

Eradication of schistosomiasis in Guangxi, China. Part 2: Political economy, management strategy and costs, 1953–92

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Reported are the results of a study of the political economy, management, and costs of the successful Guangxi schistosomiasis eradication programme, spanning 40 years from 1953 to 1992. For this purpose we analysed all government data and memoranda on the policy, management, technical support, finance, and the control strategy of the programme. We also interviewed many local staff involved in the programme over the 40-year period and obtained cost data from annual county-level records on seven major categories of variable costs.

Schistosomiasis control in Guangxi began with one of the first examples of community participation and rapid assessment in public health history — the use of pre-franked envelopes to return disease questionnaires and suspect snails from rural areas. This approach quickly and accurately delineated the endemic area. This was Mao Zedong's "mass line", incorporating ideas and knowledge from peasants directly into services run for and by them, here the schistosomiasis control programme. Recognition by China's leaders that schistosomiasis was a great economic burden, steadfast prioritizing of the programme over 40 years, local innovative scientific study, agricultural and environmental focus on eradicating the snail hosts and boosting rural production, and mass community education and support were all key factors in the final success. Local leaders motivated programme staff and everyone involved knew the objectives. The programme was always multisectoral, with policy developed centrally, and strategy and collaboration encouraged and rewarded at the grass-roots. These features explain how a very poor autonomous region such as Guangxi finally eradicated schistosomiasis, spending less than US\$ 0.50 per protected citizen per year; it is remarkable that the disease and snails were initially found across a large area of complex environments and modern drugs such as praziquantel were not available for most of the 40-year period. The lessons from Guangxi can be adapted elsewhere and should encourage other areas to control endemic schistosomiasis using methods devised to suit the local culture and geography.

Introduction

So many green streams and blue hills, but to what avail?

*This tiny creature left even Hua To powerless!
Hundreds of villages choked with weeds, men
wasted away;*

*Thousands of homes deserted, ghosts chanting
mournfully.^a*

The fight against schistosomiasis was a high priority for China's leaders for over 40 years (1–4). The prominence of schistosomiasis control for the economic development agenda reflects concern about the high costs of the disease, including its impact on rural farmers and animal productivity, and the suffering and social stigma of afflicted individuals and communities (5, 6).

In each of 10 provinces, one autonomous region, and one municipality with endemic schistosomiasis transmission the Chinese government set up multisectoral advisory bodies, scientific research institutes, special hospitals and a multi-pronged control programme, and aimed for eradication of the disease. They have succeeded in many areas, including Guangxi Zhuang Autonomous Region on the middle and upper reaches of the Pearl river system, one of the important areas with endemic schistosomiasis. In 1989, the central government certified that Guangxi had eradicated schistosomiasis, nearly four decades after the control programme began. The history of the programme and its impact on the population are described in this and two accompanying articles (7, 8).

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^a From **Mao Zedong** "Farewell to the God of Plague", 1 July 1958 (translated by Li Zhijun, Guangxi Institute of Parasitic Diseases, 1997).

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In this article we report the political economy, management and costs of the Guangxi Schistosomiasis Control Programme, spanning the 40 years from 1953 to 1992 and focusing on the support, research, strategy, multisectoral partnering and resources needed for its eventual success. Knowledge of these elements of Guangxi's schistosomiasis experience will help other areas affected by the disease, including countries yet to attempt its eradication or control. The article also reveals how through a combination of politics, modest finances, agriculture, and economic development for disease prevention, China brought substantial health benefits to its poorest citizens in ways applicable to other public health problems.

Methods

We examined all available internal government publications and memoranda, and translated the information on political support, policy-making, management, technical support, finance and the control strategy. Also, many local staff who were involved in the control programme over the 40-year period were interviewed. The cost data came from annual county-level records (1953–92). Guangxi health administration used its own system of seven major categories of cost items, based on a method common to other government programmes in China. The accounting system dates from 1953, when socialist economic planning was introduced, and cost categories do not follow contemporary concepts of fixed and variable costs (9). The following categories are used: field operations for snail surveillance and disease detection; environment changes; sanitation and water supply; wages for county staff implementing the control programme; purchase of large equipment used in the field and in hospitals; administration; and other costs.

For each of the above-mentioned cost categories we calculated mean annual costs per county within each of eight historical intervals using available data; our method allowed for incomplete data with a few counties missing in some years. The total mean annual cost per county was calculated as the sum of all annual cost categories averaged across the same historical intervals. For grand totals we multiplied the annual sums per county by the number of counties worked each year. We chose 5-year historical intervals, except for one 3-year interval (1958–60) corresponding to a special period in Chinese political economy, the Great Leap Forward. Some 5-year intervals also correspond to special periods: 1961–65 (recovery from a famine and from socioeconomic problems arising from withdrawal of assistance from

the USSR); 1966–70 (peak of the Cultural Revolution); 1971–75 (end of the Cultural Revolution, death of Zhou Enlai), 1976–80 (death of Mao Zedong and period of Hua Kuofeng leadership), 1981–85 (early Deng Xiaoping reforms), and 1986–90 (further socioeconomic reforms).

The cost data were entered on a microcomputer using FoxBase, with SPSS autorecode to convert from Chinese characters to numerical format, and analysed using SPSS software. All costs were adjusted to the 1991 Chinese *yuan* (6 *yuan* = US\$ 1) using the retail price index published by the State Statistical Bureau (10) covering the entire 1950–91 period. We compared costs by category and era, relating time trends to political, economic and policy factors.

Results

History of the Schistosomiasis Control Programme

After the People's Republic of China was founded in 1949, the new government began to consider the health needs of the people. The Ministry of Health sent out a national directive on 12 April 1950 requesting specialists and rural administrators to discuss prevention work and, during the summer vacation, to form travelling education and treatment teams consisting of students and staff of medical and nursing colleges. Twelve provinces or administrative municipalities in the country had endemic schistosomiasis; most lay on the Yangtze river but in the south two provinces drained by the Pearl river were affected — Guangdong and Guangxi (see maps in 7, 8).

In May 1953 the Ministry of Health asked Zhejiang Province and others to continue preventive work on schistosomiasis. In 1955, for the first time since the disease was first recorded in antiquity in China, a national control effort began after Chairman Mao Zedong called for eradication of schistosomiasis. The Small Group on Prevention of Schistosomiasis, directly under the Central Committee of the Communist Party of China, began advising on eradication of the disease. Subsequently, schistosomiasis control has remained a high priority on China's development agenda.

In 1958 schistosomiasis was eradicated from Yujiang county, Jiangxi Province. The day after reading the good news, Chairman Mao Zedong wrote his famous poem "Farewell to the God of Plague", and published it in *The People's Daily* in his own calligraphy (11). Control programmes intensified in all endemic areas, with a multisectoral strat-

In each prefectural epidemic station the Department of Parasitic Disease Control worked together with GIPDC to carry out the work. The leading groups at the various levels formulated policies, designed control programmes, organized meetings, and assigned work. The public health sector searched for and eliminated snails, treated schistosomiasis, and gave professional and technical advice to all other sectors; the agricultural sector examined and treated livestock; and the water conservancy authority engineered for snail elimination in line with water conservancy facilities and activities. Other departments played important roles: the financial section raised and supplied funds; the commercial section organized supply of merchandise and equipment; and the propaganda section conducted health education and motivated the community.

At the level below the prefectural epidemic stations, county stations with 20–50 staff prevented and treated schistosomiasis, as well as leading the snail control, examination and treatment, control of faeces and water, and snail-eliminating hydraulic, and agricultural engineering. Following their introduction into the rural health system in the 1960s, barefoot doctors (now called village doctors) participated in case finding and snail work, organizing local people to assist in the effort. Mass participation gradually broke down in the 1980s as social collectivism was replaced by a form of market socialism unique to China. The changing situation was evaluated in Guangxi, and post-eradication maintenance strategies for schistosomiasis were altered (8).

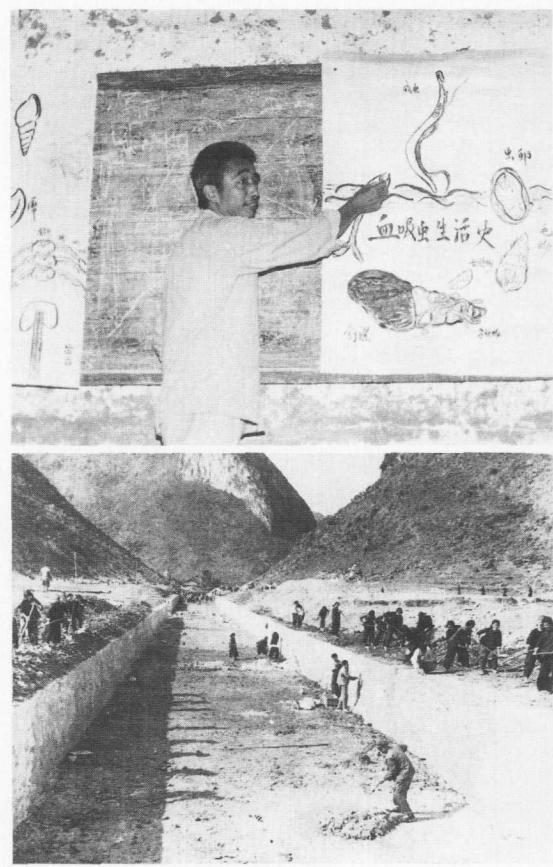
The “mass line”. The control programme used the “mass line”, a key element of revolutionary change that swept China after liberation in 1949. This is a unique method to connect the social reality and imagery of rural people to practical programmes serving their needs (6, 12). Hence, Guangxi’s first medical surveys for schistosomiasis in the early 1950s were followed by a mass movement to report cases and snails. This innovative programme used postal questionnaires and return-addressed pre-stamped envelopes, and quickly delineated endemic areas (7).

In the late 1950s mass campaigns began for snail elimination. Farmers, teachers, students, office workers and soldiers in endemic areas took part, scraping earth, piling up compost, burning material, filling up gullies, and transforming low-lying land where snails bred. In the 1960s people were exhorted to “put prevention first”, but this was a period of economic and political turmoil that slowed down the control programme. In the 1970s, however, there was mass participation in endemic areas in patriotic health campaigns to dig new ditches and fill old ones, tunnel through mountains to drain waterlogged

land, build storage dams and reclaim wasteland — all directed at changing the breeding environment of snails. Community participation was massive, amounting to 7 680 000 person-days over the period 1974–80, equivalent to about 5000 full-time workers per year. The campaigns were carried out at times of minimal disruption to the annual rural production cycle (Fig. 2).

Economic development and research. The control programme was designed to boost rural production. Transformation of the snail breeding environment was carried out in combination with water conservancy work, reclaiming wasteland, digging ditches, draining marshes, and building dams to store water and breed fish. This eliminated snails, while increasing agricultural production. In the 1970s, a total of 670 000 hectares of potential snail-breeding land

Fig. 2. a) Grass roots education by former Director Bao Zheng Ying. b) Constructing a canal.



were transformed, 8060 hectares of waterlogged land drained, 3055 hectares irrigated, and 1340 hectares of cultivable land created. Animal husbandry was improved by constructing sheds and by preventing disease and introducing excreta control. Many mountain valleys in the endemic areas were transformed into fertile farmland and grain-producing areas. GIPDC combined research with prevention and treatment, laboratory diagnosis with local study, and basic theory with applied techniques. Applied research was a core activity at every stage of the programme: on-the-spot study of geographical, agricultural, behavioural and ecological facets of transmission, and local features of infection and disease reinforced all control activities.

Cost of the Schistosomiasis Control Programme

For the 40-year period, data on the programme's running costs, i.e. variable costs, but not on the fixed costs for the 40-year period, were available. For example, there was no information on the value of buildings and space occupied, which is still difficult to assess today in the public sector. Also excluded were data on total wages, fringe benefits, and government housing for the small core of permanent staff employed at provincial and prefectural levels. However, even with only the variable costs associated with disease control, and county-level wage costs, we were able to identify policy priorities for different periods over the 40-years of the programme's existence. We calculated mean annual costs per county for each historical era for each of seven cost items, expressed as 1991 Chinese *yuan*.

Field operations. The costs of field operations for snail checking and disease detection included transport and fuel, expenditure on office supplies such as stationary and ink, field molluscicides, antigen for skin tests, frames to measure snail areas, sickles and scythes for cutting grass, clothing, drugs, hospital supplies, bedding, nets, wash basins, and scoops. The mean annual expenditure on field operations in each endemic county rose dramatically during the 1970s to twice that of the 1960s, peaked over the period 1976–80 and then decreased in the period 1981–91 (see Fig. 3a). The high priority on environmental changes drove the costs for field operations.

Environmental change. Environmental change involved the construction of irrigation and divergent canals and draining marshland to eradicate snail habitats. The associated costs included purchase of construction material and token food allowances paid for community labour. Other major items in-

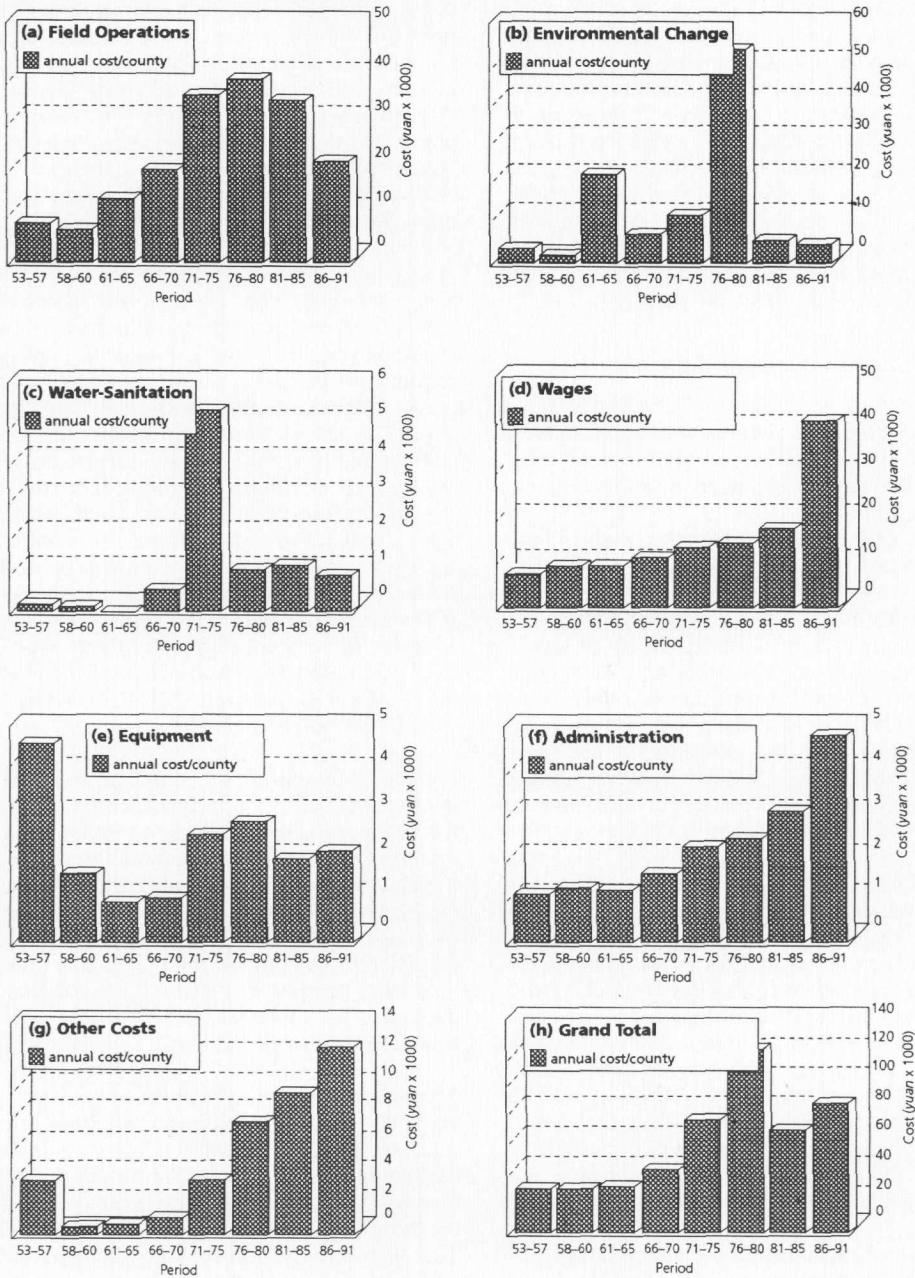
cluded shovels, steel, hammers, nails, and explosives (Fig. 3b). This work began in the first Five-Year Plan period with a small mean annual cost of 7075 *yuan* (US\$ 1179) per county, and the cost peaked in the period 1976–80, when mean annual expenditure increased fivefold over that of the previous 5-year period. The costs included token payments to voluntary village labour. Until 1976 peasants were also paid by work points awarded at rates determined by their production brigades. The real cost of labour for such projects is difficult to determine since work-point bases varied and were not available to us.

Water and sanitation. Expenses for water and sanitation were mainly for construction materials, which were provided free of charge to individuals and communities (Fig. 3c). Improvement of water supplies required wells, pumps and sand filters. Sanitation work focused on the widespread construction of several types of household toilets, especially the composting type that feed into digesters to produce methane for cooking and lighting. The cost of installing toilets was met by individual householders. There was no token payment for labour in these community projects because the villagers worked for themselves. The work began modestly during the 1950s and activities almost ceased over the period 1961–65 when the Chinese economy was in recession. Sanitation work increased during the years of the Cultural Revolution (1966–76), rising dramatically in the period 1971–75.

Wages. Wages were for staff and workers permanently employed by county authorities to implement the schistosomiasis programme under the technical direction of GIPDC and included basic wages, bonuses and supplementary allowances for food, haircuts, retirement funds, and union fees (Fig. 3d). The average annual wage expenditures per county rose slowly from 1953 to the mid-1980s but subsequently increased sharply to 48 036 *yuan* (adjusted) (US\$ 8006) and now account for 50% of the total costs of the maintenance programme.

Equipment. Costs for equipment covered the purchase of large items such as cars, ambulances, tractors, snail-killing machines, X-ray and ultrasound equipment, refrigerators, stethoscopes, electrocardiograms, microscopes, cameras, bicycles, flasks for hatching tests, and sphygmomanometers (Fig. 3e). The largest expenditure was recorded during the first Five-Year Plan (1953–57), with a mean annual county expenditure of 13 860 *yuan* (US\$ 2310). Very low levels were recorded during the 1960s. Equipment expenditure declined in the 1980s because of the success of the snail control programme and the

Fig. 3. Mean annual costs per county (adjusted to 1991 Chinese yuan) of the Schistosomiasis Control Programme in Guangxi, China, 1953–91. a) Field operations. b) Environmental change. c) Water and sanitation. d) Wages. e) Equipment. f) Administration. g) Other costs. h) Total costs.



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reduction in the incidence and prevalence of schistosomiasis.

Administration. Here, the costs involved the daily administration of the control programme and the costs of running the office including postage, telephones, water and electricity, official travel and accommodation in the field, magazines and newspapers, and office supplies (Fig. 3f). There was relatively little fluctuation in administration expenses. Expenditure declined a little over the period 1961–65 to a mean annual total of 2450 *yuan* (US\$ 408). After 1970, the mean annual cost per county rose to about 5000 *yuan* (US\$ 833). Since then, the mean annual cost has risen steadily and during the period 1986–91 peaked at 5545 *yuan* (US\$ 924).

Other costs. Other costs included those for maintenance of staff housing, buildings, cars and other vehicles. Also involved were canteen and kitchen equipment costs for field stations, a category that has increased steadily since 1971 and is now a significant component of the total (Fig. 3g).

The dynamics of the Guangxi schistosomiasis control programme recalled in staff interviews are validated by the historical trends of annual costs by county. The highest costs occurred during the 1976–80 period, with a mean annual total of 280210 *yuan* (US\$ 46702) per county (Fig. 3h). Over the last 10 years, the annual total cost has declined by 33%. Field operations and wages are now the most important costs: historically, environmental change was the most expensive component. To calculate the total costs for the whole Guangxi programme (within the limited cost categories available to us) the mean cost per county was multiplied by the average number of counties worked per year. This was never less than six (until 1965) and was usually 12–14 (after 1970). With 12 as the multiplying factor, the highest annual cost was 1451664 *yuan* (12×120972) (US\$ 241944 in 1991 dollars) for the 1976–80 period; and with 6 as the multiplying factor, the lowest annual costs averaged 171588 *yuan* (US\$ 28598) for the 1953–65 period.

Discussion

The programme to control schistosomiasis in Guangxi and other areas of China began with one of the first recorded instances of both community participation and rapid assessment in public health history. The use of pre-franked envelopes for returning questionnaires in the initial stage of defining the endemic zone represents a historic instance of a mail-based population survey and probably the first ever

use of mail for a snail survey. The programme was conducted at a time when the mail service was poorly developed in China and had to operate over vast distances and poor roads. These pioneering methods got the programme off to a flying start. An early start in Guangxi was very important in controlling schistosomiasis before the population rapidly increased, a demographic effect of public health improvements after Liberation. Population expansion inevitably leads to increased contamination of the environment and boosts and expands transmission of this excreta-driven disease.

The importance of the political economy throughout the programme — sustained support from national and local leaders and creative resourcing — cannot be overstated. Although the programme was at times disrupted by famine, political disturbances and other events it always got back on track and proceeded along lines best described as public health with Chinese characteristics. These characteristics have been a source of fascination to public health advocates for many years and inspired the universal primary health care movement 20 years ago. Wilenski summarized the striking Chinese features of “putting prevention first”: integrating public health into national social culture as a multisectoral political activity; recognizing explicitly that public health is a key input to rural production; redirecting resources to the rural majority; use of the mass line, including decentralization of policy and integrating traditional therapy; and breaking the policy-service monopoly of medical professionals while creating new treatment and prevention cadres for mass work (6).

In China, post-liberation politics often connected directly to public health. Thus Mao Zedong launched the Cultural Revolution in 1965 with his June 26 directive criticizing medical elitism and accusing the public health ministry of urban bias. This was Mao’s reaction to the problems of communes established during the Great Leap Forward (1958–60), including failure to develop universal rural health services integrating traditional practitioners, and the subsequent health sector tilt towards scientific professionals in the period from 1960 to 1965. From 1965 until the 1980s, however, rural cooperative health insurance schemes flourished to cover the masses, served by barefoot doctors skilled in preventing and treating common conditions of local importance by combining traditional and Western methods (“walking on two legs”). In Guangxi, during the period 1970–84, which was crucial to the final eradication of schistosomiasis, barefoot doctors were an essential component of control activities. Subsequently, rural health insurance schemes collapsed all over China after the abolition of communes and the

introduction of agricultural reforms, and barefoot doctors become private practitioners (13–15); by then, however, schistosomiasis had nearly been eradicated in Guangxi.

The mass line approach also was crucial to final success in Guangxi. Schwartz captures Mao Zedong's phenomenological viewpoint with the following quote (12):

"(for) practical work . . . take the ideas of the masses (scattered and unsystematic) and concentrate them (through study). Then go to the masses and propagate them . . . until (they) embrace them as their own . . . translate them into action and test the correctness . . . then once again concentrate ideas from the masses . . ."

Schwartz dates Mao's ideas on the mass line from 1926, and refers also to a speech in 1934 in which he extolled the well-being of the masses and certain methods of work, and to Mao's philosophy that all knowledge derives from social practice. This philosophy of always involving the masses permeated the politics of schistosomiasis and its control in China until the late 1980s. Also schistosomiasis always occupied a high priority on the national agenda because Mao recognized its importance from the start, perhaps reflecting his youthful experience in Hunan, one of the most seriously afflicted provinces.

A Western scientific approach was also employed, however, with an enormous effort being expended on research on the snails, parasite, animal hosts, drugs, and control methods (2, 3, 5, 16). At times this created tension between scientists, doctors, bureaucrats and mass-line nonprofessional political leaders (17), but such problems were rare in Guangxi. GIPDC took theoretical advice from all the national experts, carried out research locally to enhance the impact and quality of control efforts, and followed the mass line to implement the programme. Successful decentralized technical innovation (and stifling central control of scientific theory) was a feature of Chinese science for centuries (18), hence it is not surprising that grass-roots technical innovation was a feature of schistosomiasis control. Another important influence that helped focus innovative Chinese strategies on environmental control methods was advice from Japan (19). An environmental focus matched the historic Chinese preoccupation with hydraulic engineering as the key to rural development (20).

The cost of the Guangxi programme was never excessive. Using a range of 500 000 to one million for the population resident in the endemic areas over the 40-years' activities (21), the annual variable costs of the Guangxi programme was always less than US\$ 0.50 per capita for the population protected.

Uncosted labour inputs were enormous, but these drew on and created community cooperation at a time of national recovery from a disastrous period in Chinese history, and were carefully timed to avoid disruption to agricultural production. The masses were educated, motivated and supervised in culturally appropriate ways and success was a direct consequence of their participation.

Furthermore, the leaders motivated programme staff by paying attention to human relations and teamwork, an obvious feature of the programme even today; and all staff knew the control programme's aim and objectives. Every staff member was consulted, made to feel part of a team, and rewarded for hard work and innovation. Outside of formal meetings, held to confirm decisions already reached in informal discussion, relations between leaders and workers were relaxed and democratic. Information flowed freely in both directions. Staff recalled that this was almost always so, except perhaps during the Cultural Revolution.

Nevertheless, no amount of staff or peasant goodwill would have sufficed had it not been harnessed by skilful management of multisectoral policy, dialogue, and action at all levels in the control programme. Multisectoral collaboration made the programme possible. Early recognition by key leaders of the importance of schistosomiasis control to the rural economy was embedded in the control strategy, and maintained as the principle rationale for the high-profile programme. In other countries cultural and political settings differ, but official recognition of the debilitating influence of endemic schistosomiasis, multisectoral partnership, local scientific appraisal, and long-term commitment are probably essential features of any successful schistosomiasis control programme. These features certainly explain how a very poor region such as Guangxi finally eradicated schistosomiasis and its snail hosts when they were initially spread across such a large area of complex environments — a task that seemed impossible in 1953 when the programme began.

Acknowledgements

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Résumé

Eradication de la schistosomiase dans le Guangxi (Chine). Partie 2: économie politique, stratégie de gestion et coûts, 1953–1992

Ce document présente les résultats d'une étude sur le programme d'éradication de la schistosomiase dans le Guangxi Zhuang sous l'angle de l'économie politique, de la gestion et des coûts, programme qui après 40 ans de lutte (1953–1992) a remporté la victoire sur la maladie. Nous avons analysé toutes les données et mémorandums officiels ayant trait à la politique, à la gestion, à l'aide technique, au financement et à la stratégie de lutte du programme. Nous avons également interrogé de nombreux membres de l'équipe locale ayant participé au programme ces quarante dernières années et obtenu à partir des rapports régionaux annuels les données qui ont permis de déterminer les sept catégories principales de coûts variables.

Dans l'histoire de la santé publique, le début de la lutte contre la schistosomiase dans le Guangxi est l'un des premiers exemples de participation communautaire et d'évaluation rapide, la population ayant été invitée à utiliser des enveloppes préaffranchies pour renvoyer les questionnaires sur la maladie ou à soumettre les gastéropodes suspects trouvés en milieu rural. Cette démarche a permis de délimiter de manière précise et rapide la zone d'endémie. Elle s'inscrivait en outre dans la politique des «masses populaires» de Mao Zedong, selon laquelle les idées et les connaissances des paysans permettaient de mettre en place des services conçus pour eux et par eux, dans le cas présent, le programme de lutte contre la schistosomiase. La prise de conscience par les dirigeants chinois du fardeau économique que constituait la schistosomiase, la priorité accordée de manière inconditionnelle au programme pendant près de quarante ans, l'étude scientifique innovatrice menée au niveau local, la lutte soutenue, sur le plan agricole et environnemental, pour éradiquer les gastéropodes hôtes et stimuler la production locale, et enfin l'éducation des masses et le soutien qu'elles recevaient de la communauté sont autant de facteurs qui expliquent le succès qu'a connu le programme. Les dirigeants locaux motivaient le personnel du programme et chacun en connaissait les objectifs. Le programme a toujours été multisectoriel : les politiques étaient l'œuvre du pouvoir central, mais les stratégies et la collaboration étaient encouragées et récompensées au niveau communautaire. C'est ainsi qu'une région

autonome très pauvre comme le Guangxi a pu éradiquer la schistosomiase, sans pour autant dépenser plus de 0,50 USD par habitant protégé et par an. Il s'agit là d'une victoire d'autant plus remarquable que la maladie et les gastéropodes couvraient une vaste zone aux milieux complexes et qu'à l'époque, les médicaments modernes tels que le praziquantel n'étaient pas disponibles. Les enseignements tirés du Guangxi peuvent être adaptés ailleurs et devraient inciter d'autres régions à lutter contre la schistosomiase endémique à l'aide de méthodes adaptées à leur propre culture et à leur propre géographie.

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March 1956

February 1957

April 1957

February 1958

May 1958

July 1958

October 1958

November 1959

to plan basic eradication of the most harmful diseases including schistosomiasis and plague within 7 years.

Second National Conference on Schistosomiasis Preventive Work convened by the nine-member "Small Group on Prevention of Schistosomiasis". Guangxi Provincial Committee of the CPC establishes Leading Groups for Schistosomiasis Control at the provincial, prefectural, county and township levels throughout the endemic zone. At township level the group included the party secretary or governor, director of the agricultural producer's cooperative as leader, with other members drawn from cultural, educational, health and agriculture committees.

Third National Conference on Schistosomiasis Preventive Work convened by "Small Group on Prevention of Schistosomiasis".

State Council's "Directive on Schistosomiasis Eradication" to set up prevention committees at all levels. Committees to include agriculture, health, water conservancy and irrigation, education and culture; affiliated ministries to cooperate.

Fourth National Conference on Schistosomiasis Preventive Work. Yujiang County in Jiangxi Province eradicates schistosomiasis and is awarded a prize at the Ministry of Health National Technology Conference.

Mao Zedong was so happy about the eradication that he wrote the poem "Farewell to the God of Plague".

Fifth National Conference on Schistosomiasis Preventive Work in Shanghai. Proposal to "eradicate four evils, eliminate four diseases — schistosomiasis, malaria, hookworm, and filariasis". Nine-member Small Group Conference in Shanghai on elimination of diseases. Requirements approved by CPC Central Committee.

Annex

Chronology of schistosomiasis control in China, 1950-89

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| April 1950 | Department of Health directive on prevention of schistosomiasis. Teams of health specialists and students investigate schistosomiasis in all areas. |
| May 1953 | Department of Health directive to Zhejiang Province and other known endemic provinces for prevention of schistosomiasis. |
| November 1955 | Chairman Mao Zedong, at a Hangzhou Conference, called for eradication of schistosomiasis. Nine-member "Small Group on Prevention of Schistosomiasis" set up by CPC Central Committee. |
| December 1955 | First National Schistosomiasis Prevention Conference (Shanghai) convened by "Small Group on Prevention of Schistosomiasis". |
| January 1956 | Ministry of Health convened a national conference on health work |

Eradication of schistosomiasis in Guangxi, China. Part 2

September 1960	Central Patriotic Health Committee, Ministry of Agriculture and Ministry of Health "Notice on strengthening management of human waste disposal, garbage and polluted water, and prevention of schistosomiasis in domestic animals".	January 1970	Central Committee of the CPC issues document (70)2, signed by Mao Zedong reconstituting the Central Group, and describing a plan for large-scale control activities calling for mass participation to shorten the time period needed for eradication.
August 1962	Central Government Schistosomiasis Prevention Nine-member Small Group report "Schistosomiasis Prevention Work in the last Six Years" and "Regulations on Schistosomiasis Prevention Work".	January 1977	CPC Central Committee appointed Peng Chong (Secretary of Shanghai City CPC Committee) to Head the Schistosomiasis Prevention Management, Small Group under Central Government.
February 1963	Central Government's Nine-member Small Group on Prevention of Schistosomiasis report "Conference for Work on Schistosomiasis and Malaria" and "Directive on Strengthening Leadership".	February 1978	CPC Central Committee distributed a "Report of Working Conference on the Situation of Schistosomiasis Prevention of the Southern Provinces, City and Autonomous Region".
December 1963	Ninth National Conference on Schistosomiasis Prevention.	December 1978	Central Government Schistosomiasis Prevention Management, Small Group called for working conference in Shanghai on schistosomiasis prevention. Conference also reinstates the Research Committee on Schistosomiasis Disease.
July 1964	Ministry of Health distributed its <i>Handbook on schistosomiasis prevention</i> .	December 1979	Central Government's Schistosomiasis Prevention Management Small Group held a working conference on schistosomiasis prevention. Guangxi reconstituted its Leading Groups.
March 1965	Small Group on Prevention of Schistosomiasis went to Hangzhou, Wuhan, and Hu Zhao Prefectures to exchange experience.	December 1979	Medical science colleges and Research Institutes of Parasitic Diseases exhibit their research on treatment using a new drug with high safety and efficacy.
June 1965	Tenth National Conference on Schistosomiasis Prevention develop regulations for 15-year programme of preventive work.	February 1980	Central Government's Schistosomiasis Prevention Management, Small Group 1979 working conference requests every area to work hard to finish the task.
October 1965	CPC Central Committee appoints Wei Wen Bo, Secretary of Eastern China Bureau Secretariat, as Head of Schistosomiasis Prevention Management, Small Group; Deputy Head was Qian Xinzong, Minister of Health.	July 1981	Central Government Schistosomiasis Prevention Management, Small Group working conference in Shanghai on basic elimination of schistosomiasis disease in endemic areas.
June 1966	Eleventh National Conference on Schistosomiasis Preventive Work drafted long-term programme of preventive work (1966-80).	December 1981	Jiangsu Province Schistosomiasis Disease Prevention Research Institute won the 1981 Ministry of Health first-class prize of major pharmaceutical and health technological achievement for its "re-
December 1969	CPC Central Committee issued directive to Shanghai City CPC Committee to hold conference on schistosomiasis prevention to re-establish the small management group of southern provinces, city and autonomous region for schistosomiasis prevention, under the central government.		

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- search on whether flow of water from south to north would lead to *Oncomelania* (snails) migrating north".
- April 1982 Central Government Schistosomiasis Prevention Management, Small Group conference on prevention in Hu Zhao Prefecture.
- September 1983 CPC Central Committee rectified membership of both the central and local Schistosomiasis Prevention Management, Small Group.
- February 1984 Central Government Schistosomiasis Prevention Management, Small Group national conference on prevention in Shanghai.
- October 1985 Thirtieth anniversary of Mao's "Must eradicate schistosomiasis disease" and thirtieth anniversary of Central Government's Schistosomiasis Prevention Management, Small Group.
- December 1985 Shanghai and Guangdong declare eradication of schistosomiasis.
- May 1987 Ministry of Health national conference on prevention in Wuhua city, Anhui. Deputy Minister, He Jiasheng, chaired meeting and set up Ministry of Health consultative committee for schistosomiasis specialists.
- October 1987 Ministry of Health distributed "National Programme for Prevention of Schistosomiasis Disease, 1987-1990".
- November 1987 Ministry of Health consultative committee for specialists of schistosomiasis disease held national conference in Wuhan city for the study and health policy for schistosomiasis prevention in lake areas.
- December 1987 Ministry of Health "Report on situation of schistosomiasis preventive work".
- May 1989 Guangxi Autonomous Region achieved eradication criteria for schistosomiasis disease.
- September 1989 Jiang Zemin gave direction to schistosomiasis prevention work in Hubei.
- September 1989 Ministry of Health national conference in Zhenjiang city, Jiangsu Province, on treatment of late-stage schistosomiasis and revised national plan for treatment of the late-stage of the disease.
- December 1989 State Council conference in Nanchang city on schistosomiasis prevention in lake areas of Hunan, Hubei, Jiangxi, Jiangsu and Sichuan Provinces. Secretary-General Jiang Zemin sent a letter and Premier Li Peng wrote verses for the conference. It set up a "Management Small Group for Co-operative Prevention" in five provinces located in lake areas. State Councillor Li Tieying gave the address and urged people to unite once again to bid farewell to the "God of Plague".