



**Vector Biology & Control Project**

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**The Vector Biology  
and Control Project**

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## **The A.I.D. Vector Biology and Control Project**

Malaria and other vector-borne diseases are among the leading causes of death, disability and illness in the developing world. The Vector Biology and Control Project was designed to improve the effectiveness of national efforts to control these diseases.

Medical Service Corporation International (MSCI) of Arlington, Virginia, managed the first phase of the Project under a five-year contract to the Agency for International Development (A.I.D.). In September 1989, after A.I.D. had reviewed proposals from a number of consulting firms, MSCI was awarded another five-year contract to manage the second phase of the VBC Project (VBC II).

MSCI receives technical guidance and support through subcontractual agreements with Harvard and Tulane Universities and the Henry M. Jackson Foundation, and through a special agreement with the Centers for Disease Control (CDC). VBC also has established a consultant network of more than 900 experts in vector-borne disease control.

Since it began in 1985, VBC has conducted more than 200 activities in 37 countries. The Project provides technical assistance in field research, training, disease surveillance and management information systems, program support and evaluation, and information dissemination.

### **Field Research**

VBC conducts applied field research to characterize the ecology of disease transmission and its relationship to practical control operations. The Project has emphasized the development of new control strategies, particularly those that involve community participation. Examples of VBC's work in the field include:

- Designing and evaluating a pilot study of community participation for malaria control on the island of West Timor.
- Assisting USAID/Cairo's Office of Science and Technology in the analysis and design of a comprehensive schistosomiasis research project. Funded by A.I.D. and the Egyptian Ministry of Health (MOH), the 10-year project will support collaborative efforts by Egyptian and U.S. scientists to find more effective tools to control schistosomiasis.
- Planning and organizing pilot studies to test two promising alternative vector control methods in Honduras: Bti, a bacterium that rapidly kills mosquito larvae but does not harm mosquito predators or other organisms, and insecticide-based paint to control Chagas' disease vectors.

- **Supporting onchocerciasis control efforts in West Africa by conducting several studies, including: 1) an assessment of the effectiveness of ivermectin treatment in reducing transmission in the forested and rubber-growing areas of Liberia; 2) a study to determine blindness rates due to onchocerciasis in the forest-savannah ecotone of Ivory Coast and 3) environmental assessments of control efforts in Mali and Guinea.**
- **Developing a protocol for El Salvador's first large-scale source reduction project at the Ticuiziapa estuary. The project consists of a dam and series of channels designed to reduce mosquito breeding sites by improving the flow of water from the western highlands to the sea during the dry season.**

### **Training**

The Project has conducted training programs in medical entomology, alternative control measures and operational research in Bolivia, Kenya, Burma, Sri Lanka, Pakistan, Thailand, Papua New Guinea and Nepal. These programs concentrate on in-country participant training and institutional strengthening. VBC training efforts include:

- **Designing and organizing two practical training courses in medical entomology and vector control for staff members of Burma's Vector-Borne Disease Control Project and one course for Bolivia's vector control staff.**
- **Working with the Pan American Health Organization (PAHO) to conduct a workshop on emergency control of dengue epidemics for participants from 23 Caribbean countries and preparing a training film with the CDC on Aedes mosquito control.**
- **Training Peace Corps volunteers working in Eastern Caribbean in medical entomology, with an emphasis on community-based Aedes aegypti mosquito control.**
- **Working with subcontractor Harvard University on a continuing program of institutional strengthening assistance for the Kenya Medical Research Institute's (KEMRI's) Vector Biology and Control Research Center.**
- **Developing a curriculum and training technical staff members Swaziland's Ministry of Health to identify schistosomiasis and other parasitic diseases.**

## Surveillance and Data Management

VBC develops computerized management information systems that enable programs to target disease control efforts and use limited resources where they are most needed. The focus of the VBC approach is making control programs more cost-effective by limiting data collection to information needed for decision-making. VBC has pursued this objective through the following activities:

- Designing computerized malaria information systems, including databases for epidemiological, entomological and operational data, for malaria control programs in Nepal and Ecuador. The Project also trained control program staff members in computer programming and applications and advised the programs on software and hardware procurement.
- Developing a plan to create a computerized information system for communicable diseases for the Bolivian MOH's Division of Maternal and Child Health. The system will include computerized databases on diarrheal and acute respiratory diseases, malaria, dengue and Chagas' disease.
- Analyzing the Pakistan malaria information system and preparing a plan to convert it to a computerized system.
- Developing a model computer-based Aedes vector surveillance system for Ecuador, which will be made available to other countries where dengue continues to be a threat.

## Program Support and Evaluation

In addition to providing technical assistance to A.I.D. vector-borne disease control programs in many countries, VBC supports child survival initiatives and other A.I.D.-assisted health programs. For example, in Belize, El Salvador, Ghana, Haiti and Malawi, the Project has helped design or evaluate control plans that involved community participation and could be integrated into nations' primary health care (PHC) structures. Examples of vector control and PHC program support include:

- Designing a plan of action for the malaria section of a USAID/Accra child survival initiative in Ghana.
- Evaluating A.I.D.-sponsored projects to control vector-borne diseases in Nepal, Pakistan, Sri Lanka, Indonesia, Swaziland, Zanzibar, Ecuador, the Dominican Republic and Haiti.

- **Developing contingency plans for prevention and control of dengue epidemics in the Dominican Republic and Ecuador and, in conjunction with PAHO, in Bolivia and Paraguay.**
- **Providing detailed assessments to ensure the environmental safety of proposed vector control interventions in Honduras and Pakistan.**
- **Responding to an urgent request from USAID/Colombo to devise a clean-up procedure and analyze options for disposal of malathion waste after a fire broke out in the warehouse where the Sri Lankan malaria control program stored its insecticide.**
- **Helping A.I.D.'s regional bureaus develop vector-borne disease control strategies. VBC is designing a computerized trend analysis of control efforts in the Latin American and Caribbean (LAC) region, which will be used by A.I.D.'s LAC Bureau to devise a regional strategy.**

### **Information Dissemination**

The Project has established a Vector Control Information Center (VCIC), which houses a collection of more than 20,000 references on vector-borne diseases, PHC services, health education and community participation. The VCIC emphasizes collection of literature not readily available through normal information channels, including consultants' field reports, pesticide inventories, localized epidemiological surveys and health education training materials. It uses these resources to provide information to USAID missions, host country institutions, project consultants, collaborating agencies and A.I.D. staff members. Other information dissemination activities include:

- **The VBC seminar series, a regular series of open seminars featuring experts on vector-borne disease control in developing countries.**
- **Establishment of a network of collaborating information distribution centers throughout the developing world.**
- **The Guinea Worm Information Network, a collaborative effort with the Water and Sanitation for Health Project, to provide information about Guinea worm disease (dracunculiasis) to more than 500 participants in 30 countries.**

## VBC Documents

- AR-001** Mid-Term Evaluation of the Project Loan and Grant Agreement Between the Democratic Socialist Republic of Sri Lanka and the United States of America for Malaria Control
- AR-002** Development of a Risk Assessment Model to Identify Areas in Mexico at High Risk of Dengue Epidemics
- AR-005** Trip Report Thailand: Meeting at USAID/ Bangkok Malaria Control Planning, February 16 - March 1, 1986
- AR-011** Zanzibar Malaria Control Project External Review
- AR-012** Haiti Conference on Malaria Strategy
- AR-013** Nepal Multidonor Review for the Malaria Control Program
- AR-014** Evaluation of Operational Research Needs of the Anti-Malaria Program in Thailand, 1986
- AR-015** Report on Malaria Control for the Health Systems Management Project of El Salvador
- AR-020** Adult Anopheline DDT Susceptibility Trials and Associated Entomological Evaluations as Related to Malaria in Bolivia
- AR-022** Evaluation Report: Improved Productivity for Better Health (Belize)
- AR-023** Malaria in Nepal: Observations During a Short-Term Entomological Consultancy
- AR-024** Report on a Visit to Nepal to Evaluate Training and Facility Needs at the Research and Training Centre at Hetauda
- AR-026** Malaria in Nepal: Development of a Detailed Working Plan for Entomological Research in Sindhuli and Kanchanpur Districts

## VBC Documents (continued)

- AR-031** Excerpts from a Health Sector Assessment Prepared for USAID/Guatemala
- AR-033** An Assessment of the Public Health Impact of Projects Being Implemented by Selected U.S. Private Volunteer Organizations in Chad (May 20 - June 17, 1987)
- AR-034** Scope of Work for Project Analysis and Design, Team Schistosomiasis Component, Science and Technology for Development Project USAID/Egypt
- AR-039** Protocol for the Ticuziapa Estero Project: Environmental Management for Malaria Control (El Salvador)
- AR-042** Trip Report Computerization of Malaria Data System/Ecuador (English and Spanish)
- AR-043** Evaluation Report: Malaria Control Project, Ecuador (Project Number 518-0049) (English and Spanish)
- AR-050** Zanzibar Malaria Control Project Review of Anti-Larval Measures in Zanzibar Town: Findings and Recommendations
- AR-051** Survey on Onchocerciasis in Côte d'Ivoire, October 23 - November 27, 1987 (English and French)
- AR-052** Review of Malaria Control Program, Government of Swaziland
- AR-053** Report of the Terminal Evaluation of the Pakistan Malaria Control Project (391-0472), April 4 - May 3, 1987
- AR-054** Final Assessment of Malaria Control, West Timor, Indonesia
- AR-055** Feasibility of Using Community-Based Malaria Control in West Timor, Indonesia

## VBC Documents (continued)

- AR-061** Trip Report: A Visit to USAID/Nepal to Study and Identify Culicine Fauna, November 17 - December 27, 1987
- AR-063** Trip Report Nepal: Malaria Data System, November 6-17, 1987
- AR-066** Environmental Assessment: Insecticide Use in the Malaria Control Component of the Health Systems Support Project (APSISA 519-0308), October 1989
- AR-067** Field Report: Workshop on Integrated Pest Management of Vector Mosquitoes with Emphasis on Urban Settings and Community Participation and Review of Some Vector Control Activities in Lae and Port Moresby, Papua New Guinea
- AR-069** Trip Report: Information Systems Report, Malaria Control Program, Guayaquil, Ecuador, June 13 - July 1, 1988
- AR-070** Trip Report: Health Education/Community Participation in Malaria and Aedes aegypti Control, SNEM, Guayaquil, November 1-25, 1987 (English and Spanish)
- AR-074** Nepal: Malaria Data System Part II (August 3-27, 1988)
- AR-075** Implementation of an Operational Field Trial on Community-Based Malaria Control in West Timor, Indonesia
- AR-086** An External Interim Evaluation of the Health Constraints to Rural Production Project, Cameroon, April 1988
- AR-089** Malaria in Nepal: Interim Summary of Longitudinal Research in Sindhuli and Kanchanpur Districts, April 1988
- AR-091** Contingency Plan for Emergency Management of Dengue and Dengue Hemorrhagic Fever Outbreaks in the Dominican Republic

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## VBC Documents (continued)

- AR-093** Environmental Assessment of Vector Control and Rural Water and Sanitation Activities of the Health Sector II Project, Honduras, June 1988 (English and Spanish)
- AR-099** Environmental Assessment of the Pakistan Malaria Control II Project Extension (No.391-0472)
- AR-100** Schistosomiasis in Swaziland
- AR-103** Mid-Term Evaluation of a Pilot Study of Community Participation for Malaria Control, West Timor, Indonesia
- AR-105** Honduras: Review of a Protocol for the use of Bti for Malaria Control in the Health Sector II Project
- AR-106** Field Report: Assessment of Unmet Needs in the Pakistan Malaria Control Program
- AR-107** Trip Report: The Vector Biology and Control Research Centre, Kisumu, KEMRI, January 11 - February 14, 1989
- AR-108** Nepal: Malaria Data System Part III, January 16 - February 1, 1989
- AR-109** Trip Report Ecuador: Malaria Information System, May 1-5, 1989
- AR-110** Pilot Information System for Communicable Disease (PISCD)/Bolivia
- AR-111** Malaria Control in Zanzibar: Appraisal of Present Condition, Discussion of Alternatives
- AR-115** Japanese Encephalitis in Nepal: Recommendations for Short and Long Term Control
- AR-116** Trip Report Pakistan: Malaria Information System

## VBC Documents (continued)

- AR-120 Honduras: Field Evaluations of Bacillus Thuringiensis var. Israelensis (Bti) Against Anopheles Larvae
- AR-121 Malaria Control in Malawi
- AR-122 Assessment of Vector Control Project, Dominican Republic
- CE-005 Report on the Methodology of Disposal of Malathion Waste (Colombo, Sri Lanka)
- CE-006 Proposal for a Practical Course in Medical Entomology and Vector Control (Burma)
- CE-010 Dracunculiasis in the United Republic of Cameroon I: A Proposal for a National Plan of Action for Dracunculiasis Control and Elimination
- CE-010 Dracunculiasis in the United Republic of Cameroon II: Background/Reference Information
- CE-017 A Preliminary Analysis of Functional Feeding Groups of Stream Macro-invertebrates in the Western Extension Area of the West African Onchocerciasis Control Program
- CE-021 Emergency Control of Aedes-borne Epidemics: Report of Joint PAHO-VBC/USAID Workshop, May 1987 (Barbados)
- CE-024 Report on a Meeting to Plan for Workshops on Insecticide Resistance of Vectors in the Americas
- CE-025 Dracunculiasis in Burkina Faso, Prepared for the Ministry of Health, Government of Burkina Faso, August 1987 (English and French)
- CE-035 Trip Report Thailand: Evaluation of the Potential for Conducting Ivermectin Trials in the Control of Filariasis
- CE-037 Malaria Control in Ghana

## **VBC Documents (cont.)**

- CE-037(A)** Trip Report Ghana: Malaria Control
- PA-022** Investigation on the Use of Insecticide-Based  
Paints for the Control of Triatomine Bugs
- PA-026** Vector Black Fly Survey in the Uniroyal Rubber  
Plantation at the Liberian Agricultural Company
- PA-042** Trip Report Kenya: Institutional Strengthening  
Assistance to KEMRI's Vector Biology and  
Control Research Centre

## **Quarterly Reports**

**Report for the First Quarter (9/1/85 - 11/30/85)**

**Report for the Second Quarter (12/1/85 - 2/28/86)**

**Report for the Third Quarter (3/1/86 - 5/31/86)**

**Report for the Fourth Quarter (6/1/86 - 8/31/86)**

**Report for the Fifth Quarter (9/1/86 - 11/30/86)**

**Report for the Sixth Quarter (12/1/86 - 2/28/87)**

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**Report for the Thirteenth Quarter (9/1/88 - 11/30/88)**

**Report for the Fourteenth Quarter (12/1/88 - 2/28/89)**

**Report for the Fifteenth Quarter (3/1/89 - 5/31/89)**

**Report for the Sixteenth Quarter (6/1/89 - 8/31/89)**

## **Annual Reports**

**September 1, 1985 - August 31, 1986**

## **Annual Work Plans**

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**Copies of VBC documents are available from A.I.D. at the following address:**

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