

SOME NOTES ON THE AGRICULTURAL CREDIT SYSTEM IN MALAWI: CASE STUDY IN THE NTCHEU-RURAL-DEVELOPMENT-PROJECT*

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1. Introduction

The core of Malawi's development strategy is the National Rural Development Programme (NRDP), a regional development approach with an emphasis on agricultural production. For organizational purposes the whole country is divided into 8 Agricultural Development Divisions (ADDs), which are subdivided into 35 Rural Development Projects (RDPs). While the ADDs serve as management headquarters, the RDPs are responsible for the regional implementation of the development programmes.

Based on the assumption that the agricultural productivity and thus the incomes of the smallholders are constrained by a lack of know how and a lack of capital to adopt technological innovations, agricultural extension and credit services become instruments for raising smallholder incomes. Both services are organized as group approaches:

- Extension follows a modified Training and Visit System, and
- seasonal credit¹ is issued as group credit.

These services are offered by one field-level-officer² at the local level. He is supposed to work with extension groups (farmer clubs) and credit groups (credit clubs). While — per definitione — extension should be eligible only to farmer clubs, the latter should receive both credit and supporting extension. However, in reality the desired balance between extension and credit service is shifted towards the credit component.

Various authors (e.g. Schaefer-Kehnert, 1980; Von Pischke/Rouse, 1983) judge the credit component of the NRDP and highly successful with regard to the administrative and institutional side of the credit system (e.g. high repayment rate). The following paper attempts a broader analysis of the seasonal credit system in Malawi, qualifying the so-called «success story». For this purpose, a case study of Ntcheu Rural Development Project (Ntcheu RDP) is presented, based on project data and own research (during 1985/86) in the project area.

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1 Medium term credit, for example for oxcarts, is neglected here, because it is unimportant in the region (and in Malawi) in terms of the financial volume. This kind of credit is issued on individual basis.

2 Six to eight field-level-officers are supported by one subjectmatter specialist (credit assistant). The field-level-officer — smallholder-ratio is roughly 1: 800.

2. Seasonal Credit in the Ntcheu RDP

Ntcheu RDP, founded in 1978/79, is situated in the south-west of Malawi and extends over an area of 260,180 ha. It covers about 39,000 farm households, with an average holding size of 1.1 ha each, maize as the main crop and an average income of 200 MK³ p.a. (NTCHEU RDP data). Some basic data with regard to seasonal credit in the Ntcheu RDP are summarized in Table 1.

The two main characteristics of the seasonal credit scheme are group approach and credit in kind.

Table 1

SEASONAL CREDIT IN THE NTCHEU RDP (1978/79 - 1985/86)

Season	Credit ¹ (in MK)	Fertilizer (in mt)	Number of Borrowers	Cumulative Repayment (in %)	Percentage Share of Borrowers of the total Smallholders (in %)
1978/79	21948	123.50	— ²	100.00	— ²
1979/80	89073	460.60	1506	98.09	4.4
1980/81	92371	434.30	1421	93.16	4.1
1981/82	125241	610.05	1778	99.27	5.0
1982/83	174493	599.45	2728	98.70	7.5
1983/84	245545	694.50	3484	99.99	9.3
1984/85	365263	865.60	4259	89.84	11.1
1985/86	328787	635.10	2888	— ³	7.4

1) 75% of the total monetary value of credit is issued as fertilizer

2) No data available

3) Data not yet available

Source: Ministry of Agriculture, Ntcheu-RDP data

2.1 Group Approach

Seasonal smallholder credit is provided only on a group basis. The term group credit refers to the collective liability of the group. If one member of the group cannot repay his credit, the whole group is defaulted, i.e. no member of the group can obtain a new

3 1 MK (Malawi Kwacha) is equivalent to 0.53 US Dollars (December 1986).

loan in the next season as long as not each member has repaid his outstanding loan. The group liability has two main effects:

- a) It creates social pressure on the individual member to repay, and
- b) it ensures that only creditworthy smallholders participate in a credit group, because the group is formed by interested smallholders themselves. They have a strong interest that the group consists only of farmers who are able to pay back their loans.

These two effects explain the larger part of the high repayment rates in the past years (compare Table 1).

Additionally, the field-level-officers influence the repayment rates of the credit. On the one hand they direct the self-selecting process of the credit groups in a way that only creditworthy farmers join. On the other hand, if necessary, they try to force the borrowers to repay by selling some of their possessions (e.g. livestock).

Altogether there are about 100 credit groups with an average of 33 members (compare Table 2) in the Ntcheu RDP. The three-years-average (1983/84-1985/86) shows a women participation of 27% of all borrowers. This percentage corresponds well with the relative share of female-headed households in the Ntcheu RDP, i.e. the credit system in itself does not discriminate against women.⁴

2.2 Credit in Kind

The «credit-in-kind approach» is the other characteristic feature of the seasonal credit scheme. That means the smallholder gets the monetary equivalent of the agreed credit

Table 2
BORROWERS IN THE NTCHEU-RDP (1983/84 - 1985/86)

Season	Borrowers Total	Women	Relative Share of Women (%)	Credit- groups	Members per Group
1983/84	3409	839	24.6	99	34.3
1984/85	4259	1157	27.2	120	35.5
1985/86	2888	808	28.0	96	30.1

Source: Ministry of Agriculture, Ntcheu-RDP data

4 Compare Nankumba (1980, p. 63).

in form of seeds, fertilizer and pesticides and not in cash. This system attempts to make sure that the credit is solely used for productive agricultural investments. The credit packages vary according to the crops, the acreage and the package components (e.g. with or without seeds).

The credit packages are physically issued by the Agricultural Development and Marketing Corporation (ADMARC)⁵ with the support of the field-level-officers, but are financed by the Ntcheu RDP.

At the end of the agricultural production season, the credit has to be repaid in cash to the Ntcheu RDP with an interest rate of 10% p.a. The effective interest rate amounts to 13-14% p.a. because the repayment normally takes place already after 8-9 months.

3. Analysis

The outcome of a smallholder credit system can be evaluated on three different levels, that of the

- (a) smallholder,
- (b) Ntcheu RDP as credit institution, and
- (c) additional output in the Ntcheu RDP induced by credit.

(a) On the farm level, the main presupposition for a success is the profitability of the investment. The profitability of the investment financed through credit can be estimated by the following calculations for maize — the relevant crop in the Ntcheu RDP. Hybrid maize is grown only on a small percentage of the total maize acreage. But the highest share of the total credit in the Ntcheu RDP is allocated to hybrid maize.

It is assumed that the necessary inputs for hybrid maize (i.e. seeds, fertilizer, agrochemicals) are obtained by credit, whereas local maize is grown with own seeds and without fertilizer and agrochemicals. The profitability is now calculated (compare Table 3) by comparing the difference between the gross returns of the two crops and the additional costs of hybrid maize (compared to local maize without fertilizer). Roughly two thirds of the costs of hybrid maize can be attributed to the credit package and the remaining share is caused by higher labour and transportation costs.

5 The parastatal ADMARC supplies inputs (fertilizer, agrochemicals, seeds) in the project area. Smallholders can obtain inputs either by paying in cash or on credit. ADMARC is also responsible for buying most of the agricultural products of the smallholder sector.

Table 3

PROFITABILITY OF HYBRID MAIZE COMPARED WITH LOCAL MAIZE (1981/82 — 1985/86)

Season	Difference between Gross Returns of Hybrid and Local Maize (MK/ha)	Additional Costs of Hybrid Maize (MK/ha)	Rate of Return (%)
1981/82	238.86	147.69	61.7
1982/83	238.86	177.47	34.6
1983/84	262.73	187.63	40.0
1984/85	262.73	210.51	24.8
1985/86	262.73	243.67	8.0

Source: Own Calculations on the basis of Ministry of Agriculture data

Table 3 shows that the profitability measured by the rate of return for hybrid maize has declined considerably over the past years. The decreasing rate of return is caused by the rapidly increasing fertilizer prices⁶, which are the main determinant of the credit package costs. Projecting this trend into the future, credit for hybrid maize will become unprofitable. In the past five years, for which data are available, the rate of return never reached 100% p.a., a benchmark Schaefer-Kehnert (1986, p. 21) mentioned as necessary to overcome the aversion towards risk of the majority of smallholders. This seems to be a contributing factor to the low participation rate in the credit scheme, which never exceeded 11% of all smallholders (compare Table 1).

The profitability of hybrid maize is further threatened by problems concerning the timely supply of the inputs, which is not always guaranteed.

Generally there is another obvious disadvantage for the smallholder inherent in this credit approach: credit is only available in kind; i.e. it happens that farmers, temporarily without cash, (e.g. to pay hired labour) will sell their fertilizer acquired on credit to estates or other smallholders (often at a lower price).⁷

b) The Credit Institution

6 The rising fertilizer costs were caused by the increasing oil prices and the closure of the Nacala and Beira railway routes — the cheapest import and export routes of Malawi.

7 The other credit institution in rural areas is SEDOM (Small Scale Enterprises Development of Malawi), which gives credit solely for small scale enterprises and is biased towards relatively high loans (average loan: 2000 MK).

The viability and sustainability of every credit scheme is connected with the performance of the credit institution. On the one hand, the pure administrative system must be functioning, and on the other hand — in the long run — it should be financially self-sufficient (compare: US A.I.D., 1985, p. 36). The functioning of the credit administration can be judged by the credit recovery rates, which reflect especially the loan appraisal process and the general management techniques used.

Table 1 shows the credit recovery rates in the Ntcheu RDP. The cumulative⁸ repayment rates are always close to 100%. This is a success of the administration, especially if one considers the rapidly increased number of borrowers as well as the quantity of fertilizer on credit (compare Table 1), and the decrease of profitability (compare Table 3).

Besides a high repayment rate the long-run financial sustainability of the institution requires full cost recovery through an adequate interest rate.

The following cost components for the institution can be summarized:

- administrative expenses, which come to (on average) 30% of the total loan volume,
- writing off the defaults (compare Table 1),
- opportunity costs of the capital, and
- inflation compensation⁹.

To sum up, the interest rate of the credit — 10 per cent as mentioned earlier — does not even cover the erosion of the capital through inflation; the credit system is — c.p. — therefore not sustainable in the long run. Until now full cost recovery is not a problem in the existing credit system, as long as — especially the administrative costs — are borne by the Ntcheu RDP.

However, this means that the borrower obtains a subsidized credit¹⁰.

(c) To justify such a subsidy, it could be argued that the additional agricultural production in the RDP, achieved through credit, is higher than the costs of the subsidy. Table 1 shows the increase of credit participants and of the fertilizer, financed by credit, for the years 1978/79 to 1985/86. During the same time the relative share of smallholders participating hasn't exceeded the 11% threshold.

⁸ Non-cumulative (repayment after the credit season, i.e. in time), a repayment rate of roughly 90% is achieved.

⁹ Consumer price inflation rate in Malawi 1985: 15.1% (Malawi Government, 1986, p. 9).

¹⁰ Side effects of an interest rate subsidy — especially the income distribution effect favouring the richer farmers — are discussed by Heidhues (1986), Gonzales-Vega (1983) and others. This is therefore not further elaborated here.

The fertilizer consumption in the Ntcheu RDP between 1980/81 and 1985/86 is demonstrated in Table 4. No clear trend in the overall fertilizer consumption can be shown, but the data indicate — if at all — only a very limited increase. On project level, this can be interpreted as a substitution between fertilizer bought with cash and fertilizer obtained by credit.

This substitution has to be seen in connection with the limited supply of inputs — mainly fertilizer — in the project area.

Table 4

FERTILIZER ISSUED IN THE NTCHU RDP 1980/81 - 1985/86 (in mt)

Season	Quantity of Fertilizer			Percentage Share financed through credit
	Total	Credit	Cash	
1980/81	2357.55	434.30	1922.25	18.4
1981/82	3222.70	610.05	2612.65	18.9
1982/83	1057.19	599.45	457.74	56.7
1983/84	1774.52	694.50	1080.02	39.1
1984/85	2247.20	865.60	1381.60	38.5
1985/86	2814.70	635.10	2179.60	22.6

Source: Ministry of Agriculture, Ntcheu RDP data

Fertilizer is obtained by the smallholders either by paying in cash or on credit. If the overall fertilizer availability is limited, the question arises «who decides and according to which criteria the fertilizer is allocated to the two possible alternatives (cash or credit)». The answer given here, is that the staff of the Ntcheu RDP decides and not ADMARC or some kind of market mechanism. The RDP staff is interested in a high and increasing number of credit groups (and participants) with a good repayment record. This is the case, because on the one hand the job performance of the field staff and on the other the overall project performance of the RDP is — in practice — demonstrated and appraised by such easily verifiable indicators as «Issued Credit», «Number of Credit Groups and Participants» and «Repayment Rates».

So they ensure that first the smallholders, who obtain credit in kind, get the necessary inputs from ADMARC. What is left then is sold cash by ADMARC. That means, each smallholder, who wants to get at least some fertilizer every year, is better off, if he joins a credit group, even if he doesn't need credit (but only fertilizer or other inputs).

In times of an unreliable input supply — as it is the case in Malawi — joining a credit group becomes some kind of assurance.¹¹

This hypothesis is supported by the data in Table 4.

In 1982/83 the total quantity of fertilizer available was drastically reduced on account of problems, being not within the range of the Ntcheu RDP.¹² The adjustment to the lower quantity of fertilizer available was achieved mainly through the artificial reduction in cash sales in favour of credit in kind. Thus the relative share of fertilizer purchased for cash, decreased considerably. Economically this seems to be a suboptimal allocation of resources because credit is given, even if enough cash capital is available.

As another argument the variations between 1984/85 and 1985/86 are to be explained. After the relatively poor agricultural season 1984/85 the repayment rates dropped (compare Table 1). This of course means fewer credit groups (and credit) in the next season 1985/86¹³. The fertilizer quantity issued on credit dropped, but cash sales went up, which was only possible because more fertilizer was available (for cash purchase).

To summarize, it can be stated that there is nearly no additional production in the Ntcheu RDP induced by credit, i.e. it is very difficult to justify the interest rate subsidy.

4. Conclusions and Recommendations

The paper can be summarized with three concluding remarks: (1) The profitability of the main investment opportunity, hybrid maize, has decreased considerably over the past years. Of course, this is not a problem directly caused by the credit system, but the relatively inflexible credit-in-kind approach, with emphasis on hybrid maize permits only a limited adjustment of the smallholder to changing economic conditions (e.g. increasing fertilizer prices).

It seems, that the Ntcheu RDP administration didn't adjust sufficiently or couldn't adjust the credit packages to changed economic conditions. While the «didn't adjust» im-

11 Another argument for joining a credit group is, that the costs of credit (i.e. the interest rate) are very low, if not negative. If the smallholder calculates opportunity costs for his equity, then there might be an incentive to take a credit.

12 Malawi's import and export routes (to the harbours of Beira and Nacala) were interrupted, due to guerilla activities in Mozambique.

13 Compare page 16: If only one member of the credit group doesn't repay, the whole group is defaulted and no member can obtain a new credit in the next season.

plies some inefficiencies in the project administration and/or the higher administrative levels (e.g. ADD, Ministry of Agriculture), the «couldn't adjust» points to the more important problem of insufficient agricultural investment opportunities. Clearly, there is a need for agricultural research to restore and/or create higher return investment opportunities, which should be rewarding enough to overcome the risk-averse attitude of most smallholders.

(2) In line with the articles of Schaefer-Kehnert (1980) and Von Pischke/Rouse (1983) we argue, that the credit system is administratively successful, however in a narrower sense. One of the problems can be seen in the fact that the same field staff is responsible for credit and extension service. As their working performance is judged according to their credit activities, they — naturally — are biased towards credit (plus some extension) and not towards extension (without credit). The same bias in favour of credit services is found on the RDP level. The consequences are straight forward¹⁴: As the de facto project approach is shifted towards credit services, only the members of credit groups — the minority of all smallholders - participate in this «rural development».

Under these conditions it makes sense to separate the credit scheme from the Ntcheu RDP. Then the Ntcheu RDP staff would have time and resources to deal with these smallholders still non — creditworthy — the neglected majority¹⁵. Complementary objective should be to create a rural-banking-system. Based on the experiences of the existing credit scheme, it is argued to follow the group approach (compare: Mauri, 1983, p. 334). Compared with the group approach, the credit-in-kind component is of minor importance for achieving high repayment rates because — up to now — only the minority of progressive smallholders obtains credit. Thus a rural-banking-system should provide cash credit on a group basis.¹⁶

(3) Furthermore, the analysis of the credit system in the Ntcheu RDP showed three aspects of a misallocation of resources:

(a) Credit in kind has the inherent danger to direct resources into suboptimal in-

14 In addition, the personal identity between credit and extension service staff seems to be not an ideal approach for rural development. The same field-level-officer has to perform two incompatible roles: while extension needs the confidence of the smallholders, credit needs the repayment, even if it is achieved by pressure of the field-level-officer on the smallholder.

15 Benor et al. (1984 p. 24) argue that «extension personal should devote all their time exclusively to professional agricultural extension work».

16 Additionally a rural-banking-system offers the opportunity to mobilize rural savings.

vestments. This seems to be the case for hybrid maize nowadays.

- (b) Smallholders, who don't need credit, obtain credit because the credit in kind is an assurance against unreliable input supply.
- (c) The interest rate doesn't reflect the costs of the capital, and thus this subsidy is another incentive for credit use.

Cash credit as remedy for (a) and a rural-banking-system for (b) were already elaborated. Consequently, the last recommendation is to raise the interest rate to a market-oriented level. This means, under Malawian conditions at least 30% p.a.¹⁷.

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17 An interest rate of 30% corresponds to an increase of 15% - c.p. - of the costs of hybrid maize in 1985/86.

QUELQUES REMARQUES SUR LE SYSTÈME DE CRÉDIT AGRICOLE AU MALAWI: UN EXEMPLE TIRÉ DU PROJET NTCHOU DE DÉVELOPPEMENT RURAL.

RESUME

Le crédit agricole spécialement dans ses aspects saisonniers est un des facteurs les plus importants de la stratégie du développement rural du Malawi. Se basant sur l'expérience du projet Ntcheu RDP, cet article essaie de décrire et d'évaluer le système de crédit saisonnier. Ce système de crédit au Malawi a des caractéristiques bien précises, par exemple crédit en nature et approche par groupe.

L'analyse est effectuée à trois niveaux:

1°) la rentabilité pour l'exploitant de petite dimension, des investissements financés par le crédit se réfère au maïs hybride en le comparant avec le maïs d'origine locale (ne demandant pas de crédit). On a pu démontrer que la rentabilité du maïs hybride — et de cette façon la rentabilité du crédit — a diminuée de façon considérable ces dernières années.

2°) au niveau institutionnel on constate que le système de crédit a réussi, au sens strict du terme, du point de vue administratif (par exemple le taux de remboursement est considérable) mais n'a pas permis de rembourser toutes les dépenses.

3°) la production agricole supplémentaire due aux crédits dans l'expérience du projet Ntcheu RDP a été étudiée dans la troisième partie de l'analyse. Dans le cas du maïs aucune production supplémentaire n'est enregistrée.

Enfin, on a présenté trois mesures d'intervention: 1°) l'intensification de la recherche agronomique 2°) la création d'un système bancaire étendu aux zones rurales et enfin 3°) un ajustement des taux d'intérêt au niveau déterminé par les forces du marché.

