

THE ASIAN CENTER OF INTERNATIONAL PARASITE CONTROL (ACIPAC): FIVE YEARS OF ACHIEVEMENT

I. INTRODUCTION

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Abstract. ACIPAC has made an effort to promote the concept of the school-based approach to malaria and STH control, mainly through human resource development, which could be eventually extended to any other health promotion program. Implementation of SSPP resulted in the establishment of national policies on parasite control and/or school health in some partner countries. It also provides a good opportunity for the formulation of partnerships among health and education sectors and international partners, although it did cause some problems concerning the enrollment of persons of authority from partner countries, and the staff of JICA resident offices as well. As described in the Joint Evaluation Report, ACIPAC is expected to further contribute to human resource development and to strengthening human resource and information networking at regional and global levels.

INTRODUCTION

The Asian Center of International Parasite Control (ACIPAC), established as a Japan International Cooperation Agency (JICA) project under an agreement between the Governments of the Kingdom of Thailand and Japan, ends its five-year term on 22 March 2005. This is a summary report of its activities carried out during past five years.

HISTORICAL BACKGROUND

Malaria (Fig 1), and some other parasitic diseases such as schistosomiasis, still remain as major health hazards to the health of the people living in tropical developing countries, although many decades have passed since Norman Stoll described such an endemic situation as "this wormy world," in 1947. For example, 200 to 450

million people are infected by malaria every year, and as many as one to three million people reportedly die of this disease (Breman *et al*, 2004). Approximately 200 million persons are estimated to be infected with schistosomiasis, which is endemic in 74 countries, although its mortality decreased decades ago. In addition, there are still countries with areas where 50 to 70% of the population is affected by soil-transmitted helminthiases (STH), such as ascariasis, ancylostomiasis, trichuriasis, etc. As described below, there are also such countries in the Greater Mekong Sub-region (GMS) (Brooker *et al*, 2003).

In the case of Japan, although just after the World War II more than 70% of the people were infected with many varieties of intestinal parasites, the country succeeded in eliminating the major parasitic diseases including malaria, filariasis, schistosomiasis, and STH in the ensuing 30 years. It should be noted that this success story was initiated through a school-based approach as an entry point to the community, and this approach was carried out through triangular cooperation among the governmental and community-based non-governmental organiza-

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tions, and the scientific expert communities.

Based on the Japanese experience, in 1997 and 1998, on the occasion of the G8 countries' summit at Denver and Birmingham, respectively, the then-Prime Minister of Japan, HE Dr Ryutaro Hashimoto, pointed out the importance of parasitic diseases control in the improvement of public health and proposed the necessity of strengthening international cooperation toward global parasite control. Thus, Dr Hashimoto inspired the political leaders attending the summit, especially HE Mr Tony Blair, to give strong support to WHO's Roll Back Malaria (RBM). Since the lack of human resources is one of the major obstacles to overcome these health hazards in most of developing countries, the Government of Japan announced her policy at the Tokyo International Conference on African Development (TICADII), in the fall of 1998, that proposed to establish three centers for research and training: one in Asia, and two in Africa. This action was further strengthened by the Okinawa Infectious Diseases Initiative that was announced at the Kyushu-Okinawa G8 Summit in 2000. In this Initiative, Japan's major efforts for tackling infectious diseases are focused on malaria, parasitic diseases, as well as on HIV/AIDS, tuberculosis, and polio through the promotion of the Hashimoto Initiative and South-South cooperation, which includes promotion of operational

research and evaluation on measures for control of malaria.

Thus, the Asian Center of International Parasite Control (ACIPAC) was established in Bangkok, on 23 March 2000, under the Hashimoto Initiative that is based on an agreement between the Government of the Kingdom of Thailand and the Government of Japan as a technical cooperation project with a region-wide cooperation scheme of the Japan International Cooperation Agency (JICA) in collaboration with the Mahidol University and the Ministry of Public Health, Thailand. Then, two CIPACs were established in Africa: one at the Kenya Medical Research Institute, Kenya, to cover the eastern and southern parts of the continent (the Eastern and Southern Center of International Parasite Control, ESACIPAC), in the year of 2001; and the other at the Noguchi Memorial Institute for Medical Research, University of Ghana, to cover the western part of the continent (the West African Center for International Parasite Control, WACIPAC), in 2004.

Since many parasitic infectious diseases are endemic in tropical developing countries, as mentioned above, mostly due to the people's food habits, lack of safe water, poor sanitation, insufficient infrastructure for proper health services, etc, they have been ignored as the subject of science for a long time from the standpoint of modern medicine (Kawakita, 1977). Investments for research into this field and funds for the control of these diseases have constantly neglected, and these chronic shortages have led to insufficient human resources. This, in turn, has resulted in delayed control measures, creating a repeated vicious cycle. These infectious diseases, including malaria, are called the "great neglected diseases." However, we may say that this expression symbolizes both the gravity of the problems related to the combat against these infectious diseases and the seriousness

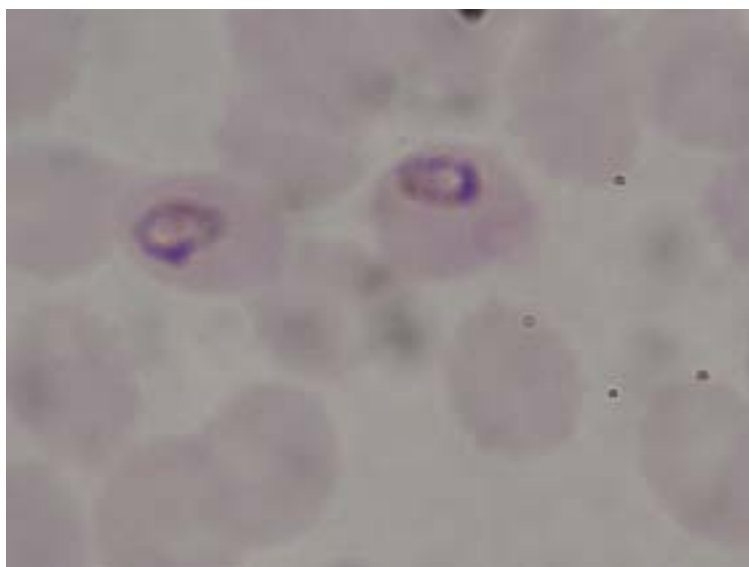


Fig 1—Malaria-infected red blood cells.

of the fact that the biological characteristics of the pathogens are a serious challenge for humanity.

Therefore, it is worth mentioning that the necessity of a "global approach" to reducing, not only new infections, but also those long-existing infections that still remain to be eliminated by man, has finally been pointed out in the mid-1990s by the world political leaders, but not by researchers in life sciences. In fact, the "Initiative on Emerging and Reemerging Infectious Diseases" was taken up as the first item on the agenda as a new area of cooperation between Japan and the United States during the talks at the highest level held between the then-Prime Minister of Japan, Mr Hashimoto, and President Clinton, in Tokyo, in April 1996 (Anonymous, 1996).

This probably became a trigger for the launch of the above-mentioned Hashimoto Initiative, and the Okinawa Infectious Diseases Initiative in Japan. At the same time on a worldwide basis, programs such as WHO's Roll Back Malaria, the Multilateral Initiative on Malaria launched by the US NIH, etc were initiated. Furthermore, the Global Fund, aimed at strengthening measures at the national level on HIV/AIDS, tuberculosis, and malaria, was introduced in the year 2000.

Thus, funds for research and implementation of control measures are now available to a certain extent also in the area of the "neglected" infectious diseases, a field that had been neglected to date. If we look at the current situation in developing countries, however, we may face the reality that in many countries human resources are in extremely short supply for an adequate operation of any available Global Fund and for the implementation of measures to combat infectious diseases at the grass-roots level. Besides, the fundamental policies and strategies regarding infectious disease control at the national level have not been clearly defined. The control programs mapped out by various international organizations and NGOs have been incorporated separately into a vertically divided administrative system. The limited number of staff has been further divided, and this often creates obstacles to the implementation of orga-

nized programs. Although there exists an extremely small number of high-caliber researchers and research institutions, the base of research is limited, and in many cases the results of research do not eventually reach people at the grass-root level.

Therefore, "human resource development," though this may seem simple, involves problems, such as what kind of people should be trained or what parasite control policies should be adopted for staff training, in order to implement parasite control measures at the grass-roots level in the countries of the Great Mekong Sub-region, notably: Cambodia, Lao PDR, Myanmar, and Vietnam, which are ACIPAC partner countries.

Actually, after World War II there was a period during which Japan was also called the "paradise of parasites," and the current situation in developing countries is similar to Japan at that time. Japan acquired experience in that the parasite control measures targeted at schoolchildren had been quite effective for the dissemination of various public health programs to the community. Learning from Japan's experience, ACIPAC decided to organize a training course for program managers geared to the implementation of parasite control measures focused on school health. Taking into consideration the situation of malaria epidemics in this region, ACIPAC decided to actively work on malaria prevention through health education oriented to schoolchildren. In addition, each country should proactively work out adequate control systems, while coordinating the ongoing assistance programs put in place by various organizations and NGOs, and acting in concert with the related organizations.

SETUP OF THE ACIPAC'S APPROACH: WHY DOES THE ACIPAC EMPHASIZE "SCHOOL-BASED" MALARIA AND STH CONTROL?

Mortality due to malaria concentrates in sub-Saharan Africa. The majority of victims are children under-five years of age. So far, the approach to children in their later childhood is considered as secondary, although anemia and its influence on learning performance due to infec-

tions have been pointed out. However, it is not likely that mosquitoes transmitting malaria avoid sucking the blood of schoolchildren. There are children who, in spite of being infected with malaria and having mild symptoms, still attend school. These children harbor the malaria parasite of the afebrile stage (*ie* gametocytes). This suggests that they themselves contribute to a new source of transmission. So, strengthening control measures aimed at these school-aged children should be effective also for preventing malaria transmission to the whole community.

As far as intestinal parasitic infections are concerned, even in a semi-advanced country like Thailand, about 20 to 30% of schoolchildren are afflicted with STH (primarily ancylostomiasis) in the southern region (Anantaphuruti *et al*, 2002). Similarly, 60% of schoolchildren in the mountainous region of the northern provinces are infected with some kinds of intestinal parasitic helminthes (Waikagul *et al*, 2002). In the case of Cambodia, one of the neighboring countries of Thailand, the morbidity for ascariasis is 70%, and 86% for ancylostomiasis. A similar situation regarding STH infections is observed all over the world, including Asia and Africa. This clearly demonstrates the immeasurable impact of STH, not only on the health of the schoolchildren, but also on their intellectual development; such influence demonstrated by a remarkable decline in their learning capacity and in their faculty to memorize. WHO finally launched a policy at the 2001 World Health Assembly according to which, by the year of 2010, at least 75% of the school-aged children should receive antihelmintics regularly and be protected against the damage caused by schistosomiasis and STH. Indeed, infectious diseases such as malaria that are directly linked to death have been the focus of attention from the standpoint of epidemic prevention. The serious impact of chronic health damage caused by STH on the physical and intellectual development of children, and on pregnant women has now been recognized. In addition to the viewpoint from morbidity, it should be noted that these children may be, themselves, a major source of infection in the community. Furthermore, a cross-sectional study conducted in an area of southern Thailand, where hook-

worm infection was the most predominant STH, has revealed that schoolchildren with less knowledge of STH are more likely to get hookworm infection and that boys, who dislike wearing shoes, have higher intensity of the infection than girls (Tomono *et al*, 2003).

Therefore, the development of various health education programs, including education on the prevention of malaria and other infectious diseases combining visible and easy to understand control measures on intestinal parasites, is consistent with the global strategy on parasitic control pursued by international organizations such as WHO, UNICEF, World Bank, etc. Furthermore, although education is not a tool with a directly immediate efficacy such as diagnosis and treatment, its effects can be expected to have long-lasting impact. It is possible to make up for the shortage of manpower in the health sector by mobilizing schoolteachers. It is also possible to develop cooperative relations between different ministries and sectors, such as the Ministry of Health, the Ministry of Education, etc, to eliminate the negative effects of the vertically divided administrative system.

Moreover, what ACIPAC is advocating is not only providing health-care services to schoolchildren (*eg*, administration of anthelmintics, meal supply, vitamin supplements, health checks, etc), but children should also be perceived as our health partners. The messages conveyed through teachers can be relayed to the children, and then to their siblings and friends, in a friendly and easy-to-understand form, through the wisdom and the language of the schoolchildren. They are capable of developing information and education communication tools by themselves. Such materials, prepared by hand, may have a greater impact on their parents than those printed and distributed in large volumes by the authorities. It will also be possible to work jointly with teachers in order to identify the breeding sites of the mosquitoes that transmit malaria and to develop activities having a positive impact on the improvement of the environmental sanitation of communities. In addition, concerning malaria, correct information on protection against this ailment should also lead to the improved care of their siblings aged under five who may be at-

risk. Concerning the significance of school-based malaria prevention among malaria control measures, it will be necessary, first, to survey the actual situation of malaria infection in school-aged children and its impact on morbidity, mortality, and transmission; and second, to carry out detailed operational research on the specific results of this approach in various regions and communities of the Great Mekong Sub-region.

Thus, the school-based approach contains many possibilities, such as the creation of new systems for health education that might be well-adapted to other health programs, for example the improvement of nutrition, control of HIV/AIDS or tuberculosis, etc. The school-based approach may also motivate schoolchildren to participate in health promotion activities with its impact on their community, and provide cost-effective training opportunities for laboratory technicians, schoolteachers, health volunteers, etc.

THE MISSION OF THE ACIPAC AND OUTLINES OF ITS ACTIVITIES DURING PAST FIVE YEARS

Thus, ACIPAC started its activities in 2000 with the mission that had been described in its project design matrix (PDM) as the Overall Goal, saying that "parasite control programs are strengthened by the health human resource development in the Southeast Asia." The PDM was revised, according to a realization of the importance of small-scale pilot projects (SSPP) implemented in partner countries (see below), on the occasion of a visit by the Japanese Monitoring and Mid-term Evaluation Team headed by Professor Tsutomu Takeuchi, in June 2002. Outputs that would be expected from ACIPAC activities were slightly modified and described as follows: (1) the school-based approach advocated by ACIPAC was to be accepted as an effective parasite control measure by the region, of which core countries are Cambodia, Lao PDR, Myanmar, Thailand, and Vietnam (CLMTV); (2) human resources for parasite control in the region were to be trained by ACIPAC in its international training course, incorporating model activities in Thailand; (3) small-scale pilot projects on school-

based malaria and soil-transmitted helminthiasis (STH) prevention and control were to be implemented as a practical training in the field in CLMTV; and (4) ACIPAC would function as a center for human and information network to promote interaction among personnel and agencies in the region. The following section describes the outline of ACIPAC activities carried out during past five years in accordance with these expected outputs. Detailed accounts are reported in subsequent articles.

School-based approach advocated by ACIPAC was accepted as an effective parasite control measure by the region

ACIPAC has been promoting the school-based through every opportunity, such as international training courses, symposia, and workshops. As mentioned above, it is very likely that the ACIPAC school-based approach to parasite control contains a new concept for education in the region. If we intend that children become our "health partners," we should rethink education about health care and hygiene, and switch from one-sided teacher-to-child education to participatory education so as to motivate the children to think and learn by themselves.

As a typical example of advocacy as well as a good opportunity to deepen our understanding of school health, ACIPAC organized an international symposium on school health in March 2003 (Fig 2), in Bangkok, in collaboration with the Partnership for Child Development (PCD) that has been working under the Focusing Resources on Effective School Health (FRESH) framework supported by the World Bank and other international organizations such as WHO, UNESCO, and UNICEF. We emphasized in the symposium that schoolchildren are no longer simply recipients of health services that include deworming, but that they should be considered as our health partners. If health education is implemented properly, schoolchildren can distribute their knowledge on how to prevent malaria and parasites to the community (their siblings, parents and friends); they can do something to improve sanitation in the community.

This concept was also presented by Professor Donald Bundy, a representative of the

World Bank, at the JICA International Symposium on School Health held in late March 2003, in Tokyo. To reach this goal, health education must be changed from a top-down system to a creative system that is friendly to children. Another challenging issue is how to foster an appreciation of the meaning of life among school-children. If children understand that an individual's life is most precious and uniquely individual, they may understand the importance of health in their lives.

Within the framework of ACIPAC's advocacy, the Office of Basic Education Commission (OBEC), the Ministry of Education, Thailand, developed model schools for malaria prevention along the Thai-Myanmar border (Suan Phueng district, Ratchaburi Province), and for STH prevention in Nakhon Si Thammarat Province. Moreover, OBEC prepared new user-friendly textbooks for children and manuals for teachers for the prevention of malaria and intestinal parasitic infections, in collaboration with local teachers. In particular, malaria in Thailand has become a problem along the borders with Myanmar and Cambodia. Former ACIPAC trainees, on the border with Myanmar, prepared new textbooks written in the languages of ethnic minorities. The English versions were distributed to partner countries and international organizations, and, on request, to NGOs as well. In these model areas, schoolchildren also developed IEC materials (posters, advocacy books, etc) by themselves and brought them to their communities for demonstration purposes.

Regarding the effects of ACIPAC's advocacy for school health in partner countries, it should be noted that, in March 2003, the Ministry of Health, Lao PDR declared the National Intestinal Helminth Prevention and Control Policies, in which health education for school-age children was included. Moreover, ACIPAC graduates started school-based control activities for malaria and dengue fever in Lao PDR, demonstrating the potential for expansion of the school-based approach to control other infectious diseases. They also acted at the central level to enhance coordination between the Ministries of Health and Education, thereby successfully moving toward the preparation of a national school



Fig 2—The International Symposium on School Health held during 12-14 March 2003 at the Faculty of Tropical Medicine, Mahidol University, Bangkok, Thailand.

health policy and its implementation guidelines, with support from WHO and UNESCO (Jimba *et al*, 2005). In April 2004, the Cambodian government established the National Task Force for the Control of STH, Schistosomiasis, the Elimination Program of Lymphatic Filariasis, and the Helminthiasis Prevention and Control Policy. Moreover, the National School Health Policy has already been drafted in Cambodia, for which ACIPAC graduates and experts have been employed to improve its contents. Vietnam also pursued this line when holding a national "Meeting on Reviewing Direction on School-based Helminth Control in Vietnam," in March 2003.

These actions in the ACIPAC partner countries indicate that "the school-based approach advocated by ACIPAC has been accepted as an effective measure for parasite control by the region." Indeed, it was agreed at the Workshop on Global Parasite Control Initiative 2004 (Fig 3), which was held in Bangkok under the partnership of health and education ministries, donors, and organizations, including WHO, UNICEF, and SEAMEO TROPMED, that controlling parasitic diseases through school health programs was useful.

Human resources for the parasite control in the region were trained by ACIPAC

Pursuing its overall goal, ACIPAC has held the international training course, School-based



Fig 3—The Workshop on Global Parasite Control Initiative, hosted by ACIPAC and Mahidol University, was held in March 2004.



Fig 4—HE Dr Ryutaro Hashimoto giving a special lecture at the International Training Courses on School-based Malaria and Soil-transmitted Helminthiases Control for Program Managers held at the Faculty of Tropical Medicine, Mahidol University in September 2001.

Malaria and Soil-transmitted Helminthiases Control for Program Managers, four times during past five years. The training curriculum was originally drafted by committee members from related institutions in Thailand (Mahidol University; Department of Communicable Disease Control, Ministry of Public Health; and the Office of Basic Education Commission, Ministry of Education). The

curriculum was further developed by including the recommendations of the partner countries through discussions held at an international workshop, in December 2000.

The training started in September 2001 as a course of twelve weeks, and included the honor of a special lecture of HE Dr Ryutaro Hashimoto (Fig 4). The curriculum has been revised every year in response to evaluation feedback from graduates, and, as a result of such feedback, the last training course, in 2004, was shortened to six weeks. Over the last four years, a total of 111 participants received ACIPAC training. In addition to the trainees from Thailand and the neighboring countries, seven trainees attended from Kenya and Ghana, and four from East Timor, at the request of UNICEF and with the support of the local JICA Office. After completing the course, the trainees were requested to initiate their pilot projects in their respective countries. The pilot projects themselves should be utilized for further development of human resources through in-country training for various health personnel, including laboratory technicians, health workers, teachers, and, in some country, leaders among schoolchildren.

Thus, these training courses have been considered unique in terms of the “follow-up” of

graduates whereby they implement a small-scale pilot project in each partner country. Our graduates are expected to play important roles as trainers in the further development of human resources at national or local levels. Such pilot projects may provide good opportunities to establish close relationships between the health and education sectors in each respective country. A better understanding of how to approach schoolchildren may be obtained from the pilot projects that may be applied and expanded to other areas, in collaboration with other international agencies, if host countries establish their own national policy on parasite control, as mentioned above concerning the experiences gained from Lao PDR.

Small-scale pilot projects on school-based malaria and soil-transmitted helminthiases (STH) prevention and control were implemented as a practical training in the field in CLMTV countries

Small-scale pilot projects (SSPP) were carried out in each of the CLMV countries by graduates of the ACIPAC International Training Course, based on their own proposals, to acquire further experience and management skills for planning and implementing parasite control activities. In addition to the purpose of the pilot projects mentioned above, it should be noted that other health-related activities, such as provision of clean water and latrines, may be incorporated into the SSPP at pilot schools; teachers' manuals, and comic books for schoolchildren may also be developed to facilitate health education. Indeed, these activities were undertaken in Cambodia and Lao PDR since SSPP was introduced in these countries.

Although the details of SSPP will be described separately, characteristic examples of situation-specific activities performed in respective countries were as follows: a model children activity in Cambodia, cost sharing by a community for the construction of a water supply system in Lao PDR, and the broadcasting of radio programs for health education to community people using loudspeakers in Vietnam. The model children activity was one of the main activities at the SSPP site in Cambodia. Model children were selected from those who spoke

clearly from more senior classes, and they received a two-day training on hygienic matters, including the life cycles of malaria and STH, as well as communication methods. They then taught personal hygiene and prevention of parasitic diseases to other children. They made records of personal data and subjects of knowledge transferred. Children also developed IEC materials, such as pictures and stories related to STH and malaria, which were used for delivering health messages to community. In Lao PDR, the communities of the pilot projects contributed 43.6% of the total budget necessary for the construction of water supply systems for schools. Another example demonstrating the dissemination of knowledge and practices related to the prevention of STH from school to community was observed in Vietnam using a public address system. A package containing IEC materials, together with materials for playing games, was developed and distributed to schools on a nation-wide scale by the Ministry of Education, Vietnam. In these countries, KAP (knowledge, attitudes, and practices) surveys among schoolchildren disclosed significant changes in their behavior after SSPP implementation, if compared with the results of baseline surveys carried out before starting the SSPP.

HUMAN RESOURCES AND INFORMATION NETWORKING

By implementing a variety of activities and utilizing meetings with those enrolled in school health and parasite control, ACIPAC has been making efforts to establish and strengthen human resources and information networks. First, the homepage of the ACIPAC project was established in January 2001 and linked to the website of the Japanese Society of Parasitology (JSP) (<http://jsp.tm.nagasaki-u.ac.jp/~parasite/>). However, the renewal and maintenance of the homepage were not easy tasks because of some mechanical troubles and lack of human resources, including the webmaster. Until recently, such situations were improved by the effort of Japanese experts. In addition, there were considerable IT disparities within this region; in some partner countries, computers and internet

services are still less available if compared with Thailand. Therefore, ACIPAC has issued newsletters (Mekong Parasite News), in addition to mail magazines, and distributed them through the relevant authorities in the partner countries.

Aside from communication with both health and education sectors in respective countries, the coordination of partnerships with other international agencies at the global and regional levels has been one of the most important tasks of the three centers (CIPACs) established under the Hashimoto Initiative. At the regional level, ACIPAC has been working closely with other organizations and agencies, such as WHO (WPRO and SEARO), the European Commission, UNICEF, UNESCO, and SEAMEO TROPED, in supporting various activities concerned with the establishment of national programs for school-based parasite control projects in ACIPAC partner countries of the Greater Mekong Sub-region. In addition, ACIPAC has supported participants from its partner countries to attend the WHO/SEAMEO TROPED Training Course for the Mekong Filariasis Mapping, in February 2001, and an international symposium on vivax malaria held in Bangkok by the Multilateral Initiative on Malaria (MIM, 2002). Moreover, an ACIPAC International Symposium on School Health was held in March 2003 as a joint collaboration with the Partnership for Child Development (PCD) to share experiences with school-health activities, since PCD has been working within the Focusing Resources on Effective School Health (FRESH) framework supported by the World Bank and other international organizations such as WHO, UNESCO, and UNICEF.

It should be noted here that ACIPAC training courses have been supported through lecturers being sent by WPRO, SEARO, UNICEF, and the Kenan Institute Asia; UNICEF also sent its own staff member from Lao PDR as an observer to a course, and sponsored 4 trainees from Timor L'este in collaboration with the JICA representative office there. Concerning further development of ACIPAC training courses, a joint curriculum development meeting was held on 22 June 2004 with the participation of the above-mentioned organizations, and the SEAMEO TROPED Network that came to a conclusion

that ACIPAC training courses should be further developed with further expansion in partner countries. Another example of one of ACIPAC's roles in the international partnership was joining a UNICEF-proposed STH-mapping project for the Great Mekong Sub-region, in collaboration with WHO, SEAMEO TROPED, and Oxford University (Brooker *et al*, 2003).

Another aspect has been the linkage of ACIPAC with other school-health or parasites-related JICA projects at the country level. In Lao PDR, a JICA technical cooperation project, KIDSMILE, was recently initiated with the aim of supporting the ACIPAC pilot project, in collaboration with ACIPAC partners in Lao PDR. Thus, partnership workshops on health-promoting schools or school-based parasite control programs were jointly organized by the Government of Lao PDR, WHO, JICA/KIDSMILE and ACIPAC, in Vientiane, in 2003 and 2004. This kind of workshop is to be held once a year, under the initiative of the Government of Lao PDR that has established the National Task Force for health-promoting schools and STH control, in collaboration with WHO, UNICEF, WFP, JICA (ACIPAC and KIDSMILE), and JADDO (an NGO).

At the global level, ACIPAC has linkages with the other two CIPACs: ESACIPAC in Kenya, and WACIPAC in Ghana. These three centers have already been exchanging trainees and lecturers for their respective training courses, as well as participants for international meetings, whenever one of the three CIPACs was the host. A highlight for ACIPAC in networking at the global level was, in order to strengthen international partnerships, ACIPAC and Mahidol University jointly hosted a Workshop on the Global Parasite Control Initiative, in Bangkok, in March 2004, together with WHO (HQ/WPRO/SEARO), JICA, JICWELS, and the Governments of Thailand and Japan. Future directions of ACIPAC were also discussed, based on reports from partner countries, in relation to ACIPAC's small-scale pilot projects. Among the participants of the workshop were HE Dr Ryutaro Hashimoto, and Dr Shigeru Omi, Director of WPRO. Through two days of discussion, the workshop concluded: (1) a school health-based approach was useful, in principle, for parasitic disease control; (2) to pro-

mote nationwide expansion of activities related to parasite control and school health, further steps should be considered for the establishment of national policies for the coordination of the education and health sectors, this being supported by coordination among international partners with meetings held at the respective national levels to synchronize activities related to school health and parasite control. In addition, a matrix was created with the aim of starting dialogues among countries and partners concerning their major roles and activities in respective countries. In this workshop, ACIPAC was acknowledged to have played an important role in human resources development in Asia and, for the further development of ACIPAC, partners' support was recommended in terms of curriculum coordination, provision of lecturers, and sending participants to ACIPAC training courses.

Quite recently, ACIPAC received acknowledgement from Prof Donald Bundy, Acting Director, HDNED, and Lead Specialist, School Health and Nutrition, the World Bank, saying (Bundy D, personal communication):

As you are aware, the World Bank is giving much greater emphasis to the health and development of children, including schoolchildren, reflecting the demonstrated importance of good health and nutrition in childhood for achieving Education for All and the MDGs. Of course, the best example of work in this area is the way in which school health programs in Japan after the Second World War so demonstrably contributed to the subsequent development of Japan and the Japanese economy. The capacity development achieved by ACIPAC in the Mekong Delta countries has provided an excellent starting point for school health and nutrition programs and we are exploring options for strengthened action in these countries, especially Cambodia, Lao PDR and Vietnam. As an indication of this, the World Bank Director of Human Development for Southeast Asia and the Pacific participated in the recent workshop in Thailand that you organized on this topic. We are particularly keen to explore stronger linkages with JICA in this context. In my glo-

bal role, I have the opportunity to collaborate also with the Japanese training programs in East and West Africa, where there are also processes in place to explore closer linkages with JICA at the operational level. The work of ACIPAC in Thailand is a model for these activities, and has provided a clear example of best practice.

Besides the exchange of lecturers and participants among the three CIPACs, it should be noted on a global level of human networks, Mahidol University and ACIPAC twice received participants from the Tokyo Workshop on Parasite Control in Latin America and Caribbean, in 2003 and 2004. The participants visited the Rajanagarindra Tropical Disease International Center, a field station of the Faculty of Tropical Medicine, and ACIPAC/OBEC model schools to observe the reality of health education for malaria prevention in Suan Phueng district, Ratchaburi Province (a Thai-Myanmar border area). Kobayashi noted, "As an outcome of the workshop, the participants recognized the necessity of making some action plan for parasite control and organizing international network among Latin America and Caribbean countries as well" (Kobayashi A, personal communication).

EVALUATION OF THE ACIPAC PROJECT

Prior to the end of the ACIPAC project, JICA dispatched a terminal evaluation team, from 7 November to 13 November 2004, to evaluate the implementation and achievements of the Project. The team, headed by Dr Akira Hashizume, analyzed and jointly discussed with Thai authorities the achievements of the Project in terms of relevance, effectiveness, efficacy, impact, sustainability, and possible future directions. Results of their careful studies and discussions were summarized in the following sections. Details of the Joint Evaluation Report are attached. The following excerpts: Conclusion, Recommendations, Lessons Learned, and Summary are selected from the minutes of the meeting between the Japanese Evaluation Team and the authorities concerned of the Government of the Kingdom of Thailand concerning the ACIPAC Project.

CONCLUSIONS

The Project has significantly realized four different outputs and achieved the Project Purpose. However, some major tasks remained unfinished, reflecting the more detailed needs expressed by those concerned. One of the major unfinished tasks was the provision of a training course to meet the different types of needs for human resource development. Another major unfinished responsibility was to strengthen networking among the partner countries and donors, specifically for mainstreaming the school-based approach in policy formulation. Furthermore, information sharing and partnership formation for human resource development among donors and partner countries need further attention. The possibility of the subsequent cooperation of JICA could be considered because ACIPAC is likely to have more tasks that can possibly meet a variety of the needs expressed by those concerned. Mahidol University still needs support for some areas of the training course, and for coordination activities among the partner countries and donors.

RECOMMENDATIONS

The recommendations are summarized as follows:

1. ACIPAC should confirm the achievements and implementation processes, through evaluation of the SSPP, and summarize them as case studies or reference books for dissemination to enable those interested in school health and parasite control to utilize the experience of the SSPP.

2. Further efforts should be made to improve the curriculum, contents, and administration of the international training course to meet the wide range of need; there were many suggestions from graduates, partner countries, and donors to improve the course, such as organizing the course separately for those with different levels of knowledge and skills, inviting trainees from other countries, or organizing in-country training. If the training course is to be continued, such further efforts should be made to meet these needs.

3. The establishment of a system to sustain and strengthen the human resource and information networks should involve the staff in charge of the networks to sustain the activities. The Japanese experts should transfer necessary knowledge and skills to the newly assigned staff. In addition, the IT committee should be reactivated to identify what should be done. Follow-up activities in each country should be explored as well.

4. The implementation of every measure to increase sustainability should be explored by approaching a variety of funding and technical agencies (eg Asian Development Bank, WHO, UNICEF, and the SEAMEO-TROPED Network).

LESSONS LEARNED

The lessons learned are as follows:

1. Intensive communication and the resulting mutual understanding among stakeholders, especially with JICA headquarters, resident offices, the counterpart authorities, and the experts concerned at the planning and implementation stages, should be done in a region-wide technical cooperation project. A lack of such communication and understanding could also reduce the sense of ownership of the counterpart organizations.

2. The combination of the Japanese and Thai experiences with school-based parasite control was more useful than the application of the Japanese experience alone to be introduced to the partner countries. However, at the same time, this approach needs to be carefully adjusted to the context of each country.

3. Concerning the appropriate selection of the method to disseminate information to different target group, ACIPAC has made an effort to disseminate information through the information network, but encountered problems in reaching the target group, such as graduates of the courses. Appropriate methods should be considered and implemented by considering the circumstances of each target group.

4. Detailed information about an appropriate procedure for selecting candidates for the training course, including proper criteria, should

be conveyed to the organizations concerned from the initial stage of the project.

5. ACIPAC has covered a wide range of activities, including, for example, the coordination between the Ministry of Education and the Ministry of Health of the Lao PDR in the formulation of a national task force and policy. It could lead to a request by the Lao side to second a Japanese expert on school health. This experience of developing towards bilateral cooperation, based on the output of a region-wide technical cooperation project, should be shared and applied to other similar projects.

In response to the recommendation described above, ACIPAC has drafted several possible international and in-country training courses so as to reflect a variety of needs for human resource development. In addition, a new committee has been appointed to work towards the future establishment of human resource and information networking. The implementation of possible training courses and the means to establish networking in this region will be essential topics for discussion on future activities during the ACIPAC Final Symposium to be held on 27-28 March 2005.

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