

# Financially independent primary health care drug supply system in Cameroun

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## Summary

The drug supply system in the North-west Province of Cameroun differs from 'simple' health financing projects in three important respects. Firstly, the system does not promote drug sales for cofinancing purposes but aims at supporting the prescribers to provide better medical care, and patients' access to the most essential drugs at fair prices. Secondly, the project guarantees equal prices and services throughout the Province regardless of distance from the central warehouse and sales at a given location. Thirdly, along with the revolving fund-financed drug supply system, a community-based legal framework has been established. Built-in management alert mechanisms helped the project resist common causes of collapse such as uneconomic behaviour and political interference. The drug supply system has gained full independence from subsidies and external authorities. Its strong community participation promotes good governance.

**keywords** Drug revolving fund, legal structure, management, affordability, equity, sustainability

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## Introduction

Since the late 1980s, after the launching of the Bamako Initiative (BI) in 1987 (Kanji 1989), the idea of drug revolving funds (DRF) started flourishing again. The World Bank (1994a) defines the term 'drug revolving fund' as community financing for the availability of essential drugs at full cost prices. DRFs may be constituted as public or private entities – nonprofit or profit-orientated.

Various papers have been published and many projects of establishing DRFs are known (Mills & Walker 1983; Velasques 1989; Foster 1991; McPake *et al.* 1993; Sauerborn *et al.* 1995). But difficulties have been encountered in establishing sustainability by improving security of capital (stocks and funds), in guaranteeing affordable drug prices, and in safeguarding responsibility of the actors concerned (MSH 1982; Patel 1986; Foster 1991; Waddington & Panza 1991; WHO 1991; Sauerborn *et al.* 1995; Huss 1996). The Pan-American Health Organization (PAHO 1988) published its experience with a fund for Central American countries based on substantial savings on purchase prices. Financial sustainability was soon threatened by delays in reimbursements from users. This is one striking example

showing that continuous financial losses are a serious risk for DRF. Any approach for a drug supply system which sustainably meets the needs of Primary Health Care (PHC) delivery has to take into account a multiplicity of risks. Figure 1 shows the most common problems which may result in the collapse of DRF.

The paper presents a DRF approach developed within the scope of a technical assistance project in the North-West Province of Cameroun jointly executed by the Camerounian Ministry of Health (MOH) and the GTZ (German Agency for Technical Co-operation). This approach demonstrates how security for the endangered structure of DRF can be given, and may serve as a prototype for other countries such as Mali (Brunet-Jailly *et al.* 1994), Sudan (von Massow 1995), Madagascar (Senant *et al.* 1997), and presently Malawi.

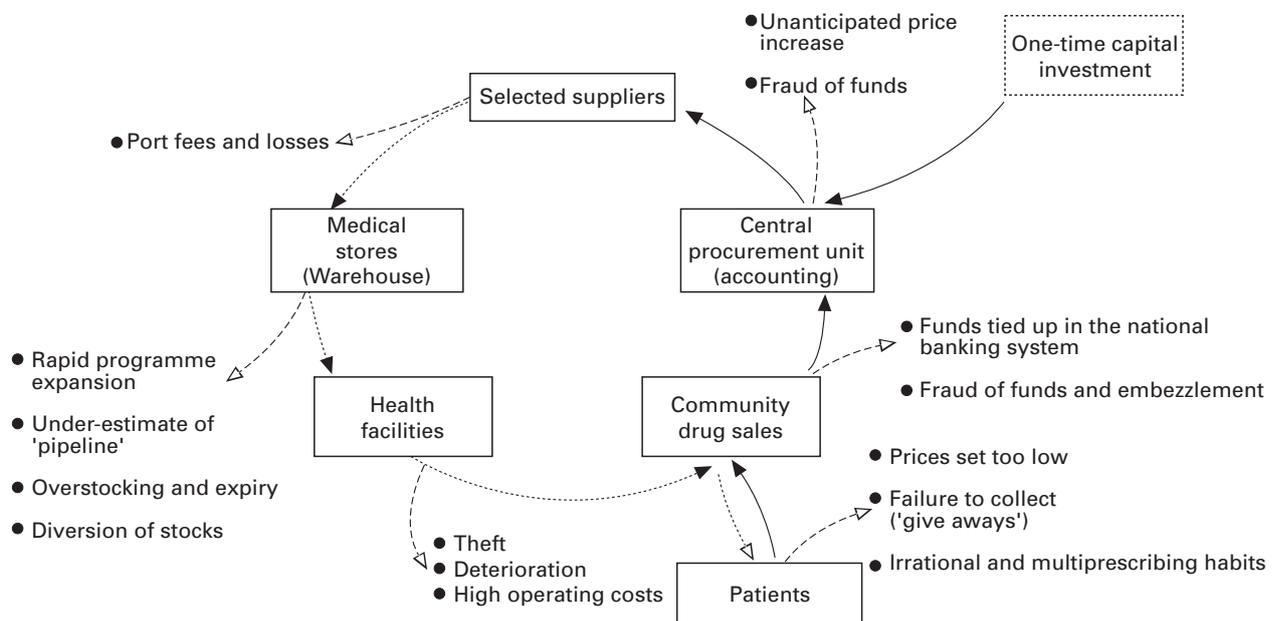
## Background

### The development of drug supply systems in Cameroun

In the late 1960s, the Camerounian drug market was composed of various systems. Private pharmacies licensed by the 1980 drug law are found only in major towns and in

## Key:

- .....▶ Flow of drug supplies
- ▶ Flow of funds
- ▶ Loss of available funds or drugs



**Figure 1** Common losses in DRF.

economically favoured urban areas. In rural areas there is only one pharmacy per 30 000–40 000 inhabitants. In addition, the establishment of patent medicine stores was tolerated. These are found wherever a profit can be made by selling low-price drugs. Apart from drugs smuggled from Nigeria, of which at least 40% are fake or substandard (Bol *et al.* 1989), patent medicine store owners also acquire drugs of doubtful quality (often expired or near expiry) illegally from local pharmaceutical wholesalers and from private pharmacies. For maximum profit this system often collaborates with medical doctors.

Free drugs were supplied by the national office for drug supply (ONAP) within the public health care system, but frequently diverted and sold illegally by government health personnel (Van der Geest 1982). ONAP went bankrupt in 1985. It was succeeded by the National Pharmaceutical Authority (ONAPHARM) with an injection of fresh capital and a more market-orientated constitution. A study investigating the prospects of sustainability (Got & von Massow 1992) forecast that ONAPHARM would run into serious financial problems. In June 1994 Onapharm was officially listed for liquidation by a presidential decree.

To provide consistently available drugs in rural areas, the Camerounian government created community pharmacies

(CPs) called *Propharmacies* in 1970. Operators of CPs were the councils, which were obliged to provide a building and capital for an initial stock. The CP attendants were seconded by the MOH and remained on its payroll. Another source of drugs for communities were church missions, which run drug dispensaries at their health units.

Flying hawkers completed the scenario. In distant rural areas in particular, illegal suppliers of cheap drugs provided the only supply; otherwise people had to rely on local transport to major villages or even to the provincial capital to purchase prescribed drugs at high prices in private pharmacies. In the Adamoua Province in Cameroun, Litvak & Bodart (1993) noted an average cost of drugs per prescription at US\$ 24.1 plus transport at US\$ 5.4.

#### Community pharmacies (CPs)

Pharmaceutical strategies often lack economic and management realism, resulting in serious shortcomings (De Ferranti 1985). The 1970 Propharmacy Law, for example, obliged the CPs to purchase drugs from Camerounian wholesalers or private pharmacies, and defined a mark-up of 10% on the relatively high net purchase price (also fixed by law) to cover procurement costs. However, the average

transport cost alone was about 15%. The incomplete cost calculation led not only to purchase of high price items, as this was the best way of ensuring a high mark-up, but also to constant internal loss using up the CP DRF capital. Poor supervision and failure to control unauthorized private use were also among the reasons why CPs' cash and drugs were embezzled with impunity.

These circumstances led the population to buy their drugs cheaply from illegal suppliers, and Van der Geest (1983) stated in his analysis that the drugs sold in Pro Pharmacies were more expensive than drugs sold in church institutions with a (relative) mark-up of 400%. This exemplifies the problems resulting from a standardized mark-up based on an incomplete economic analysis.

### The project area

The North-west Province (capital: Bamenda) borders on Nigeria. It has 1.3 million inhabitants, of whom more than one million live in rural areas. Asphalt roads connect the province to the main port of Douala and the capital Yaoundé. Within the province, traffic mainly relies on laterite or simple bush roads, although some regions can only be reached on foot. Moving supplies often involves considerable time, manpower and finance. In 1986, the NW Province had 62 CPs at health centres and hospitals and about 100 drug stores at village health posts (VHPs). Most CPs (59) were members of a joint provincial drug supply system established by a Canadian-sponsored project at the beginning of the 70 s. Some were run by the councils themselves. VHPs had their own provincial supply network, which was organized by the churches. The three systems differed in prices, drug items and professional status, and frequently did not meet the requirements of an essential drug policy.

### Materials and methods

#### Project goal

The project described here started in 1986 and did not try to solve problems outside the pharmaceutical sector. Nevertheless, every effort was made to minimize the negative impact of over-prescribing or social disparity. The overall goal was to establish a reliable supply of drugs with full area coverage and full cost recovery within the PHC system as a sustainable venture. The project was thus in line with the Camerounian interpretation of the Alma Ata declaration (accentuation by the MOH):

'Essential health care based on practical, scientifically sound, and socially acceptable methods and technology, made universally accessible to individuals and families in the community through their full

participation and at a cost ... [they] can afford' (BMZ 1991).

#### Project targets

The feasibility study was undertaken in 1985 (von Massow 1985), more than two years before the BI was launched. In view of the difficulties encountered in bringing affordable drugs to the rural areas (Mills & Walker 1983), the establishment of an improved, self-financed supply of drugs was proposed. The system was intended to sell essential drugs at cost prices. Effective interplay of all the following guiding principles (targets) was deemed essential for the establishment of a functional and sustainable drug supply system:

*Health.* The drug supply meets the medico-therapeutic requirements within the PHC delivery system. The rational use of essential drugs is promoted.

*Economics.* The DRF meets the demands of an economical and independent enterprise. It is used efficiently and maintained.

*Social equity.* The system takes into consideration the financial means of the users and assures a steady drug supply to the whole area.

*Legal status.* Community participation is assured by the constitution. The system is legally recognized and controlled by representatives of the population (beneficiaries).

#### Strategic approach

With time the project gradually created a reasonable balance of medico-therapeutic requirements vs. economic constraints; full cost recovery vs. socially acceptable, affordable prices; and economic independence vs. influence/control by the local community. Such balancing is considered more important than therapeutic perfection (Speight 1975). For economic and medical reasons, the drug supply system limited itself to local needs. The system provides about 65 drugs or medical items for rural hospitals and health centres and an additional 75 items for provincial, divisional and subdivisional hospitals. As a rule, VHPs are supplied with 10 items. The service is based on a demand-driven bottom-up approach rather than a top-down one with predetermined quantities such as drug ration kits (WHO 1991). Thus the project encourages prescribers to apply the principles of rational drug use.

#### Project design

##### *DRF management*

The project decided to depart radically from the traditional drug supply systems because of the typical shortcomings of central government drug supply systems and DRFs losing

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capital (e.g. PAHO's experience in Central America; Camerounian experience with ONAP/ONAPHARM). The hypothesis was that there are universal principles of management and economics applied by private wholesale enterprises all over the world. Pragmatically, the project adjusted the operational design to financial opportunities by implementing less sophisticated logistics and reduced need for complex planning – a condition re-iterated by the World Bank (1992). The reformed drug supply programme was expected to independently organize its own activities such as investments; uninterrupted drug purchases; continuous community contribution; supervision, audit and control; and in-house staff training.

*DRF structure and local capacity-building*

Community financing of drug schemes calls for adjusting and incorporating the administrative capacity of the community (Carrin 1987). Therefore, in addition to the criteria of an essential drug policy and a cost-orientated economic enterprise, the third structural essential was the establishment of a drug supply system as a community-based provincial wholesaler managed by users, professionals and public groups. Besides, the DRF capital had to be protected from the reach of the Ministry of Finance. In the early 1970s the capital of local agricultural sales co-operatives was brought under state ownership by directive in Cameroun. The status of a legalized foundation appeared to be advantageous as a guarantee of the participatory rights of users and as a method of protecting the DRF against third-party claims. A simpler structure is now proposed for Madagascar (Senant *et al.* 1997).

**Results****Financial situation at the beginning and donor input**

At the beginning of the project in 1986, the assets of the former Canadian-sponsored provincial DRF system in NW Province amounted to approximately US\$ 116 500. Ten years earlier the estimated capital had been US\$ 466 500. To ease the launching of the renewed programme, the donor input was in the form of drug seed stock (US\$ 366 500<sup>1</sup>); a central warehouse, adequately equipped (US\$ 256 700); transport facilities; consultancy from 1986 to 1989 (a long-term consultant (LTC) for transfer of economic and business

management know-how when and where needed and to develop staff training modules; some three months of short-term consultants (STC)); since 1990 up to one month of consultancy (STC) per year for review of progress and discussion of difficulties.

To ensure that the project's new conceptual framework became sustainable, the project worked with competent local staff only from the very beginning. This avoided systemic problems between 'expert' and 'counterpart' and created confidence in the staff's own competence and personal commitment. At the same time it counteracted phenomena such as low motivation and staff fluctuation, aspects which – previously often neglected – are now being broadly discussed (Berg 1992).

In 1990, when after four and a half years bilateral technical assistance to the pharmaceutical programme came to an end, the German contribution to the drug component had totalled US\$ 1.85 million (= 2 US\$ *per capita* of the rural population).

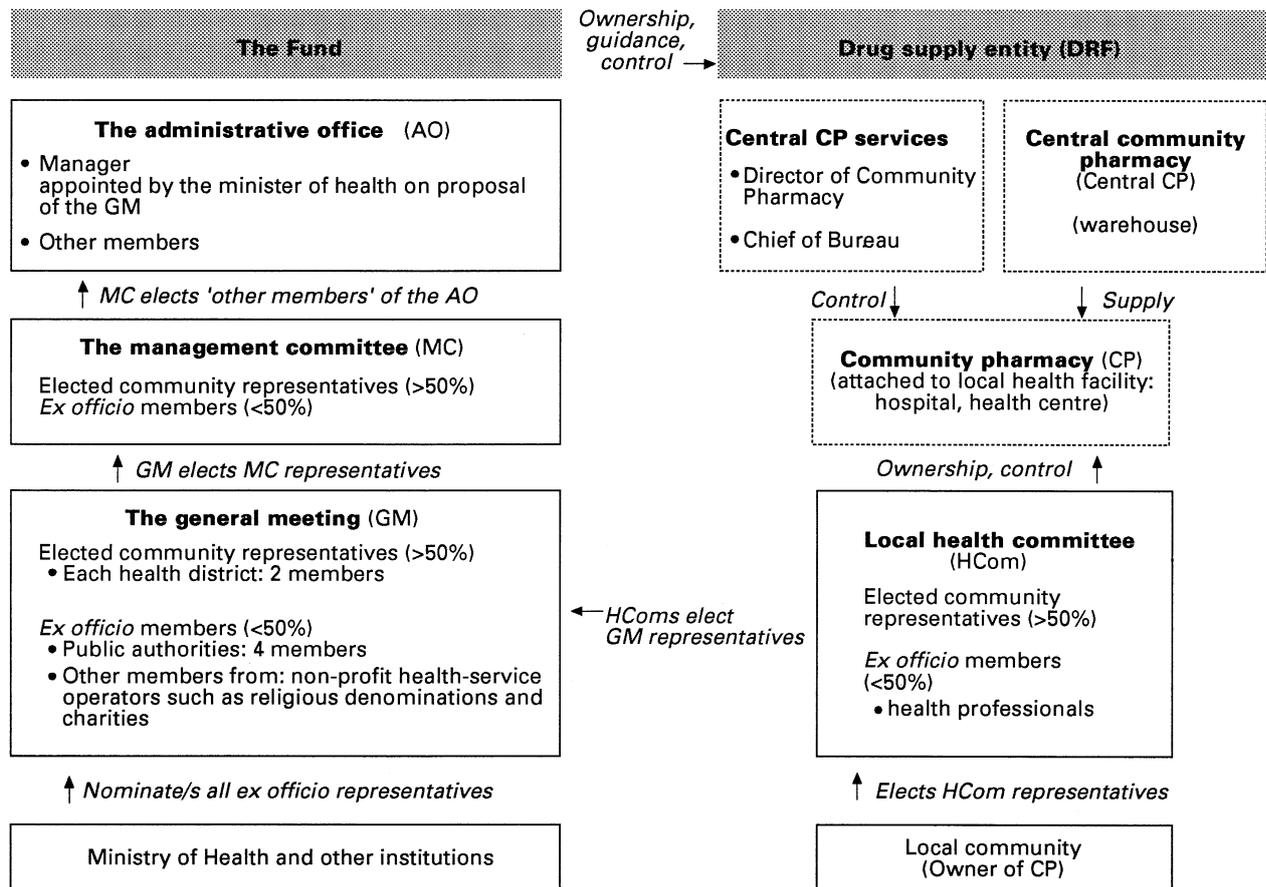
**Capacity-building**

Funding agencies strongly advocate local capacity-building (Buyck 1991; Jaycox 1993). This requires intensive communication between government, donors and communities (Bennet 1989). With respect to sustainability, the project concentrated on staff competence, efficient procedures and organizational structure. Community participation was promoted through local Health Committees (HCom), whose ownership rights and duties were assured by selection and employment of the CP attendant; local financial management and control; participation in supervision; educating the population on the need for quality drugs and their rational use including patient compliance and representation at the General Meeting (after the creation of a legal structure for a provincial drug supply system; see below).

For the project the legal framework of a foundation, i.e. a 'health charity', was used to emphasize ownership and democratic principles. In June 1991, the package of rules governing the public interest foundation known as the Northwest Provincial Special Fund for Health (The Fund) obtained an official permit from the Minister of Health and was conferred the status of an organization conforming to Law no. 90–53 of December 19, 1990 relating to freedom of association, by the Government of Cameroun. Based on an early draft which was developed for a similar project executed by GTZ in Southern Sudan (von Massow 1984), The Fund's constitution (Cheka & Schmidt-Ehry 1991) contained several essential points:

The Fund is an autonomous nonprofit body with the aim of improving the health of the population. The local HComs are adherent structures. Objectivity and fairness are assured

<sup>1</sup>To allow for minor currency variations, in this article simplified exchange rates were used: Exchange rate US\$/DM/FCFA before depreciation in January 1994: US\$ 1 = DM 1.50 = FCFA 255. Where necessary this is indicated by the word 'old'. After depreciation in January 1994: US\$ 1 = DM 1.50 = FCFA 510. Where necessary this is indicated by the word 'new'.



**Figure 2** North West Province 'Special Fund for Health' organizational structure including drug supply system.

by the fact that decisions are taken by majority vote and the need for a quorum of 51% of the membership. Without a quorum decisions are not binding.

Organs and members resulting from the community-state partnership structure are firstly, the General Meeting (GM) of the member HComs, which assures the majority of community representation. A GM is held at least once a year to take major decisions, particularly to adopt the budget and establish a provincial plan of action for health. Secondly, the Management Committee (MC) is the management and administrative organ of The Fund. Thirdly, the permanent Administrative Office (AO) assists the MC and is responsible for the day-to-day management of The Fund. The Chief Executive Officer of the AO answers to the MC and the GM, in that order.

The Fund owns a provincial drug supply entity, a nonprofit wholesaler for the CPs of all member HComs, which is also offering drug supply services to nonprofit third parties. In the provincial headquarters called Central Community Pharmacy (Central CP), two persons are primarily responsible: the

director of the Central CP, who is a pharmacist, and the Chief Administrator, who works with the Director, serves as personnel manager and is responsible for preparing commercial decisions. The staff comprises 15 persons at provincial level (including cleaner and nightwatch) and 1 CP attendant at each CP location (= 1 employee per 10 000–15 000 inhabitants).

The Fund observes rules and regulations which assure transparency, objectivity and fairness. Transparency builds confidence in the drug supply and health care system and enables the community to become more aware of how funds are collected, deposited and used. HCom members have access to reports, accounts registers, and minutes of all meetings concerning The Fund or the HCom operations. The executive members, who are responsible for managing community health resources, are accountable and responsible to the HCom and may be subject to criminal charges for mismanagement.

Rigorous rules on management and accountability also ensure sustainability. Accountancy of the adherent villages is kept twice, once at the given location and again at the Central

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CP. This type of alertness minimizes diversion of stocks and fraud of funds. The management of The Fund prepares at least four financial reports per year. In addition an annual audit is conducted by an independent expert. At HCom level, two auditors of the GM have sweeping powers to check the monthly accounts of the CP attendant and the treasurer. These audits supplement the periodic checks by the provincial supervisor of The Fund (Figure 3). It is also worth noting that the traditional structures of local chiefs/kings are directly or indirectly involved in the activities of the HComs. This often has a positive impact on problem-solving and safeguarding local CP assets.

Over the years, the protective alertness and control system resulted in average losses of less than 3% from diversion, fraud, mismanagement and expiry. Both the target group and the administration have learned that the money used for health (= DRF) is owned by the population and not an asset of the administrators. Presently The Fund acts as an autonomous trustee for all its revenues and for The Fund capital. Consequently, it is independent from government budgets and any external funds.

**Good management**

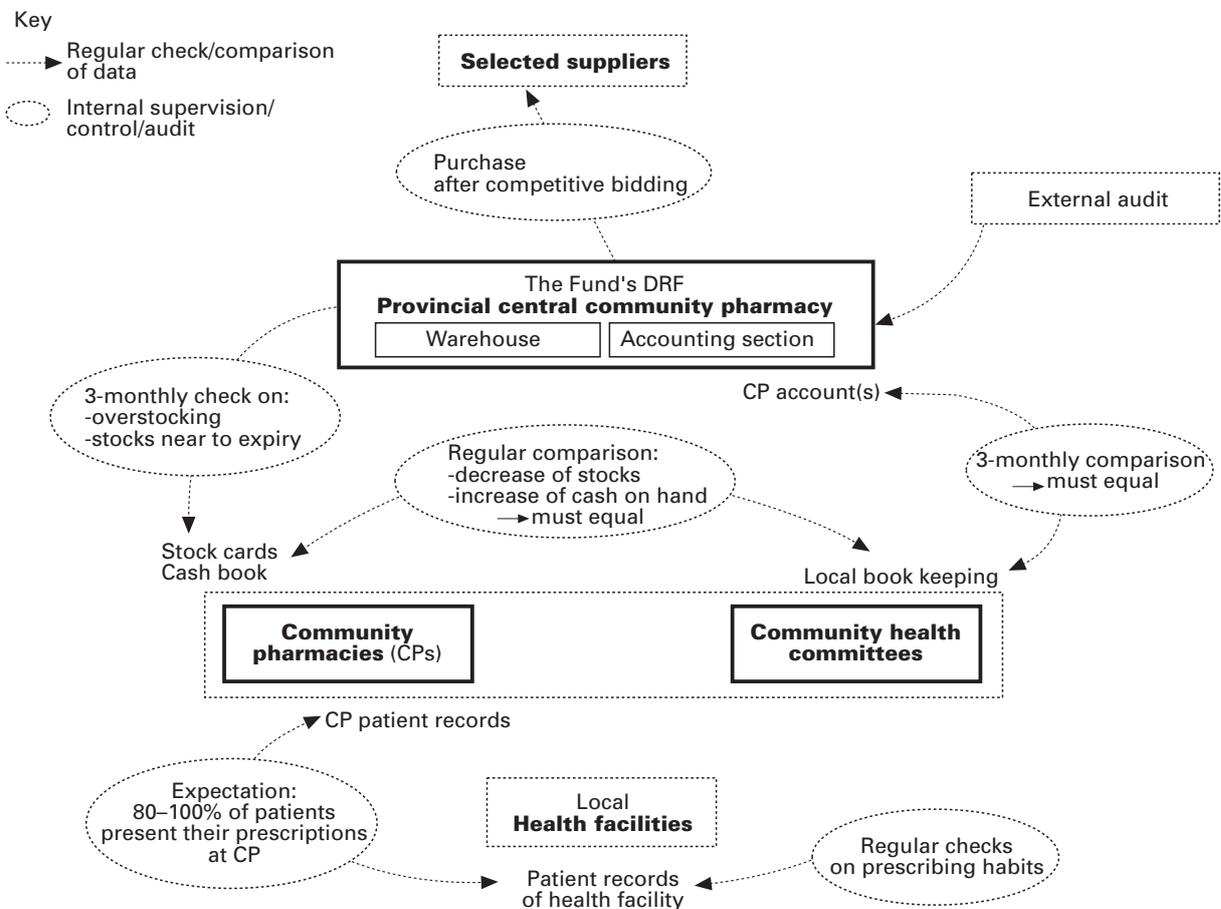
The number of involved parties (Figure 1) has been set at one. The Fund with two actors: Central CP and CP (owned by the local HComs), which minimizes mutual leakages. The Central CP organizes purchase, storage, distribution, accountancy, supervision, control and in-house training for a system which now has an annual turn-over of more than US\$ 1 million. The management tools necessary for procurement, stockholding and distribution are in place. The following general principles underly administrative rules:

Procurement, stockholding and distribution are demand-driven only.

Every CP demand (documented by an order) has to be tallied against actual therapeutic measures in the respective health care facility.

All administrative procedures are designed to monitor the consistency of stocks and funds.

All operations are cross-checked using two independent records.



**Figure 3** Internal supervision and control of the fund.

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Usually a 4–5-month supply will be ordered if stocks at Central CP have fallen below the 5- to 6-month anticipated consumption level. The average lead time for re-stocking orders from abroad is 4–5 months. Assurance of rapid turnover of drugs minimizes storage and DRF capital requirements. The procedures largely avoid stock surpluses or deficiencies. Losses of capital through expiry as well as a shrinkage of capital through depreciation of stocks approaching expiry dates have been practically eliminated (less than 3%). Purchasing follows international tendering procedures. The Central CP buys drugs from local manufacturers (Kuper 1991: 4%) or wholesalers (12%), and imports drugs directly from European manufacturers and/or brokers of generic drugs (84%). For this purpose the Ministry of Commerce and Industry has issued an import license for independent purchase of drugs from abroad.

Minor supply shortages, which are caused mainly by delayed deliveries and more recently by difficulties with customs clearance and the transfer of funds to settle bills, have up to now been speedily overcome by express orders of small quantities in Cameroun or by air freight from abroad. Thus, the out-of-stock time for the whole system has been less than one item per location for not more than 5% of the year.

Today, delivery volumes for CPs are determined strictly by orders which the CP attendant must submit to the Central CP at least one month in advance using a quadruplet form set. The set is the backbone of the internal ordering and delivery process. The procedure avoids mistakes resulting from transcription and arbitrary changes and guarantees sufficient lead time for delivery. It supports the Central CP's policy of consistently responding to demand.

Since initial stocking, deliveries have been made at regular three-month intervals to all affiliated CPs using 4WD vehicles. Delivery is carried out on tours which always take the same route. Thus supply becomes predictable. This procedure enforces the supply routine and contributes to confidence in the entire system. Another stabilizing factor is the ability of The Fund to effect payments immediately. This is rewarded by excellent terms of contract and payment offered by suppliers. Within the first two years of operation, the direct importation of generics from low-price world market suppliers and the centralized drug procurement for all member CPs resulted in a 45% to 55% decrease in purchase prices (Table 1) and contributed to the stability of retail prices.

### Budgeting

Traditionally the DRF concept does not include costs for investment, such as buildings or depreciation, under the assumption that third parties will pay for these items. In contrast The Fund makes budgetary allowances for all costs, including losses due to theft of drugs and money, but also inflation or devaluation. The forecast and the actual mark-ups

**Table 1** Development of system (Fund) purchase and selling prices

Year	Average purchase price*			Average selling price†	
	US\$	FCFA‡	%	FCFA‡	%
1985§				292	128
1986	0.56	142	100	229	100
(Dec = 100%)					
1987	0.31	78	55	203	89
1988	0.26	66	46	197	86
1989	0.26	66	46	197	86
1990	0.29	74	52	197	86
1991	0.30	76	54	201	88
1992	0.31	78	54	199	87
1993	n.a.	n.a.	n.a.	n.a.	n.a.
1994	0.32	160 'new'	57	262 'new'	57
(after devaluation)	(= 80 'old' FCFA)	(= 131 'old' FCFA)	(= 'old' %)		

\**Mode of calculation:* For comparison the 12-month turn over from drug sales is compared with the respective total costs resulting from drug purchase. The indicated purchase price is expressed for 1 standard treatment (on linear average of all provided drugs).

†*Mode of calculation:* For comparison for payment for 1 average standard treatment is calculated (as above; see \*).

‡Up to 1992: prices for 1 average standard treatment (as above; see \*) in 'old' FCFA (see footnote 1).

§Price recalculated for drugs for 1 average standard treatment (as above; see \*) supplied to 1 ordinary patient; stock outs not taken into account.

are based on accurate figures of the respective previous year. The following examples are given for the period 1986–94 (before the 50% devaluation of the FCFA), as the turbulence caused by the devaluation may have induced effects that cannot be discussed in detail here.

In 1992/93 (the last fiscal year before devaluation) expenditures amounted to US\$ 804 300 (without reserve-building of US\$ 56 900) while the revenue was US\$ 810 200. The MOH contributed US\$ 201 200 (US\$ 155 300 for salaries – an obligation resulting from the 1970 Propharmacy Law – and US\$ 45 900 for others). If these figures are expressed as percentage of net drug purchases (free on board/FOB), the budget (including reserve building) was equivalent to 315%, revenues to 295% and MOH subsidies to 73% (Table 2). Ordinary revenues from drug sales to Fund members do not assure the necessary increase of DRF capital for any expansion resulting from growing geographical area coverage. But surpluses from extraordinary services offered to nonmembers who are understood as mutual future members exceed this need by far.

Internal surpluses were disbursed for health-related activities. In 1992/93 they amounted to US\$ 169 400. A substantial portion, US\$ 85 100, was used to support supervision of medical personnel, the laboratory supply programme,

**Table 2** North West Province 'Special Fund for Health' 1992/93 budget allocation

EXPENDITURES	FUND	REVENUES	
(1) <i>Ordinary DRF activities</i> ( <i>drug supply to members</i> )		(1) <i>Ordinary DRF activities</i> ( <i>drug supply to members</i> )	
Drug purchase (at FOB prices)	69.9	Drug sales	181.8
Transport	16.2	Discounts, interests, claims	24.8
Personnel			
• DRF/MOH	39.6		
• DRF/Fund	30.2		
Administration	19.2		
Buildings	8.3		
Provision for losses	22.2		
Subtotal ( <i>drug-related costs</i> )	205.6	DRF REVENUES 1 = <i>Ordinary DRF revenues</i>	206.6
Reserve building (Increase of DRF capital)	14.5		
DRF COSTS 1 = <i>Ordinary DRF expenditures</i>	220.1		
(2) <i>Extraordinary DRF activities</i> ( <i>drug supply to non-members</i> )		(2) <i>Extraordinary DRF activities</i> ( <i>drug supply to non-members</i> )	
Drug purchase (at FOB prices)	26.8	Drug sales	69.4
Transport	6.1		
DRF COSTS 2 = <i>Extraordinary DRF expenditures</i>	32.9	DRF REVENUES 2 = <i>Extraordinary DRF revenues</i>	69.4
TOTAL COSTS 1-2 (DRF-related expenditures)	253.0	TOTAL REVENUES 1-2 (DRF-related revenues)	276.0
(3) <i>Fund activities</i>		(3) <i>Ordinary DRF subsidies</i>	
Fund administration	3.8	MOH subsidies (DRF salaries)	39.6
Assistance to health related activities			
• Community health (incl. local solidarity funds)	21.5		
• PHC supervision	12.0		
• Laboratory supply	8.0		
• Maintenance workshop	1.5		
• ORS promotion	0.1		
• Condom programme	0.1		
(4) <i>Extraordinary reserve building</i>		(4) <i>Extraordinary Fund subsidies</i>	
Increase of DRF assets	27.3	Extraordinary MOH subsidies	11.7
GRAND TOTAL EXPENDITURES FUND	327.3	GRAND TOTAL REVENUES FUND	327.3

Figures are given for: *Fund and Drug Revolving Fund (DRF)* (in million 'old' FCEA)

installation of a provincial maintenance workshop, etc. At village level, refunds of US\$ 84 300 were used for water supply, waste disposal, health education and solidarity funds for local

support of the indigent poor (Monekosso *et al.* 1996).

### Social equity

When designing cost recovery mechanisms in the health system, questions of equity have to be taken into account (Carrin 1987; Velasques 1989), since poorer households spend significant portions of their income on drugs (De Ferranti 1985). At the same time the principle of price calculations based on health considerations has been proposed (Litvak *et al.* 1989) to bridge the gap between needs and affordability. Consequently, The Fund has replaced the official linear price-setting procedure of the 1970 Propharmacy Law by using a differential mark-up determined by health and social criteria which, however, aims at full cost recovery within the overall drug basket. This kind of distinction in making cost recovery calculations allows for price-setting flexibility and cross-subsidies in favour of expensive but vital drugs.

Based on the annual budget plan, the total overheads for the drug basket were determined to be 210% of the drug net purchasing price (FOB) between 1986 and 1993 (and at 110% after the devaluation). These 210% determined the limits for price-setting. Retail prices are set not using a uniform mark-up but by taking health priorities and the economic situation of the target group into account.

*Vital drugs* (mark-up < 210%): e.g. penicillin G 1 mega vials = 145%;

*Products to be promoted* (mark-up  $\ll$  210%): e.g. oral rehydration salt = 45%, condoms = 33%, disposable syringes = 22%;

High turnover, '*merely desirable*' drugs (mark-up  $\gg$  210%): e.g. aspirin = 615%. (These contribute disproportionately to covering system costs.)

Another principle which promotes equity is the fact that retail prices in the NW Province are uniform independent of distance from Central CP. Local solidarity funds fed by internal surpluses aid the poor as far as payment for drugs or user fees for health services are concerned. On the premise that the predicted provincial annual turnover and the composition of the drug basket are stable, the overall drug sales result in an internal yield which assures full cost recovery. In this way The Fund incorporates elements of risk-sharing, and the priority of medical aspects serves as guiding principle of the in-house philosophy.

### Essential drug policy and medico-therapeutic need

Starting in 1986 with 59 CPs, about 100 VHPs and a geographical or population coverage of almost 60% of the

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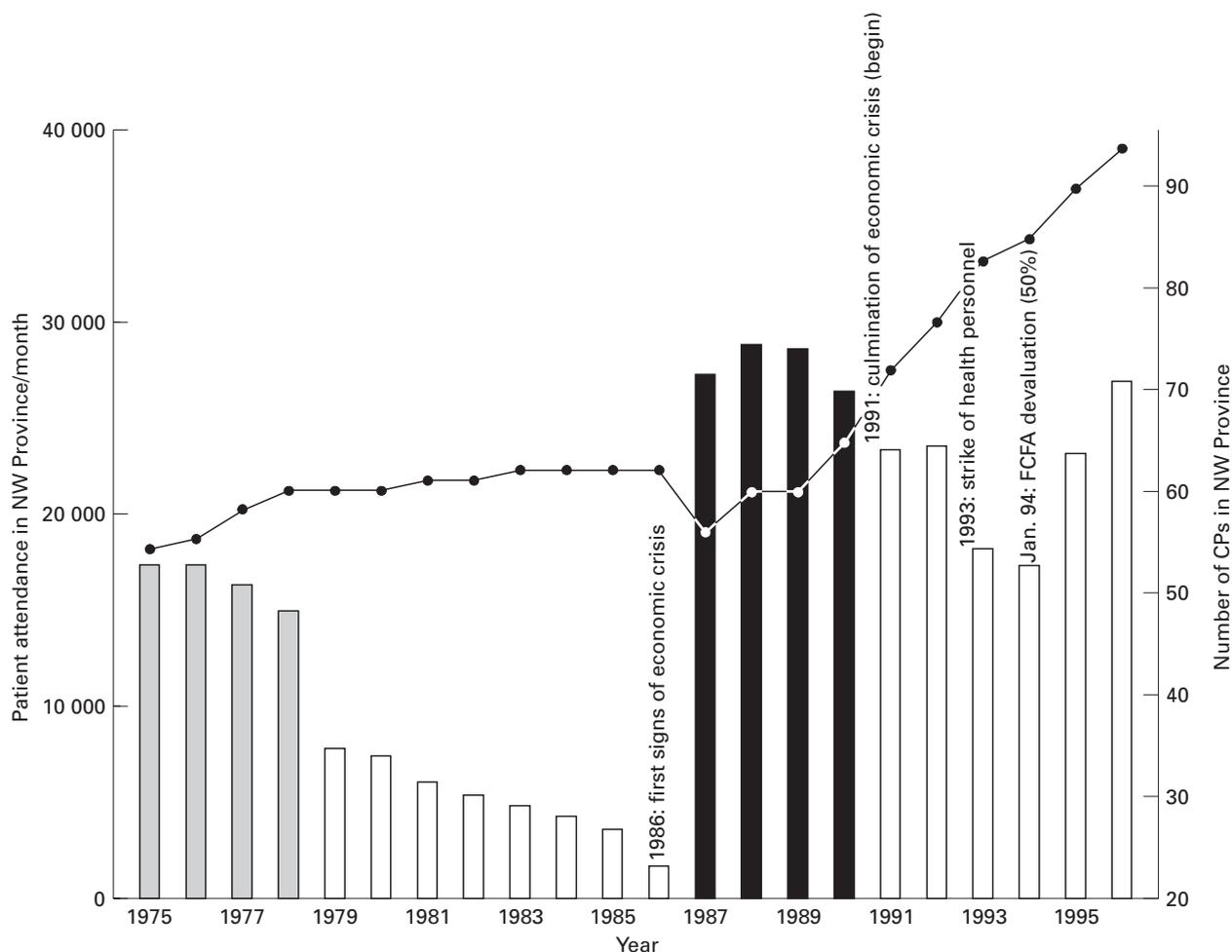
rural area, The Fund has continuously expanded from within (Kuper 1993). On application, new members are offered drug seed stock, safety measures for the CP locality and training. The local community has to provide a well-furnished locality, to select the CP attendant, and to elect the local HCom.

In 1995 The Fund provided the drug supply system for an estimated 80% of the rural population and a good portion of the urban areas. Now more than 90 CPs are supplied from the Central CP. VHP drug stores get their drugs from neighbouring CPs. The Fund offers services not only to its members but also to associated religious and charity institutions, improving pharmaceutical coverage even further. This has contributed considerably to better quality of care in the NW Province. The quality of care and the user rate will rise wherever user contribution and reliable drug supply become a constituent factor of the health care system (Litvak

& Bodart 1993). This is the strategy of success even if policy debates focus on the revenue aspect rather than on drug availability.

Immediately after renewal of the drug supply system, patient attendance increased rapidly. Beginning in 1990, the attendance rate dropped due to unstable economic and socio-political conditions: culmination of economic crisis, civil strike, devaluation and progressive impoverishment (48%) of the rural population (World Bank 1994b). It is very likely that two main factors influence the attendance rate: a positive one, namely the availability of drugs; and a negative one, namely the economic and political circumstances. Figure 4 shows that since 1994 the user rate of health services has been continuously recovering on a lower level.

On the one hand, essential drug programs have to assure the continuous availability of drugs, and efficient use of these



**Figure 4** North West Province PHC system 1975 – 1996 development of patient attendance rates in (■) full project years, (▒) Canadian project years and (□) other years and numbers of community pharmacies (CPs).

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drugs at the prescriber and consumer level (Hardon & Le Grand 1993) on the other hand. To prevent medical and paramedical personnel from making therapeutic decisions on profit grounds, criteria for remuneration were developed to assure both adequate income (fixed basic salaries) and a reward for workload and work quality. Now the number of items per prescription varies between 2 and 3. This shows that the expectation of the project design (that prescribers may apply the principles of rational drug use voluntarily) was met.

Drugs are dispensed only on presentation of a prescription issued by authorized medical staff. These prescriptions must either be dispensed completely or referred back to the prescriber. Drugs are issued solely against cash payment. Relief of the patients unable to pay is given by the local solidarity funds – a DRF tool supporting equity. Thus, problems due to debts, incomplete therapy and subsequent self-medication are minimized. Strict adherence to these rules and regulations is accepted by the community as a means to assure the sustainability of 'their' system. The advantage of having drugs available at all times at low cost outweighs the erratic availability of free drugs (Nchinda 1978).

Compared to the average cost of US\$ 29.5 per prescription (incl. transport) in Adamoua Province (Litvak & Bodart 1993), treatment is offered at affordable costs. After the 50% FCFA devaluation, The Fund's average retail prices increased by only 32%. In 1992 (linear) average costs for one standard treatment were at FCFA 199 ('old' exchange rate = US\$ 0.78); and in 1994, after devaluation, at FCFA 262 ('new' exchange rate = US\$ 0.51). This moderate price increase took account of the depressed economic situation of the target population. It further improved the price difference between drugs provided by the private pharmacies (immediate increase by 70% to 80%) and The Fund from 45% to 52% (see Figure 5).

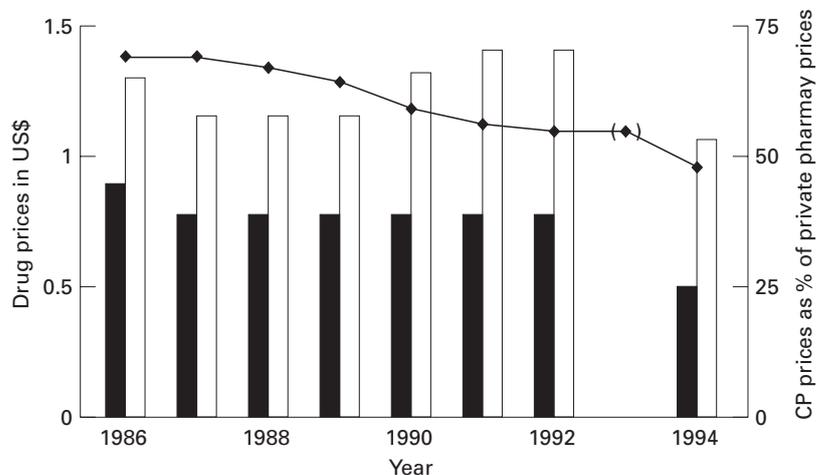
Tying the earnings from drug sales to the financing of health care entails the risk of maximizing prescriptions to obtain additional funds for the health system including salaries, which may also add to the burden of the poor. Therefore The Fund generates surpluses only at Central CP level. (CPs buy their drugs at sale-prices; expenses are refunded.) After two financial years the internal yield is redistributed to the village HComs, which may use the amount for health promotion or investments (Monekosso *et al.* 1996). The shares are calculated according to patient attendance rates, and not according to drug sales. This frees financial transactions from any connection to effected payments and surpluses received.

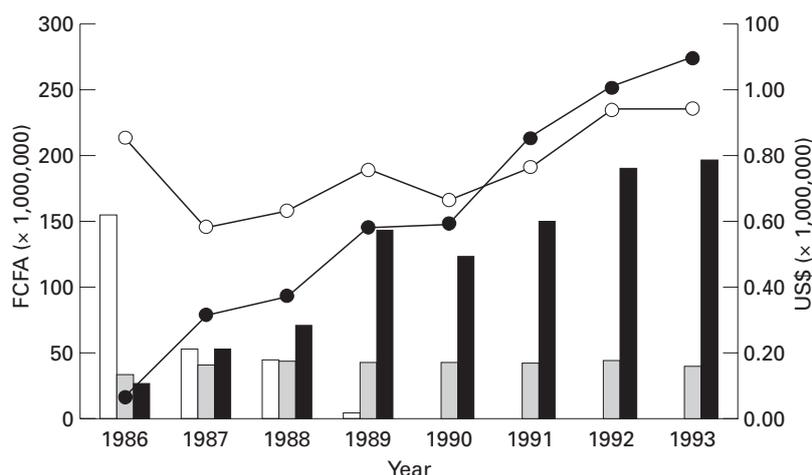
## Development of drug revolving fund capital

The volume of DRF capital must always reflect the system's changing needs for capital coverage. The experience of the project shows that a starting capital of approximately US\$ 1 million was needed to assure financial viability. From this we can derive a crude estimate for the running DRF capital (stock and liquidity) which should be 300% of the expected annual drug turnover (at FOB prices). Due to the rising turnover following the increase of member villages and the geographical and financial expansion, in 1992 the capital requirement was re-calculated at US\$ 1.5 million.

The Fund's assets increased from US\$ 230 000 in 1986/1987 to US\$ 1.5 million in 1994/1995, a result in contrast to most similar projects. The 1994 devaluation reduced the DRF working capital by only 18% because of The Fund's conservative financial and stock policy. At the end of the financial year 1994/1995, DRF capital was US\$ 1.5 million. For comparison: after the 50% devaluation, the central medical supply organizations of the West African states of

**Figure 5** 1986–1995 development of drug selling prices. Comparison of linear average prices of drugs supplied through the Fund or bought from private pharmacies. ■ CP prices; □ Private pharmacies; ◆ CP prices as % of private pharmacy prices. Prices for 1994 are calculated in accordance with the situation after the 50% FCFA devaluation (Jan. 1994) but for a better comparison one expressed in 'old FCFA' (2 new = 1 old).



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**Figure 6** North West Province drug supply system 1986–1993 financial development. □ Expenditure by GTZ; ▒ Expenditure by MOH; ■ Expenditure by DRF; ○ Total expenditure. ● Revenue DRF.

the FCFA zone were practically deprived of liquidity (essentially equivalent to bankruptcy) and had to ask the donor community for new capital investments.

**Table 3** The ratio of requisite Revolving Fund Capital (Debit/D) to that existing (Credit/C) (December to December). Debit at the beginning was US\$ 1.0 million = DM 1.5 million = 255 million 'old' FCFA

Year	Debit [in million FCFA]	Credit	Ratio D : C	C = % of Debit
1986	255	59	1.0 : 0.23	23
1987	255	87	1.0 : 0.34	34
1988	255	135	1.0 : 0.53	53
1989	255	222	1.0 : 0.87	87
1990	255	232	1.0 : 0.91	91
1991	255	332	1.0 : 1.30	130

Based on 1991/2 membership and turnover, Debit was revised in 1992 and increased to: US\$ 1.5 million = DM 2.25 million = 382 million 'old' FCFA

Year	First ratio D : C	Revised Debit [in million FCFA]	Credit	Later ratio D : C	C = % of revised Debit
1991	1.0 : 1.30	382	332	1.0 : 0.86	86
1992		382	420	1.0 : 1.09	109
1993		382	486	1.0 : 1.27	127

After the devaluation in 1994 the revised Debit mounted to: US\$ 1.5 million = DM 2.25 million = 765 million 'new' FCFA

Year	Revised Debit [in million FCFA]	Credit	Ratio D : C	C = % of revised Debit
1994	765	760	1.0 : 0.99	99

### Economic sustainability

Five years after restructuring, the drug supply system reached break-even point in 1991. Since then, the economic load-carrying capacity for sustainability of the DRF has been validated by drug sale revenues generally covering all anticipated programme activities or costs of The Fund. The budget's aiming at full cost recovery resulted in internal revenues amounting to 20% in the 1988 financial year. This figure eventually stabilized at an average level of 15% until devaluation in January 1994. External cofinancing was not necessary. Nevertheless The Fund still provides some surpluses. (Even zero earnings indicate positive project results, and encourage confidence in sustainability.) Internal surplus has been used to minimize structural weaknesses such as gaps in government health services resulting from the economic crisis, for example when EPI activities dropped from over 80% in 1990 to less than 40% in 1991 (Ghogomu *et al.* 1996): The 4-month strike of the health staff in 1993 left the activities of The Fund relatively unaffected.

All over NW Province affordable drugs from The Fund were always available. This resulted in a beneficial moral obligation of the prescriber to adhere to The Fund items. Due to constant medical and pharmaceutical supervision, over-prescribing has become a rarity. It is justified to assume that this coincidence of positive factors encourages patients to visit health services even in hard times, at least for 'simple' consultations. The fact that the attendance rate at public health services has substantially dropped since culmination of the economic crisis while drug sales remained relatively stable may be taken as proof. Furthermore, during that time The Fund was acting as purchasing agent for most of the essential drug projects in Cameroun, as most of them were running short of external supplies.

**Table 4** Development of usage and income of medical and pharmaceutical services (Ghogomu *et al.* 1996)

Year	Hospitals/Health centres		Community pharmacies
	Monthly consultations	Monthly income from fees	Monthly drug turnover
1989	480	510.000 FCFA 'old' FCFA	230.000 'old' FCFA = 1,90 US\$ per prescription
1994	230	110.000 FCFA 'new' FCFA	260.000 'new' FCFA = 2,20 US\$ per prescription

**Table 5** NW Province health budget for the rural area in 1991

Public health service (US\$ 3.70 per capita / cost recovery through fees from patients at approximately 20% = US\$ 0.75 per capita)	US\$ 3.3 million
Church health services (offered at largely full cost / = US\$ 1.20 per capita)	US\$ 1.1 million
Ordinary drug supply of The Fund (offered at full cost recovery / = US\$ 1.05 per capita)	US\$ 0.86 million

## Discussion

Habimana (1997) states that structural adjustment programs coupled with devaluation in Rwanda in October 1990 resulted in an impoverished population, financial inaccessibility to essential drugs, and exponential growth of the mortality incidence in the most vulnerable groups. The implemented design of the project demonstrates that it is possible to improve rational use of drugs, to pay attention to social equity, to support improvement of the health environment, to realize full cost recovery, to self-finance extension of turnover and geographical coverage, and to maintain and increase DRF capital, even in times of major upheaval.

### The Fund: an important health care provider

Considering the project in terms of health, efficiency and equity, indicators which measure the effects and characteristics intended by PHC-related activities – such as continuous availability of most-needed drugs, uniform geographical coverage, fairness of price-setting, economic viability and community participation (Schrettenbrunner & Harpham 1993) – all indicate that project inputs, process, outputs and results exhibit a uniformly positive trend. In 1996, 10 years after the project began, the population coverage of The Fund reached more than 80%, a plus of around one third, and The Fund has become one of the three main health care providers for the rural population of the NW Province which comprise the public health service (medical diagnosis and therapy); church health services (medical diagnosis and therapy, and

sometimes pharmaceutical supply); and the North-west Special Fund for Health (pharmaceutical supply). Simultaneously the private sector has been visited by a relatively constant 2–3% of the population. The budgets of the three providers totalled US\$ 5.3 million (around US\$ 6.00 *per capita* of the rural population) at the end of the project in 1991. Estimated contributions are given in Table 5 (sources: BMZ 1991; Fund accountancy).

This means that in 1991 the rural population was cofinancing health services by around 50% (= US\$ 3.00 *per capita* and year). The other part was covered by the public health budget (BMZ 1991)<sup>2</sup>. In 1991 the consultation ratio of public health service and church health services was 2:1. Five years later the ratio of public/church health services reached approximately 1:1. On the assumption that the 'internal' cost situations of the three providers government, churches and Fund have not changed and that the decision of the population to visit one or the other is still guided by the same expectations, the cost ratio government/churches/Fund had changed from 63:21:16 in 1991 to 49:33:18 in 1996. Thus the population now cofinances about 60% of the health budget.

As the economic figures have worsened, the need for payments affects especially the poor. They, in particular, abscond from hospital immediately after initiation of the treatment (Ghogomu *et al.* 1996), or they may not go for consultation in the first place. In such cases the local

<sup>2</sup>In 1991, financial contribution to public health services made from the internal surplus of the Fund levelled more than the value of subsidies received from MOH.

solidarity funds for the indigents or poor constitute a relief from poverty.

### The Fund: a sustainable structure

Among the multiplicity of destabilizing factors (Figure 1), the most important problem of DRFs is incomplete financial planning resulting in an underestimation of real costs. Specially in times of crisis, when direct (e.g. MOH payment of salaries) or indirect subsidies fail, financial collapse is likely. Rigid financial planning must, however, not be undermined by other projects that offer generous subsidies. Well-intended external support resulting in below-real-cost prices may become a direct competitor and jeopardize the success of projects with a sound financial policy.

That is why the project has developed and implemented mechanisms to prevent common losses of DRF and imbalances. The Fund's budgeting counteracts risks by incorporating them into budget forecasts, and in the day-to-day business the built-in control mechanisms function as systemic alert devices to stabilize imbalances. The arrangements make the system sustainable and result in a socially justifiable compromise between therapeutic requirements and economic considerations. However, governments must take responsibility for the availability of foreign exchange, even in times of economic constraints (Griffith 1987). With respect to this, two framework conditions should be mentioned which contributed to the sustainability and financial success of the project: As a member of the FCFA zone, Cameroun has a freely convertible currency; and the Ministry of Commerce and Industry issued an import license for drugs, which simplified purchase from abroad and meant that all payments could be made direct from the Central CP bank account.

Achievements must be examined in the context of political, social, economic, managerial and financial preconditions (Foster & Drager 1988). In conclusion it can thus be stated that the project approach has supported the restructuring of health services and fulfilled its objectives: constantly available essential drugs kept wide sections of the population away from self-medication and questionable drugs bought from flying hawkers or from patent medicine stores; more rational use of quality drugs; rising attendance rates at public health services; increased use at identical costs; cofinancing of government and patients that stabilized the budget requirements for health services; supervision as a constant factor of health services; better care at identical costs.

Through The Fund, the population experiences autonomy and an effective influence on health financing. The project's sustainable success is due to the democratic involvement of the actors. Oben (1989) expected: 'While the health delivery system in the project area may not achieve Health for all by

the year 2000, it is very likely to provide at least essential drugs for all by the year 2000 – in the North-west Province'.

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