

# ACTION AGAINST WORMS

AUGUST 2006 ISSUE 7



## IN THIS ISSUE:

### Sustaining programmes and improving drug access

- There is only one drug
- What's the gap?
- The Schistosomiasis Control Initiative approach
- Global procurement
- Three West African control programmes

© Henrietta Allen/WHO

A child in Cameroon being treated with praziquantel during a deworming round, 2006.

## THERE IS ONLY ONE DRUG

**P**raziquantel is the only drug for the treatment of schistosomiasis. It is highly effective, safe, and easy to deliver in tablet form, yet insufficient quantities are manufactured globally to meet the needs of endemic countries – and countries lack access to the supplies that do exist. Moreover, where other parasite control programmes benefit from global drug donations, there is no such pledge for schistosomiasis control.

This issue of *Action Against Worms* looks at key issues that affect drug access and highlights the experience of the Schistosomiasis Control Initiative<sup>1</sup> (SCI) in managing drug supply and negotiating prices. It concludes by advocating for a global procurement system as a means of helping countries to buy essential drugs.

In the three years since SCI was launched, the six participating countries (Burkina Faso, Mali, Niger, Uganda, United Republic of Tanzania and Zambia) have treated over 26 million individuals with praziquantel. Within a further two years, these same people will have received a second – and, where necessary, third – treatment. Each country has amply demonstrated its ability to manage large-scale drug delivery programmes and train thousands of non-medical staff to calculate and administer the correct dosage.

***Nevertheless, the critical question facing every programme manager and every donor remains as entrenched as ever: what can be done to ensure that these programmes continue once the initial stimulus and support provided by SCI ends?***

Part of the answer relates to the priority given to these programmes by the government. Part of the answer is about well-designed control programmes which target those most in need first and monitor their impact and adjust accordingly. Both elements are affected by the single most indispensable element which are the tablets, which must be affordable, of good quality and arrive on time.

At the 2001 World Health Assembly, resolution 54.19 set a global target – ***the regular treatment of at least 75% of school-aged children who are at risk of schistosomiasis and intestinal worms by the year 2010.*** However, without a serious increase in the number of countries carrying out large scale deworming programmes and a concomitant dramatic improvement in the supply of drugs to treat these infections, this goal will not be reached.



© Albis Gabrielli/WHO

www.who.int/wormcontrol

PPC NEWSLETTER

## WHAT'S THE GAP?

WHO estimates that the annual supply of praziquantel is currently some 89 million tablets, while the annual "demand" or need exceeds 400 million tablets for Africa alone. This shortfall is symptomatic of a partial market failure: those most in need of treatment cannot translate that need into effective market demand, because of lack of purchasing power, lack of information, non-availability of the drug locally or – as is most likely – a combination of all these factors.

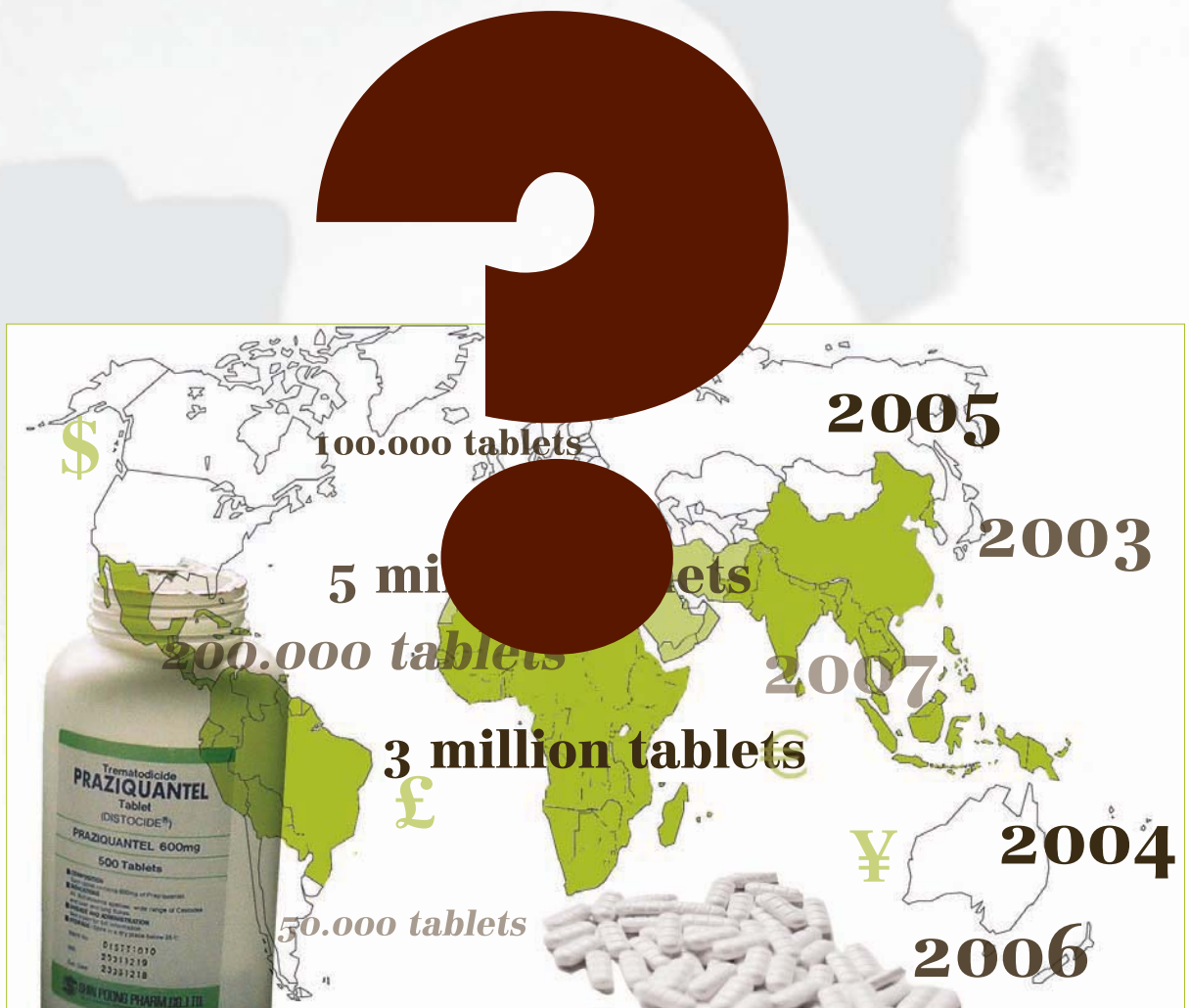
### Why do single countries have difficulties ordering drugs?

#### Small order → High price

If control programmes are to be sustained over the long term, the unit price of the drugs will always be a key consideration, whatever the source of programme funds. Neither governments nor donors will willingly pay more than the acknowledged market price for tablets. An individual country, requiring a relatively small quantity of tablets and perhaps ordering only one year's supply, will pay a higher unit price than, for example, SCI, which orders tens of millions of tablets at a time on behalf of several countries.

#### Lack of long-term funding → one-off orders

The tendering processes of national drug procurement agencies may lack the flexibility necessary to accommodate the timing requirements of specific mass treatment programmes. In practice, severe financial constraints and an absence of long-term guarantees of funding levels mean that most agencies cannot commit to multi-year orders. Manufacturers are aware of this kind of difficulty, taking it into account in the prices they offer such countries.

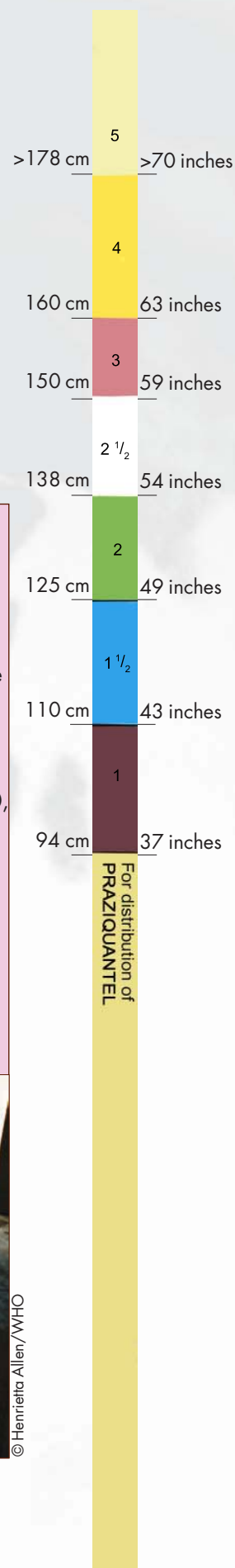


## THE SCHISTOSOMIASIS CONTROL INITIATIVE APPROACH

### From tender to delivery

SCI paid for all three elements detailed in the “shopping list” below, and also managed the procurement process in the initial stages<sup>1</sup>. First, a public invitation to tender was issued. The short-listed companies were then requested to submit samples of both praziquantel and albendazole, which were analysed on behalf of SCI for conformity with the American Pharmacopeia standards. SCI then ordered substantial quantities from five of the manufacturers, with the guarantee that comparable quantities would be ordered for the next four years.

The suppliers delivered the orders directly to each country, thus removing the burden of procurement from the countries and allowing SCI to monitor the timing of each delivery. With treatments scheduled to avoid the rainy seasons and coincide with the school terms, the task of country managers was made considerably easier.



### SHOPPING LIST

#### Drugs costs<sup>2</sup>:

On average a person needs 3–5 tablets of praziquantel (600 mg) for schistosomiasis and 1 tablet of albendazole (400 mg) or mebendazole (500 mg) for intestinal helminths. WHO recommends that where both parasites co-exist they should be treated at the same time. If there is realistic market competition, a tablet of albendazole or mebendazole typically costs US\$ 0.02 and a tablet of praziquantel about US\$ 0.08 including shipping costs.

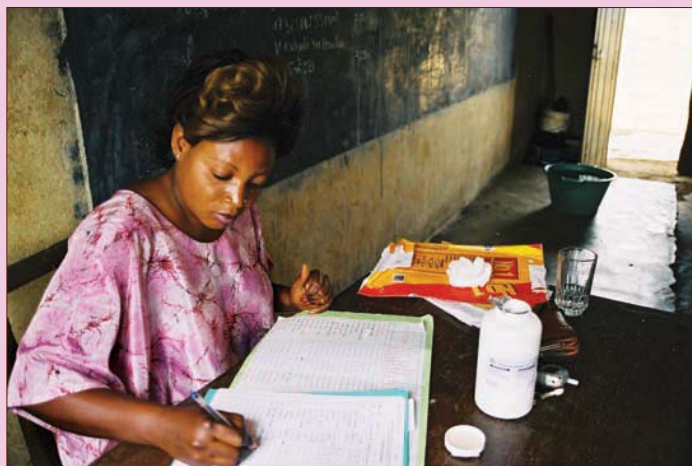
In line with WHO’s estimates, SCI estimated that the initial cost per person treated was around US\$ 0.40, which includes campaign costs such as training, IEC materials, equipment and monitoring, but after the first year or two – when capital investment is inevitably highest – routine recurrent costs dropped to just over US\$ 0.30 per person.

#### Delivery costs:

The shipping of drugs to ports of entry, their clearance through customs, safe storage, and eventual transport – sometimes over difficult terrain – to hundreds of health posts, all incur costs. Staff costs also need to be factored in.

#### Monitoring costs:

Collecting data on the impact of successive treatment rounds and setting up sound monitoring and surveillance systems are vital. SCI met most of these costs for each country, while governments and local communities provided the staff to manage programmes at national and local levels.



A teacher in Cameroon recording the children treated on the school register, 2006.

© Henrietta Allen/WHO

<sup>1</sup> Using the Procurement Service of Imperial College London, where the SCI Management Unit is located. Funds were provided by the Bill & Melinda Gates Foundation.

<sup>2</sup> The dose of praziquantel is based on height. For albendazole, 1/2 tablet is given to 1–2-year-olds, 1 tablet (400 mg) to everyone over 2 years of age. For mebendazole, the dose is 1 tablet (500 mg) for anyone over the age of 1 year.

**BENEFITS OF SCI'S CENTRAL PROCUREMENT SYSTEM**

- National managers were not burdened with procurement.
- SCI monitored the timing of each delivery.
- SCI carried out quality control checks on a sample of each delivery.
- Several alternative and competing manufacturing companies were assured of a significant market share over several years.
- The unit cost of praziquantel was substantially reduced in each year of the programme (from US\$ 0.12 to US\$ 0.08), while quality was maintained.

**GLOBAL PROCUREMENT**

Without an efficient and timely procurement and delivery service, any country acting alone is likely to find the price of the tablets increasing beyond its capacity to pay and prohibitive in the context of competing demands for limited resources. Given the factors that mitigate against endemic countries cooperating to generate consolidated drug orders, long-term sustainability would be greatly helped by the creation of a global procurement mechanism to meet this need.

Provided with the necessary funds, this mechanism would act on behalf of countries, establishing multi-year contracts with suppliers at agreed prices and ensuring that the tablets supplied adhered to international quality standards.

Other disease control programmes already operate similar mechanisms: GAVI – the Global Alliance for Vaccines and Immunization – is an example, although GAVI subcontracts the actual procurement process to UNICEF. For praziquantel and albendazole, WHO's global procurement system Web Buy is ideally placed to undertake global procurement on behalf of each country and has demonstrated that it is possible to rapidly increase global demand while negotiating a price far below the existing market level. With praziquantel, SCI has shown a similar downward movement in prices in the past 5 years.

Moreover, both manufacturers and countries can benefit from lower prices: lower profit margins per unit can be more than offset by bulk purchases instead of ad hoc, unplanned procurement on a small scale by individual countries or agencies. WHO would concentrate on four main areas:



## Principal roles of a global procurement mechanism

### 1 – Clear information

The lack of timely access to information on manufacturers, including the latest prices and drug availability, is a major obstacle to the ability of countries to place orders. Because the high cost of praziquantel in the past put purchase of the drug beyond their reach, most governments have no direct experience of procuring praziquantel.

WHO would promote greater awareness of the frequently underestimated impact of schistosomiasis (and intestinal worms, although the focus of this newsletter has been on the former) and provide regular updates on manufacturers and supply of praziquantel.

### 2 – Forecasting – “We need X million tablets every year, for the next 5 years”

Not surprisingly, manufacturers can only be expected to accept reduced profit margins if they are provided with clear forecasts of the likely scale of production, covering as many years as possible. A key role of a central procurement mechanism would be to identify the scale of demand in each country and present this information to potential suppliers with an assurance that the necessary funds would be available over a given number of years.

#### RISING TO THE CHALLENGE

**If funding becomes available, the manufacturers will need to significantly increase their current global production levels.**

### 3 – Prequalifying potential manufacturers

WHO has extensive experience in the prequalification of potential manufacturers and suppliers. Its Good Manufacturing Practice (GMP) approval is an internationally recognized endorsement for manufacturing standards and drug quality. Some countries (e.g. United Republic of Tanzania) insist on WHO GMP certification for any pharmaceutical company wishing to sell drugs to the government.

By setting standards in this way, the WHO GMP certification also indirectly controls the market by displacing inferior drugs. WHO routinely tests batches of drugs that are purchased or donated through the Organization at independent laboratories and WHO Collaborating Centres.



© Albis Gabrielli/WHO

Large-scale delivery for drugs in the SCL programme in Niger.



© Rob Holden

The reality of drug stocks at health centres in many countries.

## Praziquantel's unique market

### ✓ Active ingredient:

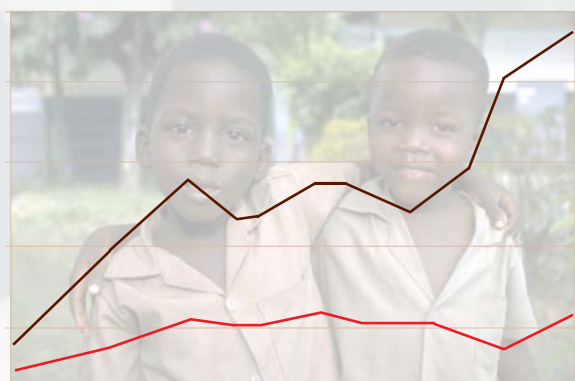
The market situation for praziquantel is a special one. Synthesis of the drug is complex; the few companies that manufacture the active ingredient (AI) are in Asia. Only one company manufactures its own AI and formulates the tablets.



© Henrietta Allen/WHO

### ✓ Low profit margins:

Until a dependable market is established, the current profit margin for producing praziquantel is unlikely to be attractive to many companies compared with other products; some may therefore decide to stop producing the AI. Competition would drop, triggering a price rise – which is also likely to be exacerbated by climbing oil prices.



© Pierre Virof/WHO

### ✓ Pollution:

Manufacture of the AI for praziquantel is a particularly polluting process, which means manufacturers incur production costs in order to conform to the local pollution control laws. Without a guaranteed and substantial market, they may hesitate before embarking on large-scale production.



© Henrietta Allen/WHO

### ✓ Transport costs:

All except two of the 10 tablet formulators that conform to international standards are located in Asia. This adds to transport costs in moving the AI from production sites to the tablet formulation sites. Even the two Africa-based formulators in the United Republic of Tanzania include the cost of transporting AI from Asia within their sales price, although their charges for delivery of the final tablets to east African countries are then reduced.



© H. Bower/WHO

## THREE WEST AFRICAN CONTROL PROGRAMMES

Stable prices and access to good-quality drugs are among the most critical elements for the sustainability of a control programme. Equally vital are political commitment and a rationally designed and carefully thought out programme. These important points are well illustrated by three of the SCI-supported countries in west Africa.

With its history of regal emperors, its film festivals and its music, west Africa is a top tourist destination – yet it is also home to some of the poorest countries in the world. Schistosomiasis is the second most prevalent parasitic disease in the region, after malaria.

The severity of schistosomiasis in Burkina Faso, Mali and Niger has meant that the disease has long been a research priority. Regional and small-scale control programmes have been established but for familiar reasons, predominantly the ending of donor funding, they have struggled to regularly treat large numbers of people and their impact has consequently been limited.

In 2003, SCI called for funding applications. In October of that year, all three countries were selected as a regional group, launching their control programmes in 2004.

**What sets these countries apart is that their national coordinators work hand-in-hand to learn from one another as they progress. They coordinate their research, share and jointly develop training modules, and meet regularly to discuss their programmes. Each has taken logical steps to establish its programme, starting with baseline data collection.**

### WHAT HELPS KEEP A PROGRAMME RUNNING YEAR AFTER YEAR?

- **A dedicated national programme manager with competent support staff.**
- **Official budget lines over time.**
- **Treatment targeted to those who need it most.**
- **A good monitoring system to indicate when the programme needs adjusting.**



A child with bloody urine – Niger, 2006.

© Albis Gabrielli/WHO

WEST AFRICA

## Sustaining programmes for the long haul



© Albis Gabrielli/WHO

The First Lady of Mali speaks at the launch of the control programme.

### ✓ Political support

SCI identifies several factors – mostly financial – as key to sustainability. Even after funds are made available, however, political commitment remains an absolute requirement. In each SCI-supported country, senior politicians have publicly advocated for control of these diseases, associating themselves personally with the campaigns that have mobilized public officials, local leaders, drug distributors and the communities themselves.

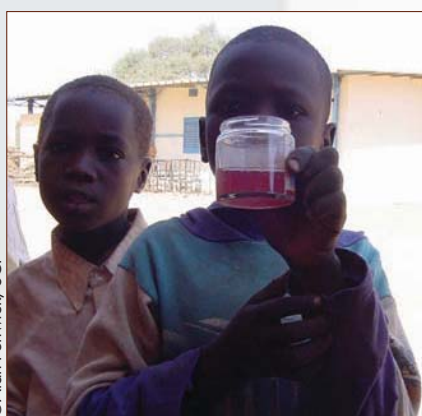


© Albis Gabrielli/WHO

A mass drug distribution point in Mali.

### ✓ Demand – people wanted treatment

In addition to funding and political commitment, each country had a history of monitoring the effects of the disease. Transmitting messages on the seriousness of infection to their populations prompted large numbers to seek treatment once it was made available.



© Alan Fenwick/SCI

A child holding a jar of bloody urine, a clear sign of severe schistosomiasis in Niger, 2006.

### ✓ Treat those who need it most first

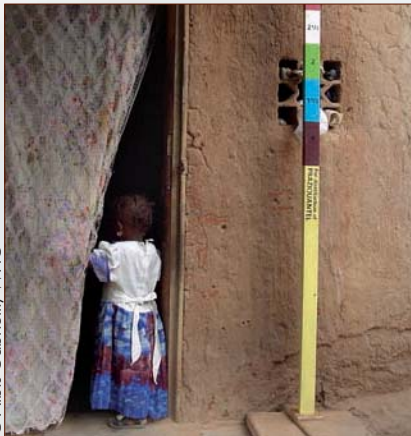
Mapping the prevalence data and visually pinpointing the most severely endemic areas enabled programme managers to target worst-affected populations and provide priority treatment for those suffering the most. Returning repeatedly to the same schools over time also meant the impact of the programme on infection levels could be assessed and the schedule adjusted accordingly. Both approaches save money and time and therefore allow the programmes to run longer.

**BETTER COORDINATION AND INTEGRATION**

**SAVE TIME –**

**– BOOST C**

**AND IMPROVE PEOPLE'S OVERALL HEALTH BY DEA**

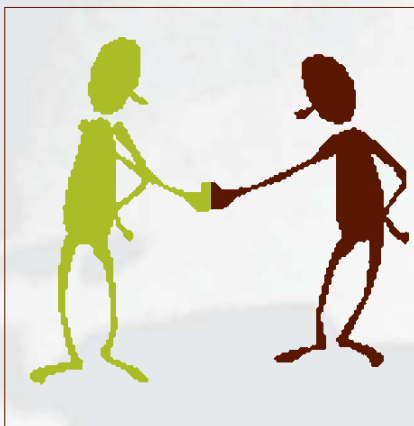


A child in Mali next to a praziquantel pole

### ✓ Local drug supply and procurement

In an effort to become more self-reliant, Niger has established its own procurement committee. Burkina Faso's national pharmacy, CAMEG, issued a call for tenders for the first round of 2.25 million tablets of praziquantel: an international pharmaceutical company was selected. For the next round, CAMEG was able to provide a locally competitive quote. Mali is exploring the possibility of purchasing drugs jointly through the Ministry of Health drug procurement agency, local suppliers (public and private) and UNICEF. In all three countries, several international pharmaceutical companies are registered to supply praziquantel and albendazole.

While countries establish their own procurement systems, just as these three are striving to do, a central mechanism would offer clear benefits in guaranteeing a steady price and supply over time.



### ✓ Linking programmes<sup>1</sup>

Until recently, large-scale programmes that tackled different diseases were invariably delivered vertically, separately and at different times of the year. Yet it is often the same communities who are being reached, sometimes with the same drugs delivered by the same health staff.

Policy-makers are increasingly recognizing the benefits of integrating some of these programmes. Burkina Faso identified areas in which schistosomiasis and intestinal worm control could benefit from other ongoing treatment schedules and monitoring systems: integrating schistosomiasis surveillance with the malaria control programme; forging closer links with the International Trachoma Initiative and the African Programme for Onchocerciasis Control, both of which have a wealth of experience in using community approaches; and coordinating with the lymphatic filariasis (LF) programme has clear advantages. One of which is that the LF programme currently covers the whole of the country with albendazole plus ivermectin – thus freeing up the schistosomiasis and intestinal worm control programme to focus only on praziquantel distribution.

<sup>1</sup> Preventive chemotherapy in human helminthiasis. Coordinated use of anthelmintic drugs in control interventions: a manual for health professionals and programme managers. WHO (in press).

**WORKING WITH LARGE-SCALE PROGRAMMES CAN:**  
**REDUCE COSTS**  
**IMPROVE COVERAGE –**  
**WORKING SIMULTANEOUSLY WITH SEVERAL ILLNESSES**

We would like to thank The Bill & Melinda Gates Foundation for their generous financial assistance which has made this publication possible.

## Sustaining programmes for the long haul

Within a short space of time, Burkina Faso, Mali and Niger have rapidly scaled up their activities, demonstrating that they have the **commitment** and the **expertise** to tackle these diseases. No longer can worm infections be labelled as neglected – they are recognized as major threats to children's health and an economic burden to working adults.

**But advocating for action on these diseases, establishing effective and reliable drug procurement and delivery systems, and mobilizing populations is not enough!**

These programmes must continue after SCI's financial and technical support comes to an end in 2007. The challenge for the future will be one of ownership and ensuring that deworming becomes a regular feature of each country's routine health system. And while reliance on external funding has been repeatedly shown to make programmes vulnerable to collapse, endemic countries will probably still need some external assistance. A central procurement mechanism would arguably be the most useful form that this assistance could take. **At the same time, however, governments must progressively dedicate an increasing proportion of their national budget to ensure the continued impact of the control activities that have started so impressively.**

**Gradual takeover is possible. Deworming tablets are inexpensive compared with many other products and with the creation of a global procurement mechanism to secure regular supply and delivery, there would be no excuse for not treating every child at risk.**



**Ultimately, the "quiet" contribution that deworming makes to social and economic development, and to the quality of life of affected communities, will probably never be fully recognized – but it will be enormous.**

We very much hope that 'Action Against Worms' is both enjoyable and informative. If you have any comments on existing issues or suggestions for areas you would like to be covered in the future, please do not hesitate to contact us by e-mail at [wormcontrol@who.int](mailto:wormcontrol@who.int)

© Henrietta Allen/WHO  
Children in Cameroon during a deworming round, 2006.

© WORLD HEALTH ORGANIZATION 2006

We would like to thank the programme managers of Burkina Faso, Mali and Niger, and SCI for their assistance in producing this issue of "Action Against Worms".



**World Health Organization**

This newsletter may be freely reviewed, abstracted, reproduced and translated, in part or in whole, but not for sale or for use in conjunction with commercial purposes.

FUTURE