilities.

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At the beginning of this paper I would like to say that I think the cottage is the only house suitable for happy home life for the Dutch people and that tenants should pay the full economic rents of their homes. The number to whom state assistance is given on the ground that they cannot afford to pay the economic rent of a satisfactory dwelling ought to be greatly restricted. An explanation of the first statement is hardly needed for those who are acquainted with the more prominent traits in the character of the Dutch people, their inherent love of freedom and their strong individualism. These traits may have their drawbacks. On the other hand they have the great advantage of preventing the individual getting so easily lost in the mass and the family being dissolved in the community.

A tenement dwelling, only accessible by a common street door and stair-case, never can be a home in the true sense of the word, even if the building comes up to the highest standards of construction, comfort and sanitary convenience. The flats one comes across in Amsterdam and Rotterdam, only accessible by means of common stair-cases for six or eight families are doubtless unwillingly accepted. No way has yet been found to prove from statistics the undoubted supremacy of the cottage from the health point of view. On the contrary, from the statistics available up till now it would appear as if the health conditions in the larger towns compare favourably with those in the country, but there are so many factors that are difficult to sort out that this may be due to quite other reasons. However, the advantage of cottages for home life are so self-evident that only unconquerable objections of an economic character can prevent us from building them.

About twenty five years ago it used to be an accepted fact that everybody had to pay the full economic rent of his dwelling. Many countries have not returned to this principle. Everywhere one looks in Europe, in some form or other housing is being supported by public funds. In the Netherlands also some groups insist on it being a sound principle to let dwellings at less than economic rents of genuine workmen.

For these people the factor of building-cost has been done away with. If a cottage costs more than a tenement the public exchequer simply has to supply the deficit. By stating the desirability of building cottages the question is decided.

I cannot agree with this principle. It is my opinion that grants from the public exchequer must be limited in normal times to a very small part of the population, for in the long run they do not benefit the tenant.

A housing policy based upon subsidising a large part of the population necessarily becomes a disaster for housing. For a time, perhaps, a number of families may be provided with a cheap dwelling but as soon as making grants on a large scale has become a system it automatically raises the cost of building materials, wages in the building trade and the cost of sites. Even the interest on mortgages may be influenced by it. As



soon as the increase has stabilised itself the beneficial effect of the grant will be entirely, or at least for the greater part, put out of effect and one has to face the same difficulties as before.

Moreover, an increase of building-cost is not limited to houses; it goes on to all other kinds of building and it should not be forgotten that an increase of the cost of industrial buildings will have serious consequences for commerce and industry.

Subsidising on a large scale as a permanent system must be considered fatal; it can only be accepted for a time, and then as a necessary evil. Those who advocate a system of grants as a necessary result of the increased building cost ought to remember that they are forming a vicious circle that increases costs and grants.

In our country housing was subsidised to an almost unlimited extent during the period of the most severe emergency. But when the difficulties obstructing building (the shortage of building materials and skilled labour) were to a certain extent overcome and the grants were being gradually ended building successfully developed. The gradual decrease of yearly grants undoubtedly brought down building costs. In my opinion costs had been stimulated by subsidies, for although with every reduction of subsidies the complaint came to me that building would be impossible, nevertheless soon afterwards the possibility of building appeared to have been created and house production went ahead.

In the course of 1923 building costs had decreased so far and building without grants had gone ahead so satisfactorily that subsidising could be ended without the regular production of houses being in danger. We expect, therefore, that in future the demand for dwellings for the working-classes will be supplied without financial assistance from the public exchequer, except for the limited number that cannot pay the rent even of the simplest dwelling. That this expectation is founded upon a solid basis appears from Table I and the diagram given. The annual need for new dwellings during the pre-war years was from 17,000 to 20,000.

Table I.

Built by	1921		1922		1923		1924		1925	
	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total	Number	% of Total
The State, Provinces, Railway Societies, etc. . .	636	1.5	130	0.3	94	0.2	107	0.2	41	0.1
Local authorities	5,687	14	6,808	15	5,449	12.8	3,574	7.8	4,059	8.6
Public utility societies . . . . .	19,298	48	13,622	30	9,590	22	8,669	18.5	8,538	18.1
Private persons . . . . .	14,743	36.5	24,936	55	27,999	65	34,290	73.5	34,553	73.2
Total number of dwellings . . . . .	40,364		45,496		43,132		46,640		47,191	

Table II shows the number of dwellings completed 1920-25, differentiating between assisted and unassisted by the public exchequer.

Table II.

Number of dwellings completed	Without assistance	With assistance	Totals
1920	4,000	18,000	22,000
1921	8,000	32,500	40,500
1922	4,500	41,000	45,500
1923	8,500	34,500	43,000
1924	22,000	24,500	46,500
1925	27,000	20,000	47,000



In 1925 building without subsidy had given us such a satisfactory condition of things that the supply of dwellings surpassed the yearly demand. I think, therefore, we can look forward with confidence to all future demands being supplied without state assistance. Having briefly stated my ideas on this subject I now will pass on to give the result of my investigations.

In the first place attention must be paid to the steady and rapid increase of population in relation to the supply of food. The Netherlands is among the most densely populated countries of Europe. Table III shows the increase of population during the last hundred years. It should be mentioned that, although the birth and death rates are both decreasing, the surplus of births over deaths remains fairly level per 1,000 inhabitants. (Table IV.)

Table III.

Date	Population	Yearly percentage of increase	Density of population (persons per square km.)
January 1 1830 .....	2,613,487		80.2
January 1 1840 .....	2,860,559	0.91	87.9
November 19 1849 .....	3,056,879	0.67	93.9
December 31 1859 .....	3,309,128	0.79	101.5
December 1 1869 .....	3,579,529	0.80	109.9
December 31 1879 .....	4,012,693	1.14	123
December 31 1889 .....	4,551,415	1.18	140
December 31 1899 .....	5,104,137	1.24	155
December 31 1909 .....	5,858,175	1.39	179.5
December 31 1920 .....	6,865,314	1.45	210.6
January 1 1922 .....	6,977,445	1.63	213.5
January 1 1923 .....	7,086,955	1.57	217
January 1 1924 .....	7,212,739	1.78	221
January 1 1925 .....	7,315,046	1.42	224.3
January 1 1926 .....	7,416,204	1.38	227.4

Table IV.

Period	Births per 1000 inhabitants	Deaths per 1000 inhabitants	Surplus per 1000 inhabitants
1870-1879 .....	36.8	24.5	12.3
1880-1889 .....	34.46	21.27	13.19
1890-1899 .....	32.7	18.67	14.03
1900-1909 .....	30.89	15.65	15.24
1910-1920 .....	27.09	13.3	13.79
1925 .....	24.1	9.6	14.5

Although a further decrease of the death rate may be expected there must be a limit. By the time this point has been reached the surplus is sure to diminish, even if there is no unfavourable change in hygienic and economic conditions, but simply as a consequence of the decrease in the absolute number of births. The Director of the Central Office of Statistics expects this event within some years and I, who am carefully following the figures regarding births and deaths, agree with him.

The Netherlands is no longer able to feed its population, at least it no longer produces the necessary quantity of corn and other articles of





food, the greater part of which has to be imported by sea. In normal times this makes no difficulty. In war-time, however, when oversea communications are difficult, it is of supreme importance that a people produces the greater part of its own food.

As is shown from Table V the total area of agricultural land amounted in 1903 to 2,120,876 hectares or 3,925 sq. m. per head of the population, and in 1924 to 2,244,845 hectares or 3,070 sq. m. per head, a decrease of 22 per cent. per head. The possibility of producing our own food has thus been considerably diminished. The increase of fertile land during this period has been obtained by reclaiming waste lands, which have been reduced by 24 per cent., and by reclaiming inundated land or alluvions, as for instance the *Zuider Zee*. When this important work has been finished the result will be about 200,000 hectares more of fertile land. As, however, these reclamations must come to an end we shall have to be economical with agricultural land.

Although I cannot explain it here at full length, this circumstance may not turn the scale in favour of the tenement. Firstly it has to be seen whether the growth of the population will not decrease as has been predicted above, and secondly it should not be overlooked that of the agricultural land which, alas, has to be withdrawn from cultivation, only a small part will be used for housing, the greater part being used for industrial purposes, public utility buildings, bridges, canals, highroads, parks, playgrounds, etc. As appears from Table V, during the period 1903 to 1924 about 1,050 hectares were taken up every year for railways, roads and premises. Only an additional 25 hectares a year would have been needed to supply with cottages all the families who occupied a new dwelling within that period.



Table V.  
Use of Land in the Netherlands.

	Hectares 1903	Hectares 1924
1. Arable land .....	859,325	891,118
2. Pasture-land .....	1,189,222	1,253,877
3. Gardening land .....	72,329	99,850
Total agricultural land....	2,120,876	2,244,845
4. Woods .....	253,926	250,229
5. Dikes and berms .....	20,274	23,196
6. Waste land .....	583,426	444,011
7. Marshes with reeds and rushes .....	9,883	12,096
8. Alluvions .....	24,395	24,013
9. Marshes, swamps, shores and water .....	89,304	97,489
10. Roads and railways .....	30,961	35,599
11. Properties not liable to taxation....	77,921	73,878
12. Premises, etc. ....	44,955	58,566
Totals....	3,255,921	3,267,912

The question whether for the larger part of our country the cottage is an economic possibility is, I am happy to say, no longer a problem but a settled fact. In most provinces the cottage preponderates to such an extent that only in a few municipalities can a number of houses containing even a single upperflat be found. The last figures on this subject are those of the dwelling census of November 1919. Table VI contains statistics of the types of dwellings. The cottage is in general use in Drenthe, Overijssel, Friesland, North-Brabant and Zeeland (more than 90 per cent.); it predominates in Gelderland, Groningen, Utrecht and Limburg (between 82.5 per cent. and 87.5 per cent.); and cottages are about one half of all dwellings in North-Holland (48.3 per cent.) and South-Holland (53 per cent.).



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Table VI.

## Dwelling census of

Province	One family houses		Lower maisonettes and ground floor flats		Upper maisonettes	
		%		%		%
North-Brabant . . . . .	128,406	93	4,618	3.35	3,696	2.68
Gelderland . . . . .	113,374	87.5	7,925	6.1	6,118	4.72
South-Holland . . . . .	187,600	53	58,084	16.65	35,403	10
North-Holland . . . . .	135,495	48.3	37,709	13.1	11,500	4.1
Zeeland . . . . .	52,933	91.5	2,366	4.1	2,200	3.8
Utrecht . . . . .	60,899	85.1	5,200	7.25	4,766	6.65
Friesland . . . . .	78,393	96	1,826	2	1,267	1.6
Overijssel . . . . .	67,100	96.6	1,175	1.7	1,000	1.45
Groningen . . . . .	65,890	87.5	4,669	6.2	4,074	5.4
Drenthe . . . . .	35,686	98.8	347	1	79	0.2
Limburg . . . . .	71,156	82.5	6,401	7.45	3,862	4.5
The whole country . . .	996,932	72.3	131,220	9.5	73,965	5.35

Table VII.

## Dwelling census of

Community	One family houses		Lower maisonettes and ground floor flats		Upper maisonettes	
		%		%		%
Amsterdam . . . . .	8,885	6.23	32,178	22.6	6,619	4.65
Rotterdam . . . . .	9,569	9	29,795	28.1	13,654	12.8
The Hague . . . . .	24,491	31.8	21,046	27.3	15,019	19.5
Utrecht . . . . .	19,201	65.8	4,806	16.5	4,501	15.4
Groningen . . . . .	9,664	51.3	4,468	23.7	3,953	21
Arnhem . . . . .	6,459	43	4,013	26.7	3,602	24
Nymegen . . . . .	6,702	52.2	2,705	21.1	2,062	16.1
Maastricht . . . . .	2,409	27.3	2,280	26	1,013	11.5
's-Hertogenbosch . . . .	2,401	32.9	2,203	30.1	1,541	21.1
Total . . . . .	89,781	21.5	103,494	24.7	51,964	12.4
Remainder of the country	907,151	94	27,726	2.8	22,001	2.3
The whole country . . .	996,932	72.3	131,220	9.5	73,965	5.35



November 1919.

Table VI.

Flats above Ground Floor								Total Dwellings
1st Floor		2nd Floor		3rd Floor		4th and 5th Floor, and dwellings in basements and attics		
1,005	0.75	149	—	2	—	54	—	137,930
1,930	1.49	407	—	19	—	23	—	129,796
36,362	10.3	32,389	9.15	2,274	0.65	331	—	353,343
33,882	12.1	33,615	11.65	24,954	8.65	3,652	1.25	280,807
271	0.47	52	—	4	—	38	—	57,864
590	0.8	84	—	4	—	3	—	71,546
117	0.15	2	—	—	—	8	—	81,613
103	0.15	13	—	—	—	6	—	69,397
608	0.8	120	—	—	—	75	—	75,436
4	—	—	—	—	—	—	—	36,116
3,169	3.7	1,381	1.6	69	—	114	—	86,152
78,041	5.65	68,212	4.95	27,326	2	4,304	0.3	1,380,000

November 1919.

Table VII.

Flats above Ground Floor										Total Dwellings
1st Floor		2nd Floor		3rd Floor		4th Floor		dwellings in basements and attics		
33,259	23.1	33,088	23.2	24,657	17.4	804	0.5	2,710	1.9	142,200
26,915	25.3	23,952	22.5	2,223	2.3	28	—	131	0.1	106,267
8,080	10.5	8,176	10.6	44	—	2	—	95	0.1	76,953
582	2	84	0.3	4	—	—	—	3	—	29,181
585	3.1	120	0.6	—	—	—	—	72	0.4	18,862
833	5.5	95	0.6	5	—	—	—	13	0.1	15,020
1,033	8	301	2.35	14	0.1	—	—	—	—	12,817
1,897	21.5	1,098	12.5	56	0.6	19	0.2	33	0.4	8,805
981	13.4	146	2	2	—	—	—	42	0.5	7,316
74,165	17.8	67,060	16.1	27,005	6.5	853	0.2	3,099	0.7	417,421
3,876	0.4	1,152	0.1	321	—	—	—	352	—	962,579
78,041	5.65	68,212	4.95	27,326	2	853	—	3,451	—	1,380,000



Table VII contains a separate summary of nine communities where the tenement is most plentiful. Among these nine communities there are three where cottages are one half or more of all dwellings. In Amsterdam and Rotterdam the proportion of cottages has been reduced below 10 per cent. and at the Hague, Maastricht, and s'Hertogenbosch to about 30 per cent. In the remainder of the country (98.5 per cent. of the area of the country with 71.5 per cent. of the population of the whole nation) cottages appear to be 94 per cent. of the total number of dwellings. For this part, the question of cottage or tenement need not be considered. There the economic possibility of the cottage may be accepted as an irrefutable fact.

The number of inhabitants per dwelling in Belgium in 1905 was 5.03, in England in 1911 was 5.05. In the Netherlands in 1899 it was 5.54, in 1909 it was 5.58 and in 1920 it was 5.75. No figures are available for after this date. Since the census of November 1919 about 250,000 dwellings have been built. What proportion of those dwellings are cottages is not known. In Amsterdam the proportion of flats in 1919 was 71.2 per cent. Of the dwellings built there since that year only 64.6 per cent. are flats. As during these years State assistance had put out of action the economic considerations that might lead to an increase of the number of flats we may suppose that all over the country the respective proportions of cottages and tenements since 1919 will certainly have changed in favour of the former.

Whatever may have been the cause in the past for substituting the cottage for the tenement the question at the moment is whether where the tenement has become the usual type such is an inevitable necessity, or whether it may be possible to get a predominance of cottages in future building. I am speaking here about cottages built in rows, not detached cottages. Certainly there will also be room in the large towns for detached cottages but these will only be ideal examples. Even without any further examination it can be stated that this method of building is too expensive and requires too large plots to be normal for future housing in those towns where the tenement is the usual type now.

Before entering into the question of the possibility of building cottages I want to say that, just as nearly everywhere in North West Europe and the United States in pre-war times, the workman has to pay a rent of one fifth to one seventh of his income, the middle-classes one sixth, the more well-to-do-classes one seventh to one tenth. For those people who cannot pay the rent of a most simple dwelling a yearly grant from the public exchequer is awarded to a maximum of 1 guilder a week. Those people whose income is not sufficient to pay the rent even then have to appeal to public charity.

As appears from the above the percentage of income that has to be reserved for house-rent increases with the decrease of the income itself. This may seem hard at first sight but it is the case.

I do not propose to make any connection between the economic possibility of the cottage and the incomes of the families belonging to different population groups of the Netherlands. For the restricted number for whom a grant from the public exchequer is given the tenement must be excluded because of the condition of such families. I merely put the question as to whether replacing the tenement by the cottage must necessarily lead to an increase of rents, and firstly confine myself to making



a comparison of building costs, foundations included so far as the danger of frost requires, but the cost of site excluded.

I have seen the plans of nearly all dwellings built in the Netherlands during the past six years, together with estimates of costs of erection and working expenses. Out of this large number I have taken some examples to allege reasons for a conclusion come to by experience. Moreover, for this paper I have taken from a number of communities examples of some cottages and various types of tenements that are being built regularly for the above groups of the population. For these dwellings I have had estimates of building costs drawn up, comparing the costs of a flat and a cottage with the same accommodation. I have compared these estimates with the actual costs of building by local authorities and public utility societies as well as by private enterprise. These comparisons have led me to the conclusion that the question of cottage or tenement is not a question of building cost.

The difference between the building cost of cottages and tenements is problematical. Within the same cubic measure and at the same cost a cottage may just as well be built as a tenement offering the same accommodation. In building the simplest dwellings the scale even turns in favour of the cottage.

Various estimates and tenders have appeared in publications from which it appears that an increase in the number of storeys leads to a decrease of the cost per dwelling.

The starting-point given is a dwelling with only a ground-floor, and its cost is compared with that of a building of the same superficial area but with one, two, three or more storeys. It appears from these estimates that the cost of the ground floor per cubic metre is highest, the cost of the first and second floors above it considerably lower, while the third and following floors increase the cost per dwelling, this in consequence of the high cost of carrying up building materials. From this the conclusion is drawn that (apart from the cost of the site) the cost per dwelling may be reduced by increasing the number of storeys.

This is a fallacy, for with the same superficial area as on the ground floor the greatest saving may be found in the first floor above because the same foundations, sewers, and roofing can be used. But we also profit by this in building cottages. Cottages consisting only of a ground-floor (bungalow type) are not usual in our country. They always consist, even the simplest, of two storeys, each storey having *half* the superficial area of a flat. Practically no difference of building cost exists between a cottage and a two storey tenement house. With a greater number of storeys the difference also is questionable, the cottage making it possible to have lower ceilings for the bedrooms upstairs and to finish off this floor in a simpler way. From the above the conclusion may be drawn that it is really the cost of the building site that is the most important factor but it will even appear that up to a certain limit this influence is still trifling. This limit is determined by the cost of the prepared site in connection with the cost of foundations.

The cost of a building site is the total of the different items of expenditure necessary for developing the land for building purposes. The principle items can be specified as the cost of undeveloped land, the cost of developing it for building purposes, the cost of treating the sub-soil and making the foundation. By developing for building purposes I mean here the laying out and making of roads, drains and sewers. The cost of



the latter increased during the war to about three times the pre-war standard but have come down again to the same level as building costs, about 60 per cent. more than 1914. The expenditure for development is a heavy burden. There is a tendency of late to make this burden still heavier. Formerly expenses for street repairs and maintenance were met out of the amounts reserved for that purpose in the yearly budget. Now there are local authorities who have taken to capitalising the estimated yearly cost of repairs and maintenance and charging this to the development costs of building sites. In some towns it has even become the custom to charge to this account the expenditure necessary for the construction of main roads, bridges, canals and for the acquisition of parks, playgrounds, in short for all public works in connection with the development of a new quarter. It stands to reason that these methods must cause the price of building plots to rise to excessive figures. Of course, it will often be difficult to draw the exact line between costs that ought to be charged and those that ought not, but I am of opinion that the costs of the above public works certainly ought not.

In the cases where land can be secured for a reasonable price, say for something like the agricultural value, and the nature of the sub-soil and the situation demand no excessive expenditure for development and foundations (i. e., in the greater part of the country), it ought to be possible to keep the price of the building plot down to the level necessary to make the erection of cottages an economic possibility.

Indeed this situation exists, the large towns excepted, nearly all over the country. A plot of about 100 sq. m.\* (in villages plots are often considerably larger), which may be considered as the average for a labourer's dwelling, costs 200 to 400 guilders\*\* in small communities and 400 to 600 in middle-sized communities, which implies rents respectively of 20 to 40 cents\*\*\* and 40 to 60 cents a week. Even if one is not convinced that piling up dwellings enhances the value of land it is evident that this accumulation cannot bring about a considerable saving of expenses, as it requires larger building sites, whilst the cost of road-making will increase, rather than decrease. The width of streets for tenements is greater than for cottages. For cottages the street surface need not surpass one half of the total surface of the building sites, while for tenements it is equal to it and the extra traffic requires road making of high quality.

Yet there are large communities where site-levelling is not difficult, no treatment of the sub-soil and no expensive foundations are required and nevertheless because of wrong ideas the habit of building tenements has developed. The situation is that the tenement has become the usual type and the price of land has adapted itself to it. In some communities it would not be possible to return to the cottage at once. But everywhere else the cottage surely may be introduced and maintained, although it is not to be overlooked that the value of agricultural land nearest the built-up part of a town is highest, so that perhaps only houses for the middle-classes may be built there, and dwellings for working-classes will have to be erected at a greater distance from the city. This may also be the case when a municipality has acquired such an area at a high price.

\*) 1 acre = 4,047 square metres. 100 plots of 100 square metres each = 1 hectare = 2.47 acres.

\*\*) 12 guilders = £ 1.

\*\*\*) 5 cents = 1 penny.



Where the price of land has risen far beyond agricultural value it will be possible to stipulate for building cottages only at a certain distance from the centre of the town, while in the nearer area we can only strive after a decrease in the number of flats per building.

The objection that in diminishing the number of flats the area of the town and the distances to the centre will increase does not hold. The extra cost of transport, sewerage-system and the supply of water, gas and electricity are, if perceptible, not of such importance that the benefits in view should be prevented by them. With regard to this I have the advice of reliable experts.

The density of building has only small influence upon the cost. Open spaces behind the houses are not at all expensive if the sites are to be obtained at not much more than agricultural value and raising the level is not costly. An extra garden space and with it an increase of the distance between the backs of the houses may often be obtained at 1 cent weekly rent per extra metre.

The question of cottage or tenement appears ultimately to be an important one only in a few large towns situated in a region where the sub-soil is such that the raising to building level, treatment of sub-soil, or making of foundations is necessarily expensive. Frequently it has been found that what seemed an apparently good building site has proved otherwise because before building a layer of peat, situated some metres below the surface has had to be removed.

We pass now to discussing the question in those municipalities, especially Amsterdam, where the difficulties with regard to this are greatest. The extraordinary conditions to be combatted there explain to a certain extent the building of tenements which have become the usual dwelling type. I do not intend to affirm it, but it might be argued that here we have passed to a period of greater height in building for sound reasons. Lack of knowledge in an earlier period regarding housing matters and the absence of rational housing by-laws have led to high building, and the peculiar local circumstances, particularly the marshiness of the sub-soil, which requires an expensive foundation, have powerfully assisted. Moreover, for centuries a system has been followed that consists of raising up the low level of the polder-lands with 3 to 4 metres of sand, which is the reason that even if land could be obtained at agricultural value the building sites would still cost 30 guilders per square metre, which could be reduced in building cottages requiring less land for streets to no lower than 20 guilders.

If it is not possible to give up this system, then the building of tenements must be accepted, though unwillingly.

Yet we see even in Amsterdam, where special local circumstances could excuse the contrary, that the local authority are striving earnestly to decrease the number of storeys and in some quarters of the town it has been diminished already from four to three above the ground floor. Beyond the Y, an old estuary dividing Amsterdam, no more than three floors are permitted, while in the outlying parts even cottages are being built.

In 1924 a new building by-law came into force which divides the whole territory of the municipality into zones according to building heights permitted and in such a way that the height decreases in an outward direction from three storeys above the ground floor to the cottage.



In this way it should be possible to keep down the price of land. If on the contrary regulations were made less severe by permitting a greater number of storeys than usual nowadays so as to diminish the cost of a building-site per dwelling it would be followed by such an increase in the cost of agricultural land that the saving would soon be lost.

The cost of raising the level, sewerage, paving, etc., indeed form at a certain time a constant amount; the price of agricultural land does not. This latter price is equal to the difference between the value of the site developed for building purposes and the above mentioned cost of raising the level, etc. Anyway, for expropriation in the large towns the value of the land is fixed by the judge in this way. The price of building sites varies according to the price of the houses to be erected and the rent expected therefrom in this sense, that a decrease of the total cost of erection is followed in the long run by an increase of the price of building sites. The tenant always has to pay the rent that can be obtained in fair competition.

Reducing the standard of dwelling by a more intensive development always results in the long run in having to put up with a less comfortable dwelling at the same price. This must, therefore, be opposed.

Communities should consider the possibility of building cottages that can be let at the same rents as dwellings in tenement houses, or at any rate whether the number of flats per house might be decreased without causing a considerable increase over the usual rents. If this should prove impossible under existing regulations one will have to investigate whether the possibility could be created by amending municipal regulations, for instance those with regard to the system of raising the levels of sites, the breadth of pavement, etc.

If after this the price still remained too high because of the cost of foundations, it would be proved that a decrease of the number of flats per building is excluded and the choice must be made between admitting tenements or allocating the sites for other purposes. Should such a decrease be in any way attainable in some quarters then at least for those the number of flats should be limited in the by-laws.

I have mentioned the Amsterdam by-law for zoning heights. In the memorandum on the by-law, however, I do not find that a serious investigation has taken place either about the consequences of the prescribed heights of building on the rents of the dwellings to be built, or with regard to the necessary measures which might have to be taken to prevent the dwellings being beyond the reach of the working-classes. It is even uncertain whether the present expensive system of filling up will be maintained for all zones. Without such an investigation as suggested zoning has no solid basis, for one might be permitting the height of building not needed by the circumstances, while on the other hand one might be restricting the maximum height to such a limit that the building of cottages for the working-classes would have to be excluded.

The investigation might take place together with the arranging of the lay-out plan. Nay, it is practically prescribed. Indeed a provision of the housing act stipulates that on the plan of extension must be indicated the use for which sites are destined and the species of dwellings to be erected, etc.

Of course, the different types of building cannot be kept apart absolutely. Aesthetic considerations will sometimes necessitate permitting a greater height of building around squares and along highways. This



matter can be regulated in detail in the by-law, which should contain special provisions for the various types of building, and in this way the provision can be relaxed for cottages.

With regard to regional planning it may be observed that much uncertainty is still existing in the Netherlands. Some people who favour regional planning strive after the decentralisation of the large towns. The ideas propagated in other countries regarding the founding of a ring of independent communities around a central town are already realised in our country. For instance, round Amsterdam lie in a more or less wide ring a number of little towns and villages with their own industries and consequently self-contained.

The urgency of regional planning is quite imperative for a rational improvement of our national and intercommunal system of roads, the reservation of open land and the allocation of land for different building uses. The latter involves consideration of where the erection of tenements cannot be avoided and where the building of cottages must be maintained or stimulated. This question should be dealt with on the same basis as I have suggested for the communal lay-out plan, although it might well be from a more far-seeing point of view.

The above creates an important task for State Housing Inspectors.

Indeed it is not to be expected that all municipalities will realise the urgency of rational regulations for zoning. Inspectors will have to make it their task to convince them and, if necessary, to point out how zoning should be effected. The Government ought to uphold inspectors with all the power at its means for this purpose. General building provisions might be fixed for the whole country, uniform as far as local conditions permit. They should be less severe for cottages as far as possible with good construction.

Building loans and subventions for slum clearances under the Housing Act ought to be restricted to those cases where cottages will be built unless the impossibility of doing so be clearly proved.

### Summary.

The cottage is the only dwelling suitable for happy home-life for the Dutch people.

Every tenant ought to pay the full economic rent of his house.

The number to whom state assistance is given on the grounds that they cannot afford to pay the rent of a satisfactory dwelling ought to be restricted.

Up to now the cottage has been the predominant type of dwelling in the Netherlands. The number of upper flats only amounts to 18 per cent. of the total number of dwellings (Table VI) and only in a few communities are flats predominating. At the present time in all communities there are a considerable number of cottages for the working classes in course of erection.

The question of cottage or tenement is an important one for but a limited number of towns.

This question is not one of building cost ; it is possible to build comfortable cottages at the price of flats of the same cubic capacity.

An increase of the number of storeys effects a considerable saving per dwelling only in respect of costs of undeveloped land and raising land to the level required for building. The saving with regard to the



former is but temporary, for this price is bound to rise until the rents have reached the paying capacity of the tenants.

The building of flats ought therefore to be confined to those communities where the costs of raising the level of the land and making foundations are so high that even if undeveloped land could be acquired at about the price of agricultural land the tenant would have to pay a larger proportion of his income for rent than in other communities.

Every community ought to consider in which parts of its territory it might be possible to erect cottages for the working classes (to be let at rents not considerably more than those of equivalent flats) and in which the building of flats has to be tolerated. The different zones should be determined in the communal lay-out plan. Similar investigations should take place in regional planning.

Building by-laws ought to contain different technical provisions for cottages and tenement houses; those for the former could be less severe.

The Government could help in this respect by fixing a series of uniform building provisions for the whole kingdom and by restricting building loans to cottages, unless the impossibility of building these be proved.

Where it is possible to build cottages it would appear that it is also possible to give a good deal of open space behind the house without an increase of rents worth mentioning.

It is my conviction that the building of upper flats can well be restricted with advantage to all concerned even in the largest towns.

### Sommaire.

En égard aux us-et coutumes du peuple Néerlandais, la maison pour un seul ménage est le mode d'habitation tout indiqué.

De quelque façon que l'on construise, tout le monde, même l'ouvrier sauf une exception pour un groupe limité d'insolvables doit payer le prix entier de son habitation, sans aucun subside des caisses publiques.

Jusqu'à présent, la maison pour un seul ménage est encore la plus répandue; le nombre des habitations à l'étage n'atteint guère que 18% du total des habitations (Table VI). Ce n'est que dans quelques communes que la maison pour plusieurs ménages prédomine; malgré cela on ne peut citer aucune commune où l'on ne continue à construire, même pour les ouvriers, des maisons pour un seul ménage.

Ce n'est pas une question de frais de construction; un plus grand nombre d'étages ne donne pas d'économie sur les frais de construction par habitation; au contraire, la maison pour un seul ménage coûte fort souvent moins que l'équivalent dans une maison pour plusieurs ménages.

L'augmentation du nombre des étages permet donc uniquement de réaliser une économie importante sur le coût du terrain à bâtir, par habitation, ainsi que sur les frais d'exhaussement.

Cette économie ne persiste d'ailleurs pas longtemps, parce que le prix du terrain tend à s'élever jusqu'à ce que le loyer des habitations ait atteint le maximum de ce que peuvent payer les occupants.

Il ne faut donc construire des maisons pour plusieurs ménages que dans les communes où les frais d'exhaussement du terrain et de fondation, par habitation, sont tellement élevés, qu'alors même que le terrain à bâtir pourrait être acquis au même prix que le terrain à cultiver, l'occupant devrait destiner au loyer une partie notablement plus grande de son revenu que dans les autres communes.



Dans chaque commune il faut étudier avec soin la question de savoir dans quelles parties du territoire il est possible de loger les ouvriers dans des maisons pour un seul ménage, sans que le loyer ne constitue une partie disproportionnée du salaire en comparaison de l'état de choses actuel ; on doit aussi examiner dans quelles parties les circonstances sont telles qu'il faut y permettre la construction de maisons pour plusieurs ménages. Les différentes zones doivent être tracées sur les plans d'extension régionaux et communaux.

Dans les règlements sur la construction des habitations les prescriptions d'ordre technique doivent différer selon le mode de construction, notamment être moins sévères pour les maisons destinées à un seul ménage.

L'État pourrait intervenir, en vue de stimuler la construction de ces maisons, en prenant de pareilles mesures pour tout le pays et en avançant du capital, conformément à la loi sur les habitations, exclusivement pour la construction de maisons pour un seul ménage, à moins qu'il ne soit péremptoirement démontré que cela est impossible, économiquement parlant.

Là où la construction des maisons pour un seul ménage est possible, on verra que le lotissement par vastes blocs de maisons ne donne lieu qu'à une très faible augmentation du loyer.

A notre avis il est en tout cas possible, même dans les grandes villes, de réduire encore notablement la proportion des habitants qui sont forcés d'occuper des étages.

#### Auszug.

Das Einfamilienhaus ist die dem Wesen des niederländischen Volkes angemessene Wohnung.

Welche Bauweise hier auch angewendet werden mag, stets muß jedermann, auch der Arbeiter — mit Ausnahme einer kleinen, zurückgebliebenen Gruppe — den vollen Preis für seine Wohnung bezahlen, ohne irgendwelchen Zuschuß aus den Kassen der Behörden zu erhalten.

Bis heute überwiegt das Einfamilienhaus noch in dem größten Teile des Reichs, die Wohnungen in den Oberschossen betragen nur 18 Prozent der Gesamtzahl (Tabelle VI). Nur in einigen Gemeinden herrscht das Mehrfamilienhaus vor, wiewohl es keine Gemeinde gibt, wo nicht, auch für Arbeiter, noch fortwährend Einfamilienhäuser gebaut würden.

Die Frage: Ein- oder Mehrfamilienhaus? ist demnach nur für eine beschränkte Anzahl Städte von Wichtigkeit.

Diese Frage ist keine Baukostenfrage. Vermehrung der Stockwerkszahl drückt die Baukosten pro Wohnung nicht herab; im Gegenteil, das Einfamilienhaus ist meistens billiger als eine gleichwertige Wohnung in einem Mehrfamilienhaus.

Die Vermehrung der Stockwerkszahl verbilligt nur die Kosten, die auf die Einzelwohnung bei der Beschaffung des Rohlandes und bei der Terrinauffüllung entfallen.

Diese Ersparnis wirkt jedoch nur kurze Zeit, weil der Preis des rohen Landes die Neigung hat, zu steigen, bis die Wohnungsmiete den höchsten Betrag, den die Bewohner aufbringen können, erreicht hat.

Zum Bau von Mehrfamilienhäusern darf man somit nur in den Gemeinden übergehen, wo die Erhöhungs- und Fundierungskosten so hoch sind, daß der Bewohner sogar dann, wenn man das Rohland zum Ackerwerte erstehen könnte, von seinem Einkommen einen beträchtlich größeren Teil als in anderen Gemeinden zu seiner Miete verwenden müßte.



In jeder Gemeinde ist gewissenhaft zu überlegen, in welchen Teilen ihres Gebietes die Möglichkeit vorliegt, die Arbeiter, ohne die Mieten auf einen übermäßig großen Teil des Lohnes zu steigern, in Einfamilienhäusern unterzubringen, und in welchen Teilen Umstände obwalten, die den Bau von Mehrfamilienhäusern notwendig machen. Die verschiedenen Zonen sind in den Bebauungsplänen der Gemeinde und in den regionalen Nutzungsplänen festzulegen.

In der Bauordnung seien die technischen Vorschriften für jede Bauweise verschieden; am mildesten für Einfamilienhäuser.

Der Staat kann in dieser Hinsicht anregend wirken, indem er derartige Bauvorschriften für das ganze Land feststellt und nur Baukapital auf Grund des Wohnungsgesetzes für den Bau von Einfamilienhäusern gewährt, sofern es sich nicht herausstellt, daß dieser auf ökonomischer Grundlage unmöglich ist.

Wo der Bau von Einfamilienhäusern möglich ist, wird sich zeigen, daß die Parzellierung bei Verwendung von geräumigen Baublöcken nur eine geringe Mieterhöhung hervorruft.

Ich halte es für möglich, auch in den größten Städten den Teil der Bevölkerung, der genötigt ist, eine Wohnung in den Obergeschossen eines Mehrfamilienhauses zu bewohnen, bedeutend einzuschränken.





food, the greater part of which has to be imported by sea. In normal times this makes no difficulty. In war-time, however, when oversea communications are difficult, it is of supreme importance that a people produces the greater part of its own food.

As is shown from Table V the total area of agricultural land amounted in 1903 to 2,120,876 hectares or 3,925 sq. m. per head of the population, and in 1924 to 2,244,845 hectares or 3,070 sq. m. per head, a decrease of 22 per cent. per head. The possibility of producing our own food has thus been considerably diminished. The increase of fertile land during this period has been obtained by reclaiming waste lands, which have been reduced by 24 per cent., and by reclaiming inundated land or alluvions, as for instance the *Zuider Zee*. When this important work has been finished the result will be about 200,000 hectares more of fertile land. As, however, these reclamations must come to an end we shall have to be economical with agricultural land.

Although I cannot explain it here at full length, this circumstance may not turn the scale in favour of the tenement. Firstly it has to be seen whether the growth of the population will not decrease as has been predicted above, and secondly it should not be overlooked that of the agricultural land which, alas, has to be withdrawn from cultivation, only a small part will be used for housing, the greater part being used for industrial purposes, public utility buildings, bridges, canals, highroads, parks, playgrounds, etc. As appears from Table V, during the period 1903 to 1924 about 1,050 hectares were taken up every year for railways, roads and premises. Only an additional 25 hectares a year would have been needed to supply with cottages all the families who occupied a new dwelling within that period.



Table V.  
Use of Land in the Netherlands.

	Hectares 1903	Hectares 1924
1. Arable land .....	859,325	891,118
2. Pasture-land .....	1,189,222	1,253,877
3. Gardening land .....	72,329	99,850
Total agricultural land....	2,120,876	2,244,845
4. Woods .....	253,926	250,229
5. Dikes and berms .....	20,274	23,196
6. Waste land .....	583,426	444,011
7. Marshes with reeds and rushes .....	9,883	12,096
8. Alluvions .....	24,395	24,013
9. Marshes, swamps, shores and water .....	89,304	97,489
10. Roads and railways .....	30,961	35,599
11. Properties not liable to taxation....	77,921	73,878
12. Premises, etc. ....	44,955	58,566
Totals....	3,255,921	3,267,912

The question whether for the larger part of our country the cottage is an economic possibility is, I am happy to say, no longer a problem but a settled fact. In most provinces the cottage preponderates to such an extent that only in a few municipalities can a number of houses containing even a single upperflat be found. The last figures on this subject are those of the dwelling census of November 1919. Table VI contains statistics of the types of dwellings. The cottage is in general use in Drenthe, Overijssel, Friesland, North-Brabant and Zeeland (more than 90 per cent.); it predominates in Gelderland, Groningen, Utrecht and Limburg (between 82.5 per cent. and 87.5 per cent.); and cottages are about one half of all dwellings in North-Holland (48.3 per cent.) and South-Holland (53 per cent.).



Algemeene Woning bouw Vereeniging Watergraafweg. (Arch. G. Ventoor.)



Table VI. Dwelling census of

Province	One family houses		Lower maisonettes and ground floor flats		Upper maisonettes	
		%		%		%
North-Brabant . . . . .	128,406	93	4,618	3.35	3,696	2.68
Gelderland . . . . .	113,374	87.5	7,925	6.1	6,118	4.72
South-Holland . . . . .	187,600	53	58,084	16.65	35,403	10
North-Holland . . . . .	135,495	48.3	37,709	13.1	11,500	4.1
Zeeland . . . . .	52,933	91.5	2,366	4.1	2,200	3.8
Utrecht . . . . .	60,899	85.1	5,200	7.25	4,766	6.65
Friesland . . . . .	78,393	96	1,826	2	1,267	1.6
Overijssel . . . . .	67,100	96.6	1,175	1.7	1,000	1.45
Groningen . . . . .	65,890	87.5	4,669	6.2	4,074	5.4
Drenthe . . . . .	35,686	98.8	347	1	79	0.2
Limburg . . . . .	71,156	82.5	6,401	7.45	3,862	4.5
The whole country . . .	996,932	72.3	131,220	9.5	73,965	5.35

Table VII. Dwelling census of

Community	One family houses		Lower maisonettes and ground floor flats		Upper maisonettes	
		%		%		%
Amsterdam . . . . .	8,885	6.23	32,178	22.6	6,619	4.65
Rotterdam . . . . .	9,569	9	29,795	28.1	13,654	12.8
The Hague . . . . .	24,491	31.8	21,046	27.3	15,019	19.5
Utrecht . . . . .	19,201	65.8	4,806	16.5	4,501	15.4
Groningen . . . . .	9,664	51.3	4,468	23.7	3,953	21
Arnhem . . . . .	6,459	43	4,013	26.7	3,602	24
Nymegen . . . . .	6,702	52.2	2,705	21.1	2,062	16.1
Maastricht . . . . .	2,409	27.3	2,280	26	1,013	11.5
's-Hertogenbosch . . . .	2,401	32.9	2,203	30.1	1,541	21.1
Total . . . . .	89,781	21.5	103,494	24.7	51,964	12.4
Remainder of the country	907,151	94	27,726	2.8	22,001	2.3
The whole country . . .	996,932	72.3	131,220	9.5	73,965	5.35



November 1919.

Table VI.

Flats above Ground Floor								Total Dwellings
1st Floor		2nd Floor		3rd Floor		4th and 5th Floor, and dwellings in basements and attics		
1,005	0.75	149	—	2	—	54	—	137,930
1,930	1.49	407	—	19	—	23	—	129,796
36,362	10.3	32,389	9.15	2,274	0.65	331	—	353,343
33,882	12.1	33,615	11.65	24,954	8.65	3,652	1.25	280,807
271	0.47	52	—	4	—	38	—	57,864
590	0.8	84	—	4	—	3	—	71,546
117	0.15	2	—	—	—	8	—	81,613
103	0.15	13	—	—	—	6	—	69,397
608	0.8	120	—	—	—	75	—	75,436
4	—	—	—	—	—	—	—	36,116
3,169	3.7	1,381	1.6	69	—	114	—	86,152
78,041	5.65	68,212	4.95	27,326	2	4,304	0.3	1,380,000

November 1919.

Table VII.

Flats above Ground Floor										Total Dwellings
1st Floor		2nd Floor		3rd Floor		4th Floor		dwellings in basements and attics		
33,259	23.1	33,088	23.2	24,657	17.4	804	0.5	2,710	1.9	142,200
26,915	25.3	23,952	22.5	2,223	2.3	28	—	131	0.1	106,267
8,080	10.5	8,176	10.6	44	—	2	—	95	0.1	76,953
582	2	84	0.3	4	—	—	—	3	—	29,181
585	3.1	120	0.6	—	—	—	—	72	0.4	18,862
833	5.5	95	0.6	5	—	—	—	13	0.1	15,020
1,033	8	301	2.35	14	0.1	—	—	—	—	12,817
1,897	21.5	1,098	12.5	56	0.6	19	0.2	33	0.4	8,805
981	13.4	146	2	2	—	—	—	42	0.5	7,316
74,165	17.8	67,060	16.1	27,005	6.5	853	0.2	3,099	0.7	417,421
3,876	0.4	1,152	0.1	321	—	—	—	352	—	962,579
78,041	5.65	68,212	4.95	27,326	2	853	—	3,451	—	1,380,000