

FINANCIAL ASPECTS OF LAND SETTLEMENT AS ILLUSTRATED BY THE EXPERIENCE OF SURINAM¹⁾

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1. INTRODUCTION

The subject of this paper on the financial aspects of land settlement in Surinam, can best be dealt with by making a distinction between the land reclamation and the establishment of the farms. The opening-up of land for issuing to small scale farmers is considered in the modern community as a task of the Government. Up till now the establishment of the farms has been the responsibility of the farmer himself.

This division of responsibility has a direct effect on the financing of the land settlement program. The costs of establishing new polders are mainly borne by the Government and the costs of the setting-up of the farm by the farmer.

In the setting-up of his farm the farmer is assisted by the Government with technical advice, credit service, etc. The costs of these services are borne by the Government.

In the following paragraphs it is endeavoured as much as possible to indicate this distinction by subdividing chapter 2 — the general introduction of the land settlement program, as well as chapter 3 — the financial aspects thereof, into three groups, viz the polder, the farm and the services rendered.

Finally it must be understood that this discussion concerns land settlement by independent small scale farmers. Other land settlement projects are also encountered in Surinam, such as the mechanized rice enterprise at Wageningen.

These settlement projects, the management form of which is more or less that of a business enterprise, are financed in an entirely different way and are not being dealt with in the following.

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2. THE LAND SETTLEMENT PROGRAM — GENERAL REMARKS

2.1 *Land settlement and agricultural policy*

Agriculture in Surinam differs in many respects from that of the islands in the Caribbean. Surinam has at its disposal large areas of fertile land which can be made suitable for farming. For example, the young coastal plain with its heavy, but fertile clay soils affords excellent opportunity for farming. Yet, only a very small part of this coastal plain (approximately 1.500.000 hectares) is under cultivation (approximately 44.000 hectares). The majority of the farms (totalling about 22.000) do not have more than 1 to 2 hectares in cultivation. The principal crop is rice, which gives the farmer a gross income of about Sf 300,— per hectare. The average gross farm-income from all farming enterprises (including plantations) was estimated at about Sf 800,— for 1957. The small size of the farm, its low income, and the great pressure of the population on the land cultivated on the one hand and the availability of enormous areas of fertile soils which are not yet cultivated on the other, have led to the consideration of a land settlement program for small scale farmers.

In the framework of the Ten Year Plan — the general development plan for Surinam — which was started in 1955 and two-thirds of which is being financed by Holland and one-third by Surinam, a relatively large amount was allocated for the land settlement: Sf 13,5 million of the total amount of Sf 29,3 million for the agrarian sector (Total budget of the Ten Year Plan: 117 million Surinam guilders).

The object of the land settlement program is to meet the growth of population in farming areas and to enlarge the farming enterprises. In this way two important objectives of the agricultural policy can be achieved: increasing of the agrarian production and improvement of the farmers income.

Calculations, based on the 1954 Agricultural Census, showed that at the end of the Ten Year Plan (1964) the shortage of farm land would amount to approximately 38.000 hectares. This calculation was based on a desired minimum farm size of four hectares, and an anticipated population increase of 300 farm-families per year. The land settlement program of the Ten Year Plan would meet 80% of this need for new farm land: 30.000 hectares would be reclaimed during this period, or an average of 3.000 hectares per year, this is 10% of the land cultivated in 1954.

Much time was involved in the necessary preparation of the carrying out of the Ten Year Plan. Only 4.000 hectares have been allotted during the past four years. The experience gained in the laying-out and settling of new polders, requires a review of the original program. This question is now studied by the "Advisory Board for the Reviewing of the Ten Year Plan."

2.2 *The establishment of the polder and public services*

The young coastal plain is considered especially suitable for land reclamation. The low elevation of these impervious clay soils and the heavy rainfall of Surinam (2.200 millimeters per year) make it necessary that before issuing the land, provisions should be made for water control. Land reclamation in Surinam means the laying-out of polders with good functioning drainage and irrigation systems. These systems depend on the desired size of the farms, the crops to be cultivated, the topography, etc. At the time the drainage and irrigation systems are constructed, the necessary roads, bicycle-paths and cart-

roads must be laid down. The plans for the polders are designed by the Bureau for Rural Development. The engineering of the polder works is done by the Government or private companies under contract and supervision of the Government.

To speed up the cultivation, attention must be given to the living conditions of the farm families. According to the size of the polder and distance to other living centers, new centers must be established including: schools, polyclinics, churches, stores, offices and houses for government personnel and the necessary attention must be given to water supply and electricity.

Until a short time ago, plots in the new polders in Surinam were allotted without making these necessary provisions. Experience has taught that in this way the time for bringing into cultivation is prolonged and thus the return on the government investments is decreased.

2.3 Selection, allotment and tenure

After the polder has been established, it is parcelled out to the settlers. Before the allotment, the applicants for a plot in the new polder are selected. This selection is based upon the need of the applicant for land and also on his farming experience, age, size of family, etc.

A right to use the new plots is given for a period of three years and for this "right of use" an amount of Sf 2,— per hectare must be paid. Thereafter the settlers rent the land for the price of Sf 10,— per hectare.

Starting from the third year, the settlers must further pay an amount of Sf 15,— per hectare for maintenance of the polder, that is to say, for the maintenance of the roads, dams, canals and the like. A same amount must be paid for the maintenance and operation of pumping installations.

The size of the farms issued in the new polders varies from 2 to 8 hectares, the average being approximately 4 hectares.

2.4 Farm planning and farm establishment

The land in the new polders is issued uncleared. However, the Government will take care of the construction of ditches and dams alongside the plots. This is done because experience has shown that to avoid delay in the development of the polder, it is necessary that the farmer must be able to control the water condition on his plot from the start and in that respect, must be independent of his neighbour. Fifty percent of the costs of the construction of dams and ditches along the plots is charged to the farmer.

In general the farmer is free to set up his farm as he desires. At the moment the plot is issued, he must accept the obligation to put the whole plot into cultivation within a certain period of time (mostly 3 to 4 years). If he does not comply with this condition, it is possible to cancel the agreement and to reissue the land. In his choice of crops the farmer is not entirely free. Generally a distinction is made between rice plots and plots for dry crops. The farmer is advised not to plant rice on plots intended for dry crops and vice versa.

A special working group, made up of representatives of the Department of Agriculture and the Bureau for Rural Development, has been established to design the general farm plans for a new polder. These farm plans are used as a guide when providing technical advice and credit to the settlers.

Such a farm plan takes into consideration the soil type of the farm, the

drainage and irrigation possibilities, the size of the farm, the labour capacity of the average family, and indicates at what pace and in what way the farms can best be set up, which crops must be cultivated, what credit is needed, etc.

2.5 *Project administration*

The special problems which occur during the establishment of a new agrarian community, made it necessary to create a separate organisation to guide and coordinate the services rendered by the Government in the new polders.

At the end of 1957 Project Administration was introduced as a division of the Department of Agriculture. During 1958 the majority of the recently established polders could be included in the program of this division. One project leader per polder was appointed, who is living on the spot and is in charge of the general guidance for the social economical development of the polder.

2.6 *Credit facilities*

The People's Credit Bank provides *normal credit* to farmers. Every farmer who has good guarantors available or who has sufficient collateral, can obtain a loan from the People's Credit Bank for most all needs. This Bank charges an interest of 9% per year.

The Ten Year Plan, which aims at an increase of the agrarian production and provides for a number of production increase investments (land reclamation, land improvement, storage and marketing facilities, research, extension, education, etc.), has also made provisions for the issuing of credit to farmers and fishermen. It is evident that as the Ten Year Plan is directed towards production increase, the funds destined for credit must be used in the first place for productive purposes.

Many applicants for *special* (productive) *credit* are farmers who do not have sufficient security. Therefore it is desirable that control should be exercised on the use of the monies. This is especially desirable because the programs for special credit are directed towards certain production increases and improvements on the farm. Control must be exercised during the execution of the program to accomplish these objectives.

In addition to the control on the use of the credit, it is desirable that the borrowers are advised about the best way to use the money. Technical and economical advice is necessary for the success of any special credit program. So-called "Credit agents" are responsible for this advice and control on the use of credit. These credit agents work under the recently established Agricultural Credit Division of the Department of Agriculture.

The most important program for special credit is the Supervised Credit Program for settlers in new polders. To reach the objectives of this program, credit is granted in small amounts according to the progress made on the farm. For this purpose an intensive control and administration of the money used is needed. Therefore one credit agent is designated for approximately 50 farms. As the issuing of credit is part of the total services rendered in the polder and the project leader is responsible for the guidance and coordination of these services, the credit agents in the polder are assigned to the project leader.

The farm plans made up for the various polders serve as a basis for this

Supervised Credit Program. In this way it is endeavoured to induce the farmers through credit to set up their farms in accordance with the plans. See also 3.3.

2.7 *The land settlement projects*

For a review of the situation at the end of June 1958 of the land settlement projects, reference is made to the attachment. Since that time, the Groot Henar polder has been allotted. The following polders are under project administration.

1	Groot Henar	2650 hectares, 430 farms
2	La Poule	258 hectares, 59 farms
3	Voorburg	127 hectares, 59 farms
4	Nieuw Meerzorg	280 hectares, 55 farms
5	Houttuin (to be issued shortly)	885 hectares, approx. 180 farms

3. FINANCIAL ASPECTS OF THE LAND SETTLEMENT PROGRAM

3.1 *Establishment of the polder and public services* (See attachment)

The costs of establishment of a polder vary greatly. These costs for the present land settlement projects averaged Sf 550.— per hectare. Herein is also included the costs for access facilities, such as roads, cartpaths, bicycle-paths, etc. Pump installations for drainage and irrigation cost an average of Sf 130.— per hectare and the construction of dams and ditches along the parcels Sf 225.— per hectare. The average investment of the government in the established polders totalled an amount of Sf 680.— per hectare.

It must be considered, however, that certain projects mentioned in the attachment, concern old plantations which could be put in order at little expense.

It is assumed in general that empoldering involves the following maximum costs :

Engineering	Sf 650.— per hectare
Pump-installation	Sf 150.— per hectare
Dams and ditches along parcels (including tiles)	Sf 300.— per hectare

Taking into consideration that 50% of the costs of the dams and ditches along the plots will be paid by the farmers, the Government investment will amount to approximately Sf 1.000.— per hectare empoldered land.

The costs for the maintenance of the polderworks and for the maintenance of the pumping installation amounts to Sf 30.— per hectare.

So far little experience has been gained with the costs for the establishment of living centers, public utilities, and other social provisions. It is assumed however that these provisions would cost the Government about Sf 250.— per hectare for polders with farms of approximately 4 hectares. The maintenance costs of these provisions are estimated at Sf 60.— per hectare per year.

3.2 *Establishment of the farm*

The costs of setting up new farms vary according to the type of farm. For the various polders, various farm types have been designed. Inasmuch as the program of project-administration and supervised credit did not start before

the end of 1957, insufficient experience has been obtained regarding the costs of setting up farms.

For this reason, the following is only partly based on figures derived from experience. In most farm plans, in addition to rice, perennial crops are included. The total investments in these farms can only be known after the perennial crops are in full production. The oldest project is La Poule. It would appear that the investments mentioned in the farm plan for this project are realistic. This plan concerns a 4-hectare farm with 2 hectares rice, $\frac{3}{4}$ hectare cocoa, and $\frac{3}{4}$ hectare coffee and $\frac{2}{4}$ hectare yard, garden and annual crops. This farm is similar to many others to be established. In all farm plans it is endeavoured to attain such a type of farming, where the farm can perform all items of work. During the clearing however, labour from outside will be needed.

The total costs of setting up (including labour costs for clearing and the credit needed for subsistence during the first year) were estimated in the farm plan at about Sf 2.100.— specified as follows:

Dwelling	Sf	500.—
Out-buildings	„	275.—
Cattle	„	175.—
Tools	„	70.—
Planting material	„	250.—
Clearing	„	590.—
Credit for living expenses	„	175.—
Total		<u>Sf 2.135.—</u>

During the carrying out of the La Poule project, it was found that the amount of Sf 500.— is not sufficient for the dwelling. A specially appointed committee for housing in the rural areas has concluded that a reasonable house cannot be built for an amount less than Sf 1.500.—. Furthermore the farmer should pay his share of the construction costs for dams and ditches along his plot (Sf 150.— per hectare). The farmer's investment for setting up such a farm will then be approximately Sf 3.750.— or Sf 940.— per hectare, compared to the Government's investment of Sf 1.000.— per hectare.

3.3 *Credit facilities*

If a farmer agrees with the lay out of the farm as indicated in the farm plan, he may be eligible for supervised credit.

With the help of the credit agent an application is completed, in which the plan of the individual farm is described.

This application form also shows the credit requirements of the farm during the years of establishment. In so called "liquidity surveys" it will be determined whether in a certain year the farmer will need credit or can make repayment. When determining these credit requirements, consideration is given to the following: the required time and labour for setting up the farm; the labour capacity of the family; the investments to be made; the assets and liabilities of the applicant at the time of application; the living expenses; and finally, the costs and revenues of the farm. Application is made for the total amount of credit required for the setting up of the farm according to the "liquidity surveys".

After the amount applied for has been approved by a special loan committee, the applicant can make use of this amount. However, this money is available only with the consent of the credit agent. This gives the credit agent the opportunity to exercise control on the use of the money.

At the end of November 1958, one year after the starting of the supervised credit program at La Poule, 41 of the 59 farms obtained special credit. A total of Sf 50.500.— was approved for these farms, which is approximately Sf 1.200.— per farm, while up to that time Sf 26.800.— had been used, which means an average of Sf 650.— per farm used for the following purposes :

Dwelling	Sf 121.—
Out-buildings	„ 4.—
Cattle	„ 5.—
Tools	„ 2.—
Planting material	„ 30.—
Clearing	„ 230.—
Subsistence	„ 143.—
Repayment of debts	„ 92.—
Miscellaneous (including sickness)	„ 26.—
Total	<u>Sf 653.—</u>

These amounts deviate greatly from what was shown in the farm plan as anticipated investments. Some farmers brought their own cattle, etc. from the old farm, others were assisted by their family with the clearing. The main reason for these deviations however, is that according to the plan, three years are involved in the complete setting up of the farms, which was therefore not yet completed at the end of November 1958. Furthermore, during the first year especially, there is a need for credit to pay old debts, for living costs, and clearing of the land. It also happens that farmers prefer to live in a camp instead of a dwelling the first year.

Interest

Special credit is granted at the rate of 7% per year of the unpaid balance. Of this, 2% returns to the Agricultural and Fishery Credit Fund to cover risks, 5% is paid to the People's Credit Bank for administration, which includes the making up of loan agreements, the collection, etc. The same rate of interest is charged for all purposes. The administration costs of these loans are high as the loan is advanced in small amounts.

Security

The security for these credits is, primarily, the farmer, and his ability to farm.

The collateral increases as the farm enterprise progresses. After the third year when the farmer receives a lease (rent), this right may be transferred to the Bank as security.

Terms and repayment

The repayment schedule is based on the anticipated net income of the individual farm. The minimum payment required in one year is not more

than half the value of the main crop. The capacity of the farm to make repayments is taken into consideration rather than the purpose of the credit. For the various farms the repayment period varies from 2 to 8 years.

3.4 *Costs of project administration, supervised credit and other Government services*

The actual costs of the project administration, supervised credit and other Government services in the new polders cannot be stated as yet.

The program was started at the end of 1957. In 1958 much time and extra costs were involved in securing and training of the necessary personnel for the carrying out of these programs. On basis of the little experience gained with the oldest project, La Poule, it may be assumed that the costs of project administration and supervised credit amount to Sf 150.— per year per 4-hectare farm.

On the average, 70 % of the total number of farms are using credit. If these costs are calculated back on the farms with credit, they amount to approximately Sf 200.— per farm. This is about 33 % of the amount outstanding at the end of November 1958.

Project administration and supervised credit will be continued up to the time the farms are in full production. It is assumed that this period will be 3 to 8 years depending on the type of the farm. If we take it that this period will be an average of 5 years for all projects, then the total costs for project administration and supervised credit will be Sf 750.— per farm.

The costs of the other services granted to the farms cannot be estimated. In any case they will be only a fraction of the above mentioned amount.

3.5 *Returns on the investments*

In general the idea in Surinam is that the costs (investments and maintenance costs) of public services (3.1) as well as the costs of the project administration and supervised credit (3.4) may not be charged to the farmer. The Government investments in polder works could be charged. In any case a partial breakdown is justifiable. These costs could be charged to the farmer entirely, or partly, by means of lease or sale of the land. Up to this time no such measure has been taken. As stated before, the land is rented to the farmers for the small amount of Sf 10.— per hectare (2.3).

The following calculation of returns on Government investments therefore has no practical significance for the land settlement program. The calculations of the returns from the amounts invested by the farmer himself are also theoretical. None of the farms under the new land settlement program is in full production.

In computing the returns the possibility of interest on investments by the Government during the time the farms are being brought into full production, is not considered. On the other hand it is assumed that the full amount of the investments is passed on to the farm.

This is not entirely reasonable if consideration is given to the increase of the national economy caused by these investments. Regarding the investments of the farmers, likewise no consideration is given to the repayment of the amounts loaned and the interest paid.

As indicated in the foregoing, the Government investments amount to

approximately Sf 4.000.— per 4-hectare farm, the investments of the farmer amount to Sf 3.750.— per farm. A 4-hectare farm in full production can produce Sf 2.000.— per year, if other crops than rice are included in the farm plan and prices remain unchanged. Such is shown by the calculations for the La Poule project. The operating costs of such a farm can be estimated at Sf 250.—, specified as follows:

Maintenance of polder and pumping installation (Sf 30.— per hectare)	Sf 120.—
Depreciation and maintenance of buildings (5 % of Sf 1.800.—)	„ 90.—
Seed and miscellaneous	„ 40.—
Total	<u>Sf 250.—</u>

In general, it is endeavoured to establish such farm types that no labour from outside is needed for the operation of the farm. The net income of the farm, amounting to Sf 1.750.— is therefore the return obtained by the farmer for his labour, management and for the capital invested. The prevailing wage for farm labourers amounts to approximately Sf 3.— per 8 hours day. The above mentioned farm requires 420 (8 hours) man days per year. Evaluated at Sf 3.— per day, the return for the labour of the farm family is determined at Sf 1.260.—. If the pay for management is not taken into account, the theoretical return on the invested capital is Sf 490.— per farm. The total investment in such a farm amounts to Sf 7.750.— (polder works Sf 4.000.— and setting up of the farm Sf 3.750.—).

The return on the investments mentioned calculated in this way, would be 6%. Admitting the possible inaccuracy of this calculation, because of the many assumptions and estimates, the conclusion can be drawn that the returns of the land settlement program are economically feasible for Government and farmer. The succes of this program depends however on the acceptance of these new types of farms and the introduction of crops other than rice.

In this connection it is interesting to observe that according to similar calculations, a rice farm of 6 hectares would provide a net income of only Sf 225.— per year of Sf 35.— per hectare. With an interest rate of 5% and an investment for setting up the farm of Sf 3.500.—, the Government could invest no more than Sf 150.— per hectare for the polder, and this is evidently impossible. Therefore, the Government is willing to bear the high costs of project administration and the supervised credit. Only a very intensive educational program carried on by technical advise and credit services will induce the Surinam farmer, who has for years planted nothing other than rice, to change to other types of farming for the benefit of himself and for the good of Surinam.

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Land settlement projects as of the end of June 1958.

Description	Nanti polder	Groot Henar polder	Kokos polder	La Poule	Tijgerkreek Oost	Uitkijk- polder	Polder Weg naar Zee	Houttun polder	Voorburg	Nieuw Meerzorg	Wolge- vallen	Mon- plastr	Total	%	%
Beginning of engineering	'49	'51	'54	'54	'57	'54	'53	'56	'52	'55	'54	'56	—	—	—
Year of allotment	'52/'54	—	—	'56	'57	'57	'56	—	'56	'57	'56	'57	—	—	—
Available farms	176	±430	±80	59	100	211	75	±180	59	55	88	48	1561	100	—
Farms allotted	176	—	—	59	47	211	50	—	58	28	88	47	764	49	100
Farms taken into use	176	—	—	49	40	133	46	—	58	10	88	42	642	41	84
Gross acreage	1460	2650	360	258	220	1500	330 ¹⁾	885	127	280	240	50	8360	—	—
Acreage cultivated	1264	2320	330	215	200	1266	300 ¹⁾	800	101	250	220	40	7309	100	—
Not yet cleared	146	2320	330	105	160	948	220 ¹⁾	800	29	239	143	24	5464	75	—
Cleared	1118	—	—	110	40	318	80	—	75	11	77	16	1845	25	100
Planted with rice	821	—	—	50	17	148	17	—	4	1	37	14	1109	15	60
Planted with other annual crops ..	6	—	—	2	6	—	—	—	21	2	7	—	44	1	3
Planted with semi-perennial crops ..	88	—	—	23	—	2	—	—	10	3	14	2	142	2	8
Planted with perennial crops ..	2	—	—	3	1	3	—	—	—	—	—	—	9	—	—
Total planted	917	—	—	78	24	153	17	—	35	6	58	16	1304	10	71
Fallow	201	—	—	32	16	165	63	—	40	5	19	—	541	7	29
Engineering costs per ha gross ..	730	710	530	700	150	275	405	490	630	450	560	500	550	—	—
Costs of pump installation per hectare gross	—	—	250	—	—	125	45	—	—	—	—	—	130	—	—
Costs of dams and ditches per hectare gross	—	230 ²⁾	180	—	—	—	—	—	—	—	—	—	225	—	—
Total costs per hectare gross ¹⁾ .	730	940 ²⁾	960	700	150	400 ³⁾	450	490	630	450	560	500	680	—	—
Total costs polder (× Sf 1000.—)	1065	2500	345	182	33	600 ³⁾	150	435	80	126	135	25	5676	—	—

1) Costs per hectare gross, excluding costs of living centers and social provisions, the costs of which can be estimated at Sf 250.— per hectare.

2) Groot Henarpolder, costs per hectare gross excluding costs of East-West communication (road).

3) Uitkijkpolder, costs excluding amounts expended before 1954.

4) Polder Weg naar Zee, acreage including the extension now under construction of 100 hectares.