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**COLLABORATION FOR HEALTH AND EDUCATION**

**An Examination of Organizational Issues and Programs**

**Project ABEL 2**

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# Bringing Together Health and Education For School-Age Children

## Introduction

The concept of universal primary education has been widely accepted - all children have a right to be educated. All children also have a right to be healthy, and this according to Novella, et al,<sup>1</sup> at a minimum, means that decision makers should promote optimum use of available and preventive measures, such as immunization, prevention of injuries, early identification of disease and disability, and the prompt provision of treatment when needed. UNICEF mirrors this view by stating that the minimum school health package should encompass information and skills, a healthy environment, medical and related services, nutrition and appropriate policies.<sup>2</sup> In practice, though, access to health care in developing countries is far from universal, even at the most basic, preventive level. Financial, technical and geographic constraints limit the ability of health sector professionals to reach all the children in need of care, which suggests that alternative strategies for provision are needed. One approach to child health being explored by governments, donor agencies and other development organizations is the delivery of health services in schools through interagency collaboration.

Though there has recently been considerable discussion about the need for inter-sectoral collaboration, little attention has been focused on the political and organizational considerations in adopting such a model. Many evaluative studies have focused on either the nutritional outcomes or the educational outcomes. This is obviously very important, but more detailed knowledge about the organization and incentive structures within local institutions is desirable. Is it possible for the health and education sectors to work together to achieve common and related goals? What makes a program successful or unsuccessful? What are the institutional elements of such collaborative initiatives? What are the structural barriers preventing effective collaboration? What can governments do to ensure that the provision of health services to school-aged children is effective and sustainable? This paper looks at these questions and identifies the factors critical to the successful implementation of integrated and interagency programs. It also analyzes the organizational and institutional barriers to collaboration and some possible ways of overcoming them. Lastly, it provides descriptions of some school-health programs undertaken in developing countries.

School-based programs do exist, but in-depth studies pertaining to the institutional aspects of health care provision through schools are scarce,<sup>3</sup> especially in developing countries. As Moulton observes, "Most researchers and practitioners agree on the need for the education sector to cooperate with the health sector in delivering education and services, but the best strategies for cooperation are only beginning to be tested."<sup>4</sup> As governments begin to ask *what* can be done, it is also important to question *how* it can be done.

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<sup>1</sup> Novella, et al, 1992.

<sup>2</sup> Dick, Bruce. "Outlining the Minimum School Health Package,"(pp.62-64) in UNICEF, 1995.

<sup>3</sup> Personal communication.

<sup>4</sup> Moulton, 1996.

## **The rising concern for school-aged children**

During the seventies and early eighties, the school-based approach was not uncommon. However, the attention of donor and development agencies turned to issues of child survival as the estimates of the number of children dying from hunger, malnutrition and disease during the early years of childhood climbed alarmingly higher. Child survival initiatives focused on keeping children alive and helping them through the early years of life - i.e. up to age five.<sup>5</sup> These programs have been considered largely effective; more children are getting through the critical period from birth to age five and going on to primary schools. Today the survival rate is around 90 percent among young children.<sup>6</sup>

But despite these gains for young children, these changes were not sufficient to significantly affect the overall rate of child mortality and morbidity, leading governments and development organizations alike to question the reasons behind the still high numbers of children dying and becoming ill, and to also ask why there are still so many children not achieving in school, despite the expansion of universal primary education. Health programs had answered the needs of infants and young children, but it appeared that once in school, these children's health needs were virtually ignored and forgotten. Furthermore, the numbers of children in schools suffering from short-term hunger and nutrition related illnesses were in many cases just as high as among those in the pre-school years. The issue now is not just of child survival but also of child quality. We want children to survive, but we also want them to be able to live. We want to ensure that children have fulfilling lives as productive members of society.

### *Health, nutrition and learning*

The school-aged children in developing countries suffer from a wide range of health-related problems, including: intestinal parasites, short-term hunger, iron deficiency anemia, protein-energy malnutrition, vitamin A deficiency, and visual impairment. The effects of these problems on children's ability to learn in school is well-documented. Numerous studies<sup>7</sup> have, over the years, shown the association between health and cognitive and educational development, and although the causal relationship between health and educational achievement are, in the main, inconclusive, most studies do not deny that there is an association between a child's health and nutritional status and how well he or she does in school. Beryl Levinger's<sup>8</sup> research, for example, reported findings that children deficient in nutrients have retarded growth; retarded mental and motor development; higher levels of fearfulness and inattentiveness; decreased social responsiveness; and diminished abilities to engage in conceptual learning. They also tend to enter school at a later age and have lower levels of concentration. This leads to lower efficiency and effectiveness, and raises questions of equity.

Other studies, while recognizing the influence of health and nutrition, emphasize the importance of environmental factors, such as family and community life, on educational achievement<sup>9</sup>. These studies posit that improving the health of a child has little or no impact on that child's

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<sup>5</sup> Colletta et al, 1996; Development Fund for Africa, 1989; UNICEF, 1989.

<sup>6</sup> Colletta et al, 1996.

<sup>7</sup> Pollit, 1984; UNESCO, 1989; Berhman & Lavy, 1994; Glewwe & Jacoby, 1993; UNICEF, 1986; Sigman et al, 1989; Van Heerden, 1984; The World Bank, 1994.

<sup>8</sup> Levinger, 1989, 1994.

<sup>9</sup> Carson & Greeley, 1988; Negussie, 1990; Sigman et al, 1989;.

education achievement if his or her family life remains unstable, or if the community in which he/she lives places little value on schooling or if the school is in itself an unhealthy, unattractive place. It is also believed by some that the ill effects mitigated by early malnutrition can be overcome as a child grows older, provided that he/she receives adequate social and emotional stimulation and a fairly adequate diet.<sup>10</sup> Early debilitation does not have to be permanent, which suggests that targeting school children makes even more sense. If there is a chance for a child to overcome the ill effects of early malnutrition and sickness, then ensuring a positive school experience is all the more crucial.

### *Vulnerable children*

Frequently the children most vulnerable to illness and malnutrition are those coming from society's poorest and most disadvantaged groups. For poor families, the opportunity costs of sending their children to school are too great. Getting health care from the nearest clinic may mean an additional financial burden or a long trip on foot if there is not a clinic nearby, which in turn might mean a day's wages lost for either the child or his parents. Already disadvantaged socio-economically, these children are further hindered in their development due to the effects of hunger, sickness and the unavailability of good medical care. In a self-perpetuating cycle, it children of poor families are often prevented from getting an education because they are poor, and they remain poor and unhealthy because they are not well-educated. Eventually, they grow up to have children of their own who learn the unhealthy habits passed down from their parents. Subsequently, they, too, fail to achieve in schools. Many drop out after only a couple of years, or what little they do learn in school is soon neutralized due to frequent absenteeism. In advocating a school-based approach, it is important to consider these school-aged children who may not actually be in school.

Girls, too, are vulnerable to nutritional; health and educational risks. Overall they receive less education than boys for a number of reasons. If forced to decide, families usually prefer to send their sons instead of their daughters to school. Girls also generally miss more days of school for they are often kept home to mind younger siblings or to work during harvest season. In cultures where boys and men are fed before girls and women, girls may receive the less nutritious left-overs as well as smaller quantities of food. The physical demands are generally greater for girls, but cultural norms and socio-economic constraints may mean they have less access to both education and health care. As adolescent girls' bodies change, food and good nutrition and health education become even more important. For pregnant or menstruating adolescents this could have serious implications for the girls themselves and for their unborn children.

### **The benefits of good health**

Though health and education sectors have often ignored or been unaware of the link between a child's health and his/her educational achievement, evidence tells us that children benefit in many ways from improved health. For example<sup>11</sup>:

- children who are healthy stay in school longer and are able to learn more;
- girls whose good health enable them to stay in school longer tend to delay childbearing, which in the end means a lower overall birth rate, better outcomes for newborns and for their

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<sup>10</sup> Van Heerden, 1984

<sup>11</sup> Del Rosso & Marek, 1996.

mothers, and better child health resulting from the mother's health and more investment per child;<sup>12</sup>

- children who are healthy miss fewer days of school, repeat less and finish more years of schooling; sometimes the reason for low school achievement is simply due to poor attendance - i.e., children simply are not in the schools and therefore cannot learn;
- the existence of school feeding programs may encourage parents to send children to school, reducing absenteeism and attrition, particularly among girls.

Health/nutrition interventions which are believed to affect learning include:<sup>13</sup>

- anthelmintic interventions to rid children of parasitic infections which can lead to malnutrition and weakened immune systems;
- family life education programs that enable children to make positive choices for themselves and eventually their children;
- family planning;
- immunization against diseases such as cholera and malaria;
- protein-energy malnutrition alleviation;
- micro-nutrient deficiency alleviation;
- school feeding programs that alleviate hunger, improve nutrition and increase school attendance;
- school health education programs that help children see cause-effect relationship in health issues and view health in the context of every day life;
- school health services which enable children to receive attention for immediate needs; and
- improvement of the school environment in order to make school a safe, pleasant place to gather and learn.

These interventions are simple and focused on prevention, and they can all be delivered through school-based programs.<sup>14</sup> However, they can only be effectively implemented if health and education personnel come together in a spirit of collaboration and cooperation.

### **The case for interagency collaboration for school-based health**

Traditionally, the provision of health services has been the responsibility of the Ministry of Health while education has been the domain of the Ministry of Education. While this division of labor may have seemed logical before, the myriad of problems faced by children in both developed and developing countries suggests that there is a need for an alternative, more holistic approach that addresses the four "Domains of Health"<sup>15</sup> - physical, psychological, social, and personal. A school boy suffering from hunger is unable to concentrate on classroom lessons, and a young girl stricken with malaria is physically unable to attend school for a long period of time. Children who survive on insufficient nutrients can lose the ability to see and therefore learn. "A child must be physically and emotionally healthy in order to learn, and a child and the child's family must be educated in order to stay healthy."<sup>16</sup>

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<sup>12</sup> Levine, 1980; Subbarao & Raney, 1993

<sup>13</sup> UNESCO, 1989.

<sup>14</sup> UNESCO. 1989.

<sup>15</sup> Perry, undated.

<sup>16</sup> Novella, et al. 1992.

A UNESCO report in 1989 stated: "School-based nutrition and health interventions to improve the primary school performance could have significant educational results. It should also be recognized that there will be additional benefits to improving the nutrition and health of school children. Better nutritional health status of school children will improve the quality of life and well-being of millions of human beings in their own right. School children who are healthy, have adequate energy and feel well, are likely to be happier, better adjusted, stronger, more productive and, in general, better human beings while they are in school [...] Improving the nutrition and health of primary school children will have immediate benefits for families and their communities."<sup>17</sup> In 1995, among the key program principles cited by the UNICEF Fourth Technical Group Meeting was the need for intersectoral collaboration. Dick<sup>18</sup> asserts that "In few programming areas is the need for 'intersectoral collaboration' more important than in SBIs [School-Based Initiatives][...] Collaboration will need to be nurtured at least between the Ministry of Health and the Ministry of Education, and certain policies will need to be consistent in both sectors. The ministry responsible for implementation (MOE) is likely to be different from the ministry responsible for technical support and health policy formulation (MOH)." The involvement of other ministries is also suggested.

Interagency collaboration aims to address children's problems in a comprehensive, holistic manner so that children can learn. This is done through the provision of health education, the provision of health and nutrition treatments, and through the creation of a safe, healthy environment where children can learn and grow. In an integrated services approach, services are provided to children through collaboration among schools and health care providers. Schools become one of the central participants in planning and governing the collaborative effort<sup>19</sup>, and services are provided at, or coordinated by personnel located at, the school or a site near the school. Because school personnel interact with children on a daily basis, they are the most obvious group to be able to identify and monitor children with health needs.

Utilizing schools as treatment sites means that health professionals and teachers can work together in addressing children's problems. Schools become centers of support for families and their children; they also become active participants in monitoring children's physical and mental health and in counseling families and their children. Health education is not a new idea. In the past health education programs have been organized by community organizations, health agencies, non-governmental groups and schools. However, there are few examples of cases when these different groups, and in particular the education and health sectors, have come together as equal partners to address issues of children's physical and mental development.

There are several advantages to using schools for health service delivery:

1. The interventions delivered through schools are usually low cost but effective.
2. Students are easily accessible and, since most children attend school at some point, coverage is wider.
3. Teachers, who interact with students daily, can monitor the health/nutritional status of their students and make appropriate referrals when needed with little extra effort or time.
4. The methods often used are more participatory in nature and has the potential to reach family members and the wider community (e.g., child-to-child, school health clubs).

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<sup>17</sup> Unesco. 1989.

<sup>18</sup> Dick, Bruce, UNICEF Fourth Technical Support Group Meeting, 1995.

<sup>19</sup> The Future of Children, 1992.

5. The schools may provide a less intimidating environment since it is an important part of the community. Parents may be more likely to attend to the health/nutritional needs of their children if they are able to deal with people they know and trust, and if they know services are free.

According to Melaville et al,<sup>20</sup> collaboration with systems includes three basic actors -- schools, health services and social services -- the level of comprehensiveness varying from school to school. The presence of an integrated service model makes possible:

- easy access to a wide array of prevention, treatment, and support services, no matter who provides the services;
- techniques to ensure that appropriate services are received and are adjusted to meet the changing needs of children;
- a focus on the whole child; and
- an emphasis on improved outcomes for children and families, based upon realistic but high expectations for achievement.

#### *School-based clinics*

In the US, more and more schools are establishing clinics in schools or near schools. These clinics provide a variety of services ranging from first aid to mental health counseling to sex education. School-based clinics allow schools to create a hub of support for school children as well as their families.<sup>21</sup>

The school-based clinic model, however, suggests that the burden of responsibility rests with the health sector. The participation of the school does not go far beyond providing a space for health services and making a financial contribution to the effort. In a truly integrated system schools could go the extra step to make health part of every day school life, complementing the efforts of school health workers. School administrators and teachers could emphasize the importance of a healthy, safe environment by undertaking school improvement projects and formulating school environmental standards. Health and nutrition issues could be integrated into curricula of courses such as biology, sex education, home economics, and agriculture, which are some of the more obvious choices at the middle and secondary levels. Primary level reading and math lessons could integrate basic health and nutrition topics. Teachers and health workers could convene regularly to discuss topics needing special attention. Extra-curricular activities, too, can be used to promote healthy behaviour among students and to help them become more aware of health issues. With the commitment of school staff, health and nutrition can become more than just a small add-on component to the school day.

#### **Elements of successful programs**

A recent study of the Harvard Institute for International Development (HIID) on partnerships in education<sup>22</sup> provided details based on US experiences in this area. The nature of collaboration and the services provided to children are generally much more comprehensive, but many of the

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<sup>20</sup> Melaville et al, 1993.

<sup>21</sup> Future of Children, 1992; US GAO, 1994; Brindis & Chang, 1994.

<sup>22</sup> Burchfield & Carpenter, 1996.

factors related to the success of collaborative initiatives here may also be important for developing country conditions. Among those factors identified as leading to success are:

- Joint planning and decision-making between sectors and between levels;
- Flexible budgets and funding streams that allow for activities that cross traditional sectoral boundaries;
- Information systems that allow for sharing of data;
- Coordination between agencies on activities ranging from logistics to strategic planning;
- Properly trained staff who have the technical knowledge to deliver a variety of health services;
- Flexibility in job descriptions for teachers and health workers;
- Accountability and rewards systems emphasizing positive outcomes;
- Inclusion of parents and community in the planning and implementation phases;
- A family-oriented, child-centered approach that addresses the in-school and out-of-school influences on a child's physical and emotional development;
- Comprehensive in coverage through the integration of different interventions;
- Decentralized governance that allows for local decision making and priority setting; and
- Prevention-oriented rather than curative

These success factors are essentially identical to those cited by agencies and program personnel working on developing country activities. Nevertheless, they are more often than not missing in many developing countries, if indeed collaboration exists at all. Del Rosso and Marek report that the lack of collaboration between these two sectors - health and education - has been one of the major stumbling blocks in implementing school health programs. For example, in Mozambique and Burkina Faso, education projects stalled because the two sectors were not cooperating.<sup>23</sup>

The Oxford-based Partnership for Child Development<sup>24</sup> has developed a model for school-based health interventions which is considered one of the most successful. Some of the reasons it is considered to be so effective are:

- its focus on the school-aged child;
- the child-centered approach which looks at the whole child in the context of his environment;
- the role of the education sector as the health implementor since there are more schools than health centers;
- the development of new partnerships within the local and national and international community; and
- the emphasis on research and control.

### **Barriers to collaboration for school-based programs**

The World Bank<sup>25</sup> advocates school-based treatment of child health problems because it is seen as a cost effective approach that allows for wider access to children. It is felt that targeting

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<sup>23</sup> Del Rosso & Marek, 1996.

<sup>24</sup> Del Rosso & Marek, 1996; Watson, 1996; USAID/Bureau for Africa, 1996. Adjei, 1996.

<sup>25</sup> Del Rosso & Marek, 1996.

school children is especially cost effective<sup>26</sup> because in most communities children are the ones most at risk and the school setting makes them readily accessible for intervention.

Schools are a logical point of entry, and support for the school-based approach is growing. However, it should be kept in mind that not all programs are successful ones. A number of structural barriers prevent the effective implementation of programs. Among them are:

1. *the lack of political support at the local, district/regional and national levels* - Without commitment from government all levels, priorities are unfocused and funding can be inconsistent and/or insufficient. Also, conflicting priorities and lack of coordination between levels could lead to program duplication or program stagnation. Most often the impetus for school health programs comes from bi-lateral and multi-lateral agencies.
2. *the lack of teacher training and support* - Teachers are frequently the primary implementors of school health services and education, but they often lack the technical training and additional incentives (flexible scheduling, additional compensation) that would ensure their effectiveness and continued participation. Most developing country teachers are already overburdened and the requirements on them of a health service program may not be accepted, regardless of whether or not they are concerned about the health of their students.
3. *a focus on short-term interventions rather than long-term sustainability* - Health programs are often initiated to address specific health or nutrition problems. Funding for one shot treatments is not enough to eradicate the myriad of health/nutrition and socio-economic problems afflicting young children. Consequently, interventions may effectively control one health problem, but usually only for a short time. Often one health condition is associated with another health problem or environmental conditions (family, community and school). For example, anemia is exacerbated by the presence of parasitic worms; treating a child for anemia without treating him or her for worms will alleviate the condition for a short time. If all the symptoms are not addressed in tandem, the alleviation of malnutrition and disease is likely to be short lived, only to resurface after a few weeks or months. Immediate needs should be addressed first, but a holistic, integrated approach is more likely to lead to sustainability.
4. *policy makers' lack of understanding of the environment in which school children live* - Decision makers, especially at the national level, are often removed from the environments of school children and their families. Programs and policies implemented at the state level, as a result, do not always address the real concerns of children in rural villages. One reason for the distance is the lack of information about local conditions. Epidemiological data may be insufficient and/or inaccurate. The district and, in particular, the local level decision makers are much closer physically, socially and culturally to the realities of schools and communities and are better able to design policies targeted to actual conditions. They tend also to be closer to the people and communicate regularly with them since they live among them. Often programs attempt to transport the Western models to the developing world, and these are usually not appropriate. Without accurate and sufficient data, programs will not reflect the needs of school children, or governments may not be sufficiently convinced to invest in school health service programs.
5. *turf issues* - Conflicts over roles and responsibilities may prevent successful collaboration. The Health professionals may not be willing to give the responsibility of providing health services and health education to the education sector. Likewise, the education sector may not be willing involve the health officials in the planning of curriculum or other school-

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<sup>26</sup> Warren et al, undated.

based activities. The two sectors are accustomed to viewing the other as a competitor for scarce resources and, therefore, cooperation between the two may take much time due to a lack of trust. Moulton writes, "Professionals in these two areas have different perspectives on development problems and different approaches to solving them. Within any civil service, they also have jurisdictional territory to guard."<sup>27</sup>

6. *sectoral priorities* - It is natural that those who work in education are going to feel that education activities should be of highest priority while those from the health field are likely to contend that health issues are of greater importance. What one group views as critical, the other may see as a low priority. The conflict of priorities, particularly at the state level, may mean that funding for school-based health services will be insufficient and inconsistent, depending on who controls the program. Improving child health currently falls outside the policy framework of both the education and health sectors. Without institutionalization of school health programs at the national level, neither group is likely to take the initiative.
7. *monitoring and evaluation* - The lack of a monitoring/evaluation mechanism will make it difficult to track the progress of implementation and the impact of interventions. Without up-to-date progress reports and program analysis, taking the program to scale can be impeded. It could also lead to loss of momentum for the program.
8. *equity concerns* - School-based programs raise concerns regarding health care for school-aged children who for some reason or another are not enrolled or are absent the day treatment is given. This is particularly a concern for girls, who are more frequently kept out of school than boys, as well as for children who must work instead of attending class and for those children who are too ill or weak to go to school and who obviously need care the most.<sup>28</sup>
9. *finance concerns* - most governments spend more on education than on health and the funding mechanism for health activities and those for education activities are usually separate. Each sector has its own budget and integrating new activities into two separate budgets is likely to create problems in implementation.

Barriers to establishing school-health linkages exist at all levels - from local to international.<sup>29</sup> The constraints listed above are among the most commonly cited ones. However, many more constraints hinder effective collaboration and program effectiveness, the types of constraints depending on the country, region, or school and the participating organizations.

- *At the local level* WHO projects have encountered a number of barriers to establishing effective collaborative initiatives in school health. A lack of understanding of the relationship between health and education, for example, means that families and communities will not consider school health a critical issue. As a result health and nutrition concepts may not be understood and the necessary community support may not be mobilized. Weak or even non-existent managerial direction at the local level is also a constraint to some programs, as are insufficient financial support and the absence of incentives for school health personnel to get involved in health projects.
- *At the school level* lack of leadership and authority is a common constraint. Although schools are usually the primary implementors of health programs, school heads may actually have very little autonomy to adapt programs to local conditions or to initiate new projects.

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<sup>27</sup> Moulton, 1996.

<sup>28</sup> Husein, M.H.; Talaat, M.; El-Sayed, M.K.; El-Badawi, A.; and Evans, D.B., undated.

<sup>29</sup> Jones in USAID/Bureau for Africa, 1996.

Allowing schools to set their own health agendas would make health education programs more relevant. In addition to granting schools greater autonomy and decision-making power, at this level, school policies to support a healthier school environment (e.g., sanitation standards and regulations) will facilitate program success. Without clear policies and guidelines students and teachers may not adhere to sanitation practices. Another barrier to programs at this level may be a teaching methodology that does not encourage students to express opinions, ask questions and think critically. Students may want to ask questions on sensitive issues, such as sexuality, but teachers themselves may not feel comfortable addressing such questions. Additionally, at the classroom level, programs may face resistance from teachers who are hesitant to change educational methodologies. Although the methodologies promoted through school-based initiatives are often designed to be participatory, this is no guarantee that teachers will carry this into classroom practice. Teacher resistance to change could also be an expression of the insecurity they feel regarding their capacity to undertake different forms of research and assessment activities often required by school-health programs.

- *At the district/regional level* problems arise when the delegation of responsibility for school health from one level to another occurs without knowledge of the resources needed at the level receiving responsibility. There may also not be a common jurisdiction for activities of school district authorities and health authorities, which could lead to difficulties in planning coordinated approaches between the national, district, and local health and education authorities.
- According to the Partnership for Child Development, collaboration is generally easier at the local level than at the national level. *At the national level* a number of problems can occur. Commonly resources in terms of skilled personnel, communication and teaching materials and money are limited. Because government officials are removed from the day to day activities of schools, planners at the top may be unaware of the difficulties of integrating health materials into existing curricula. Other factors which can constrain school health initiatives and collaboration between health and education are: inadequate attention allocated to health in the course of the school year or day; lack of coordination between concerned departments; low priority being assigned to health activities; difficulty in coping with rapid growing school populations; scarce funds to train personnel; lack of well-defined national strategies for the support and promotion of school health programs; lack of recognition of health as a school priority; inadequate funding; lack of trained teachers; and lack of monitoring, follow-up and evaluation of current programs.

Common to all levels are inadequate understanding and acceptance, inadequate collaboration, and inadequate vision and strategic planning.<sup>30</sup> Moreover, barriers exist between levels, further hindering full coordination and integration. Health and education priorities of school heads may differ from those of district officials, and what national leaders consider to be important may be a low priority for regional decision-makers. Conflicting priorities could lead to program stagnation, confusion, underfunding, and a lack of necessary commitment.

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<sup>30</sup> Jones, in USAID/Bureau for Africa meeting proceedings, 1996.

## Overcoming the constraints

With all these barriers, how can governments and schools put in place programs that work? What can be done to overcome the number of barriers to improving the health, education and lives of school children? The strategies proposed by various donor groups emphasize addressing the common barriers listed above - absence of understanding and acceptance, inadequate collaboration, limited vision and weak strategic planning. Jones,<sup>31</sup> for example, recommends these six strategies to improve school-based programs:

1. Identify responsible organizational staff/unit - clarify the roles and responsibilities of agencies and individuals;
2. Develop an evolving strategic plan to assure scarce resources have maximum effect. This can be achieved through careful and regular data collection and evaluation;
3. Implement activities to achieve plan objectives; activities should be targeted at priority issues and groups;
4. Monitor the achievement of plan objectives;
5. Establish a working intra-organizational group; and
6. Establish a working inter-organizational group.

These strategies seem obvious, but they are, nevertheless, not always utilized. With little or no experience with collaboration and with few examples to follow, it may not be so obvious what the role of the national ministry should be as opposed to the role of the regional authority. The lessons learned from the UNICEF Fourth Technical Support Group Meeting regarding the collaborative process and the ways to overcome barriers can be summarized as follows:<sup>32</sup>

1. The process of bringing together different sectors takes time and effort.
2. It is necessary to link what goes on in schools with what goes on outside (NGOs, PTAs, etc.).
3. It is necessary to focus on primary and secondary schools and to link the activities from one level to the next.
4. Linkages with the community and the development of effective community/school processes are essential.
5. MOE planners need to plan for 5 years in the future and not for the present. The emphasis is on long-term sustainability through strategic planning rather than on short-term cures.
6. Political will is needed.
7. It is not cost effective to focus curricular changes on one health issue. Integration of other health issues is preferred.
8. Careful monitoring and evaluation are very important.
9. Linkages between schools and health services are very important.
10. Teachers should not be overburdened.
11. Supportive policies must be in place.

The distinguishing element of the UNICEF strategy is the focus on community linkages and the need to include parents and families in the learning process. It is UNICEF's belief that without support from families and others, projects of any kind are going to be difficult to sustain. This approach is now commonly accepted as an effective one, but community and family involvement does not always occur. A policy of inclusion should be standard but it is not.

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<sup>31</sup> Jones, in USAID/Bureau for Africa meeting proceedings, 1996.

<sup>32</sup> UNICEF, Fourth Technical Support Group Meeting, 1995.

To facilitate the process, communities and families first need to understand the importance of improving the health of their children, and they must be made aware that these problems can be solved with their help. Telling parents that their sons and daughters are at risk means nothing if parents feel there is nothing they can do about it. Communication strategies can be utilized to inform parents of the immediate and long-term health and developmental risks to their children, concrete examples of other school health programs and their benefits should be highlighted. Also, whenever possible child health education efforts should be accompanied by education for parents. Forming linkages with community groups and local organizations is one way to reach parents.

Even with the hardships that many developing country populations face daily, parents and young children may not feel vulnerable to disease and sickness. Like many, they may believe that tragedies only happen to others, that health problems only afflict those of the neighboring village. With this in mind, examples of the benefits of simple, preventive health care and health education taken from a nearby village should be showcased when possible. If villagers are shown what is being done in another similar village, the risks and benefits are likely to become more real. Parent groups, parent-teacher meetings, and partnerships with community-based organizations are opportunities to communicate health messages and involve families and communities. Outside donor and development agencies can be the initial advocates for health education but communities cannot depend on them forever. Once such organizations pack up and leave, those they leave behind will need to be committed to children's health and education if programs are to survive, and including families and communities from the start will increase the likelihood of sustainability.

Suggestions from the Partnership for Child Development<sup>33</sup> echo the others' suggestions, but there is greater emphasis on integrating interventions and organizational cooperation. Their suggestions are to :

1. formulate a unified national school health and nutrition policy;
2. ensure intersectoral coordination and cooperation;
3. conduct a situation analysis so that interventions are appropriate and acceptable;
4. target the most needy children in order to be more cost effective;
5. rely on an integrated approach for the program so that individual children's needs for food, micronutrient supplementation and anthelmintics are met while at the same time the wider community's needs (e.g., improved access to clean water and sanitation, school gardens, health services, community-based nutrition and health services) are addressed, too;
6. involve the community members - particularly teachers, health workers, parents and students - to give the program needed momentum and support; and
7. clarify the roles of other sectors, such as the agriculture and the non-governmental sectors.

The Partnership adds that "Poor intersectoral collaboration may prevent an integrated approach to school health programme implementation and increase operational difficulties." Organizations and government agencies - from the state to the local level - need to view the needs of children from a variety of perspectives, rather than from a uni-sectoral point of view, and they must join together to address the critical issues faced by school children. If a task force is formed, for

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<sup>33</sup> Del Rosso & Marek, 1996; Watson, 1996; USAID/Bureau for Africa, 1996; Partnership for Child Development <http://www.ceid.ox.ac.uk>.

example, including only health sector representatives or just education officials is not enough when children are faced with a variety of obstacles. A truly integrated approach would include both sectors, as well as the agriculture, mineral and water, environment, social and economic sectors. The table below summarizes key strategies, the purpose of those strategies, and some issues which need to be considered in the implementation of those strategies.

**Table 1**

<b>Strategy</b>	<b>Purpose</b>	<b>Considerations</b>
<i>Define roles</i>	<ul style="list-style-type: none"> <li>• Ensure leadership</li> <li>• Establish responsibilities</li> <li>• Avoid duplication of activities</li> </ul>	<ul style="list-style-type: none"> <li>• Definition of roles at the national, regional, and local levels</li> <li>• Roles of the sectors involved</li> </ul>
<i>Form a strategic plan</i>	<ul style="list-style-type: none"> <li>• Set clear goals and objectives for children's health and education needs</li> <li>• Ensure fiscal commitment that is sufficient, efficiently allocated and long-lasting</li> </ul>	<ul style="list-style-type: none"> <li>• Long term focus instead of short-term cures</li> <li>• Continuity and consistency of priorities during changes in leadership</li> <li>• Flexibility to meet changing needs and unexpected situations</li> </ul>
<i>Monitor and evaluate</i>	<ul style="list-style-type: none"> <li>• Establish accountability</li> <li>• Ensure objectives are being met</li> <li>• Verify that interventions are appropriate</li> <li>• Make sure finances are properly managed</li> </ul>	<ul style="list-style-type: none"> <li>• Clearly defined measures</li> <li>• Regular collection of data</li> <li>• Accuracy of data</li> <li>• Mechanism for processing customer feedback</li> </ul>
<i>Establish intra-organizational team</i>	<ul style="list-style-type: none"> <li>• Set sectoral priorities and identify needs</li> <li>• Act as an information resource group</li> </ul>	<ul style="list-style-type: none"> <li>• Inclusion of national, regional and local officials</li> </ul>
<i>Establish inter-organizational team</i>	<ul style="list-style-type: none"> <li>• Facilitate communication and coordination of activities</li> </ul>	<ul style="list-style-type: none"> <li>• Conflicting sectoral priorities</li> <li>• Differing reporting requirements</li> <li>• Cultural differences between health and education groups</li> </ul>
<i>Establish community linkages (parents, local NGOs, health centers, community members)</i>	<ul style="list-style-type: none"> <li>• Leverage all available resources to their fullest potential</li> <li>• Build community support</li> <li>• Ensure the greater likelihood of sustainability</li> <li>• Establish community ownership and sense of accountability</li> <li>• Establish trust</li> </ul>	<ul style="list-style-type: none"> <li>• Conflicting priorities between program and community</li> <li>• Mechanisms for communicating information to the public</li> <li>• Cultural sensitivity</li> <li>• Involvement at every stage of program</li> </ul>
<i>Establish linkages with other government agencies</i>	<ul style="list-style-type: none"> <li>• Address the whole child in the context of health, education and physical and social environments</li> <li>• Ensure effects of different sectoral programs are not cancelling each other out</li> <li>• Avoid duplication of activities</li> </ul>	<ul style="list-style-type: none"> <li>• Cultural differences between sectors</li> <li>• Differing priorities</li> <li>• Cross-sectoral training needs</li> <li>• Clear lines of communication between all agencies involved</li> </ul>
<i>Involve schools</i>	<ul style="list-style-type: none"> <li>• Establish feeling of ownership</li> <li>• Leverage the human resources available in schools</li> <li>• Establish trust</li> </ul>	<ul style="list-style-type: none"> <li>• Teachers' time</li> <li>• Additional compensation for teachers</li> <li>• Technical training needs of teachers to provide health services</li> <li>• Involvement at every stage</li> </ul>

## Summary

As more children survive beyond early childhood and enter primary schools, the school is a logical point of entry to address the health and nutrition needs of school children. Service delivery through schools allows for greater coverage at relatively low costs, and has the potential for positive impact in the classroom as well as outside the classroom. The child, his or family and the wider community would all benefit from health-education integration. Children can be treated for individual health/nutrition problems, but they can act as messengers who carry home lessons learned about good health practices and nutrition so that parents and siblings benefit, too. The community can stay informed about the deficiencies in the learning place, which may motivate members to provide needed financial, material and human resources or initiate their own projects outside of school.

Interagency collaboration for any project is bound to be difficult. Agencies have their own priorities and concerns and rarely have they been asked to look beyond them. In addition, individual agencies are unaccustomed to viewing other agencies as partners. Competition for funding and support and cultural differences between institutions have kept health and education professionals from coming together in a spirit of partnership.

The institutional barriers that plague collaborative initiatives can, however, be overcome if governments have the will and commitment to make school health a national priority. Decision-makers must first understand the conditions in which children live. Accurate data and careful evaluation should inform long-term strategic plans and policies that trickle down to the local level. Additionally, funding must be sufficiently and efficiently allocated to school health projects. Agencies, for their part, should look beyond their traditional roles. With training and information, health and education personnel at all levels will better understand the linkages between the two fields.

The need for integrated services is now being discussed; however, studies that analyze institutional and organizational factors in collaboration are sadly lacking, as evidenced by the program examples included in this study. Of the twenty-three programs described in the following section, only a small number (Ghana, Tanzania, Indonesia) provided significant details on the institutional constraints encountered or the suggestions for overcoming them. There are - and have been - several programs involving health and education, but we know little about how the two sectors work together. In many cases there seems to be little or no cooperation within the same program. As we begin to move toward a more holistic approach to child development, collaboration between these two sectors (and others) is a growing priority. As Young argues, "Child development cannot be broken up into separate domains. A child's learning capacity depends on an interactive process of health, nutrition, and child-giver interaction [...] an adequate food supply is not enough to ensure a child's survival."<sup>34</sup>

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<sup>34</sup> Young, 1995.

## INTERAGENCY COLLABORATION FOR SCHOOL-BASED HEALTH SERVICES Programs and Activities

The program activities listed in this section were selected for inclusion based on the following criteria:

1. The program is currently in operation (some older programs were included if information on operations and organizations could provide lessons for new programs)
2. The program involves the participation of more than one agency;
3. The program is school-based or has a component which is school-based; and
4. The program is targeted at school-aged children, in school as well as out of school.

Though many of the programs have a mix of activities, only those activities pertaining to school-based health services were included in the program descriptions. The level of detail provided under each program varies, depending on the available information. Descriptions are generally taken directly from the documents in which they were found, and in some cases several documents pertaining to one program were combined.

### **Burkina Faso Fourth Education Project**

Project Sponsor: The World Bank

Other Participating Organizations: Ministry of Health, Directorate of Studies and Planning (DEP), Ministry of Basic Education and Mass Literacy (MEBAM), Directorate of Family Health (DESA) (of MOH), Pedagogical Institute of Burkina (IPB) (of MOE), Directorate General of Primary Education (DGEP).

Dates: 1991-1997

Interventions: Vitamin A and iodine supplementation; anthelmintics

The program encompasses a number of activities, including teacher training and textbook components for health/nutrition education as well as the construction of wells and sanitary facilities, and the provision of micronutrients and deworming treatments. Micronutrients and deworming tablets are provided to students in all schools at regular intervals.

The organizational structure includes an interministerial committee, chaired by the DEP and made up of DESA and DSF and DGEP, which has been charged with the responsibility of planning procurement, storage and distribution of vitamins and medicines as well as the responsibility of advising on the development of pedagogical materials. Regional Directorates of Primary Education distribute the supplements and deworming tablets to the school, and within the schools distribution is managed by teachers in collaboration with district level health authorities.

The role of the Ministry of Health is that of quality controller of the micronutrients and the DSF is responsible for monitoring progress in the various regions. Schools are also provided with school health kits. Implementation of this component of the Fourth Education Project is to be carefully monitored in order to evaluate the effectiveness of the implementation process and to measure the impact of interventions on student performance and attendance.

Program Strengths: Clear roles of participating agencies and institutions; built in evaluation component; integration of interventions; inter-sectoral participation.

**Burkina Faso School Feeding Program**

Project Sponsor: Catholic Relief Services

Other Participating Organizations: Ministry of Basic Education and Mass Literacy (MEBAM)

Dates: 1962-

Interventions: mid-day school meal during the school year

This program has been in existence for more than 30 years under the direction of Catholic Relief Services. In 1988, MEBAM took over major administrative responsibilities of the program. The overall goal of the program was to increase literacy rates in rural areas by improving school attendance, and the goal for 1994-1996 was to maintain achieved attendance rates or increase it to 90% on 85% of the school days. The program also hoped to increase the enrollment of girls.

An evaluation in 1994 concluded that the school lunch program had not had a significant impact on national enrollment. However, the presence of canteens was associated with more regular attendance, higher retention and higher score on the national 6th grade Certificat d'Etudes Primaire exams.

Program Strengths: the program also called for strengthening training for school inspectors, headmasters, teachers and parent association members

**Teach English Prevent AIDS - Cameroon**

Project Sponsor: Peace Corps Cameroon

Other Participating Organizations: Ministry of National Education, Ministry of Public Health

Dates: 1992-

Interventions: AIDS/HIV education

This project began with the collaborative efforts of the Ministries of National Education and Public Health and Peace Corps, and it is now carried out in 8 of the countries 10 provinces. It provides AIDS/HIV education through the teaching of English to high school students. The teaching of English is an important part of the academic curricula and a government policy. Teach English Prevent AIDS is presently implemented in all of Cameroon's French-speaking provinces. Focus groups at a workshop were conducted with teachers from all the French speaking provinces to evaluate the materials used and to obtain the teachers' impressions about the information. The feedback was in general positive and teachers were requesting further technical details in order to be better prepared to field questions in the classroom.

No information regarding the collaborative process was available.

Program Strengths: interministerial collaboration; participation of teachers in materials development; integration of subject into existing required course.

## **The Gambia**

Project Sponsor: The World Bank, Government of the Gambia, UNICEF

Other Participating Organizations: Curriculum Development Unit and Research Center of the Ministry of Education, Ministry of Health, school teachers, NGOs

Dates: 1992 -

Interventions: curriculum integration

In September 1993, The Gambia introduced a new curriculum which integrated health, environment, and population issues. The curriculum was targeted at upper primary and middle school grades, and they take a student-centered approach to learning. Lessons include no lectures but are instead structured to allow students reflection and problem-solving through discussion. The curriculum design phase involves interministerial participation as well as the participation of primary and secondary school teachers and members of the NGO community. All new materials are pilot tested before being implemented country-wide.

After conducting a baseline survey of the large group of stakeholders in 1992, a Population and Family Life Education program was introduced into government secondary schools, based on the information gathered from community members, parents and students. The new curriculum emphasizes health and environment through lessons in science and social and environmental studies texts. Additionally, as part of the science curriculum, teachers coordinate the development of school gardens and farms, successfully integrating health, environmental education, agricultural science, and community development into the project. Teachers are trained at Gambia College with the assistance of UNICEF technical experts.

Factors that promoted curriculum change include: 1) the establishment of teacher resource centers in 5 of the regional headquarters; 2) the participation of teachers and other community members in making curriculum content decisions; 3) the use of a consultative process for major policy decisions to ensure broad-based support; and 4) averting parental and religious resistance but making sure that technical voices were heard.

Factors hindering change: 1) poor working conditions, especially for primary school teachers; 2) low salaries; 3) scarcity of quality housing, particularly in remote areas; 4) high attrition among teachers mitigating the impact of training efforts; and 5) centralized training.

## **Ghana School Health Education Program (SHEP), Partnership for Child Development**

Project Sponsor: Rockefeller Foundation, Edna McConnell Clark Foundation, James S. McDonnell Foundation, UNDP, WHO

Other Participating Organizations: Ministry of Education, Ministry of Health, Ghana Education Services, Partnership for Child Development

Dates: 1992 -

Interventions: Deworming; iodine supplementation; iron supplementation, urinary schistosomiasis treatment

In Ghana, the health sector serves just 20% of the country's schools.<sup>35</sup> As a consequence, policy has shifted the focus of the organization of child health service delivery from the health sector to

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<sup>35</sup> Adjei, presentation materials, 1996.

the education sector. The mobile health units or the few clinics scattered throughout the countryside cannot reach all the children in need of medical intervention.

Up until 1988, health had been the sole responsibility of the MOH. In 1989, the MOE was utilized in an anthelmintic program in Ghana's schools. The school-based approach was further expanded in 1990 to include a program of chemotherapy. Some policy issues these developments raised were: 1) deciding the roles of the various players (parents, school system, education, other sector) in the provision of services; 2) deciding on the package of interventions (health services, provision of water and sanitation; basic health education and health promotion; provision of nutritional supplements that would be delivered based on the health status and needs of school children; and 3) deciding who would bear the cost for these programs. In an effort to answer these questions the Partnership was initiated.

The Ghana Partnership for Child Development began in 1992 to improve the health and nutritional status of school aged children through school-based interventions. It involves the collaboration of the Ministry of Health, the Ministry of Education, and the Ghana Education Services (GES), which is the body responsible for implementing the current National School Health Education Programme. The pre-existing inter-agency National Committee for School Health serves as the policy focus, while a range of government technical institutions, academic institutions and NGOs provide technical support for monitoring and evaluation.

The Core Programme is based in three districts of the Volta Region and involves 85,000 children. A regional coordinating council mirrors inter-agency composition of central policy group, the National Committee for School Health. Didactic health education materials have been developed, and teachers have been trained in their use. The drug delivery and reporting systems have also been designed and piloted, and a survey of health problems of the region performed in order to determine the prevalence of particular diseases in particular schools so that mass treatment methods can be targeted for schools with high infection rates. Data was gathered on health, parasitic infections, nutritional status and current KAP.

Cognitive psychologists were trained in Jamaica with a Cognition Panel, formed with the assistance of the Partnership, so that they could become familiar with materials that have already been developed and adapt them for use in Ghana. Additionally, a study was conducted to evaluate the social, economic and cultural factors influencing school enrollment and attendance by females and to assess the health of children in and out of school.

The overall goal of the program was to examine how the use of school-based health services could be strengthened in order to improve the health and education of children. The specific objectives of the Partnership were:

1. to determine the effect of a package of interventions on indicators such as school performance, nutritional status, growth development, morbidity, KAP of school children and the community
2. to determine operational issues such as: problems in implementation; collaboration between the Health and Education Sectors; and the cost of operationalization.
3. to make recommendations for expansion of the program to the rest of the country.

The program involved Health and Education employees at the national, regional and district levels.

Adjei's<sup>36</sup> report on the Ghana school-based programs presented five key findings:

- Program coordination: regular meetings were found to be useful; intersectoral action was more difficult at the national level due to multiplicity of units involved;
- The participation of the Education Sector: Teachers administered drugs and compiled data efficiently; Teachers' limited knowledge of health issues constrained them in providing health education;
- The importance of making health an education issue
- The necessity of commitment at all levels
- The impact of interventions so far was positive on health and education indicators: 1) The percentage of stunted children dropped from 50% in 1994 to 42% in 1996 in the intervention areas; 2) The percentage of children with anemia increased from 49% to 50% between 1994-1996 in the intervention area while in the comparison area, the proportion of anemic children rose from 26% to 58%; and 3) School performance indicators also showed changes but to a lesser extent.

The report concluded that:

- Teachers were key to the provision of services to the largest number of children possible but they needed training in order to provide health education and deal with side effects of drugs given to children. The school, however, could still be the central coordinator of service provision for school-aged children. What this means is that teacher education will need to be strengthened in the area of health education for teacher trainees as well as teachers already in the field. The report recommended that teachers already working be trained in the same manner as community health workers if not even in more detail. A school health textbook will also need to be developed for each grade.
- All these requirements means that the budgetary commitment must be strengthened. Functions of each sector must also be clearly spelt out to reduce the amount of time and the level of complexity that can be involved in intersectoral collaboration
- In the area of policy there are constraints at the national level resulting from uncertainty about the roles of the various sectors. Also, it is still not clear what sort of drugs the education sector is willing to have teachers handle. Policy also needs to be formulated on the role of parents in improving the health of their children. Additionally, the content of health education for various age groups needs to be decided, particularly for sensitive subjects.

The major constraints to effective program operation were identified as:<sup>37</sup>

- the lack of financial resources to support the work of the School Health Program, and a general lack of human and material resources;
- an ineffective monitoring and screening of a large percentage of school children due to lack of transport for Program coordinators;
- no monitoring visits due to financial constraints;
- the lack of training for Program staff on the management aspects of school health programs.

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<sup>36</sup> Adjei, presentation materials, 1996.

<sup>37</sup> Boakye, in UNICEF, 1995.

Program Strengths: integration of different types of interventions; involvement of MOH and MOE, as well as other government agencies; comprehensive approach; training of teachers and health workers; learning from other projects (a kind of ‘best practice’ approach); sensitivity to cultural factors.

### **Guatemala PRODEIN Project**

Project Sponsor: UNDP/Partnership for Child Development Programme

Other Participating Organizations: INMED

Dates: undated

Interventions: deworming, health education, child-to-child

The Guatemala PRODEIN (Proyecto de Desparasitacion Infantil y Educacion No Formal en Salud) was implemented in the a region on Guatemala’s south coast and covers 21,900 students in 71 schools. The core interventions include: albendazole treatment for intestinal parasites twice yearly; participatory education techniques for school teachers; promotion of the child as an agent of change through technical proficiency lessons in six hygiene content areas; and parent training. The PRODEIN model demonstrates several pertinent lessons for low-cost, core, nutrition-intervention programs for school-aged children. These are: affordability; sustainability; synergistic components; mobilization of public resources; intersectoral collaboration; and values. The modular delivery system further lends itself to two significant programming opportunities: ‘piggybacking’ of other interventions and inclusion of absentee, non-enrolled and preschool children through the school network.<sup>38</sup>

Program Strengths: teacher and parent training, involvement of the child as a change agent.

### **Guinea Equity and School Improvement Program**

Project Sponsor: The World Bank

Other Participating Organizations: Ministry of Pre-University Education and Vocational Training

Dates: 1995-2000

Interventions: iron and iodine supplementation; deworming

Prior to the introduction of interventions, a survey of the Guinean school-aged populations was conducted. The survey revealed high levels of parasite infection. Based on this information, it was decided that investments in teacher training and textbooks would need to be accompanied by activities to improve the health and nutritional status of school children. Deworming treatments are scheduled once a year and are meant to control rather than eradicate infections. Iron supplements will be given once a week during the school year. The Central Pharmacy is used as the delivery site for drugs, which then distributes the drugs to local health centers. Responsibility for pick-up is shared by the school and the parents’ associations. A drug tracking system will be established by the school health department.

This project includes a health component entitled “Student Capacity to Learn”, which is targeted primarily at girls, but does not exclude boys.<sup>39</sup> WHO provides technical advice, and UNICEF

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<sup>38</sup> Watson, 1996.

<sup>39</sup> Christopherson. 1996.

provides in-country assistance on the project. A pilot study has already been conducted to determine for what health interventions the school is an appropriate site. In addition, they are looking for measurements and/or proxies of student learning. A baseline study of parasite infection in students in all regions has been conducted, and the first round of intervention has occurred in one region: students received micronutrient supplements and deworming tablets in combination.

Program Strengths: integration of interventions; situation analysis conducted; baseline data on parasitic infection conducted; parental participation; using existing health infrastructure for delivery; targeting the high risk group (i.e., girls).

### **The Indonesian Partnership for Child Development**

Project Sponsor: Partnership for Child Development and affiliated agencies

Other Participating Organizations: Ministry of Education, Ministry of Health, Ministry of Religious Affairs, Ministry of Internal Affairs (Representatives from these agencies form the school health coordinating team)

Dates: undated

Interventions: health education; deworming, iron supplementation; environmental sanitation and water supply

This is an integrated effort to develop and maintain health living behavior of school children. The intersectoral collaboration occurs at central, provincial, regency, subdistrict and school levels, and the program is implemented with the close participation of the community. There are three main activities under the program: 1) Health Education - in the classroom and through extra-curricular activities; 2) Health Services - in the home through self care and through schools through screening programs for new entrants, deworming and iron supplementation, a nutrition programme, a programme against epidemic diseases, environmental sanitation, latrine and safe water supply, dental services, mental health, immunization, training cadre and referral system; and 3) Environmental Sanitation - latrine construction and water supply in schools.

The program in Indonesian is located in the Central Java region. The Partnership is multi-sectoral but will fall under the umbrella of School Health Activities, which is already in existence, at both the national and provincial levels. At the national level the School Health Activities project involves the Ministry of Education, the Ministry of Health, the Ministry of Religious Affairs and the Ministry of Home Affairs. Participation of the various sectors is mirrored at the provincial level with coordination at provincial level being handled by the Provincial Health Office and University of Diponegoro. A health survey of 1500 students has been performed. Multi-level, multi-sectoral collaboration is considered to be a critical element of the Indonesian Partnership program.

Program Strengths: multi-sectoral collaboration at all levels; integrated approach; use of pre-existing structure; community participation.

### **Jamaica Family Planning (1966-1979) and Jamaica Population and Family Planning Services II (1991-1998)**

Project Sponsor: USAID and Jamaica National Family Planning Board

Other Participating Organizations: Ministry of Education, Ministry of Health Bureau of Health Education, Jamaica Family Planning Association, Women's Center in Kingston, University of

the West Indies, IBRD, IPPF, UNFPA-ILO, the Association for Voluntary Surgical Contraception

Dates: 1966-1979 and 1991-1998

Interventions: family life/sex education

The Family Planning program started in 1966 with the goal of reducing the population growth of Jamaica to zero by the year 2000 by assisting and strengthening government, academic and private agencies involved in family planning. The school-based components of the program involved family life/sex education courses prepared for primary, secondary and college level students. Additionally, training in family life/sex education was provided for 2000 primary and secondary teachers and 1,500 teacher trainees.

In the current project, the school-based component involves assisting the Ministry of Education's Family Life Education program by providing new texts and teaching materials for primary and secondary schools, as well as teachers' colleges.

No information regarding the collaborative process between the various sectors and agencies was available.

Program Strengths: training for teachers at all levels of education

#### **HIV/AIDS Curriculum - Malawi**

Project Sponsor: , UNICEF, WHO, USAID

Other Participating Organizations: Ministries of Health, Education, and Community Services, other government bodies, National AIDS Control Committee

Dates: 1980 -

Interventions: AIDS education and prevention program

In 1989, Malawi's National AIDS Control Committee called for the introduction of a school-based AIDS education and prevention program. The initiative involved inter-ministerial cooperation, as well as the participation of other government bodies and donor agencies. The initiative began with a workshop to review existing AIDS education materials from other countries, a nationwide KABP survey. Workshops were also held to draft teachers' guides and help educators conduct focus group research with students, parents and teachers. Materials were produced and distributed to teachers, who received training in their use. However, the materials are not being used due to a gap or conflict between the jurisdictions of the ministries of health and education. One strength of the Malawi AIDS program is that, unlike other countries, Malawi has included AIDS curricula in national examinations, which is an indication of the government's commitment to the program.

Program Strengths: interministerial cooperation; family and community participation; learning from other countries' experiences; training for teachers; commitment at the national level.

## **HEALTHCOM in Nigeria**

**Project Sponsor:** USAID

**Other Participating Organizations:** UNICEF, Primary School Management Board, MOH Health Education Unit, Local Government Administrations (LGA)

**Dates:** May 1987-September 1990

**Interventions:** health promotion through communication, water supply, teacher training.

The initial objective of HEALTHCOM was to improve health education in the state and assist the Health Education Unit in the promotion of immunization and oral rehydration for diarrhea. The program sought to improve the health education performance of health care workers and to change the behavior of mothers in the care of young children.

As a result of the project, MOH gave higher priority to health education, evidenced by the fact that health education now has its own line item in the budget and personnel are working regularly with radio and television producers to develop health education communications. The project succeeded in establishing a pattern of close collaboration between health educators of the HEU and personnel from media in Minna.

In 1989 a series of interventions in Rafi and Suleja LGAs were initiated. They involved interventions conducted jointly with the MOH, UNICEF, health officials from the two LGAs and the Primary School Management Board.

A number of school based activities resulted from the collaboration. Among them were: 1) the provision of drums of potable water to schools; 2) workshops for teachers from five schools on screening and vaccination; 3) a baseline survey of health problems and KAP conducted by African Regional Health Education Centre (ARHEC); 4) the provision of materials to teachers for use in health education programs on personal hygiene; and 5) the formation of school health clubs in each school to encourage pupils to speak to their parents about malaria and measles immunizations. In addition, teachers were trained in the use of media for health education. Workshops were attended by one headmaster and one teacher from each school and two staff members from each health center.

*Health Clubs:* most if not all schools had established a school health club. Members in some schools met once a week, in others once a month. In several schools gardens were planted and members participated in cleanup activities. Some schools' clubs even participated in clean up operations in a nearby town. The number of members in a club varied from 20-80. Students were given caps and t-shirts when they joined. The evaluation noted that while pupils may be willing to participate in clubs if asked and given these items, it may be too much to ask of them to speak to their parents about measles and immunizations enough to have a measurable effect. To be truly effective, teachers must talk about such things with pupils regularly so that they can discover how the process occurs.

*Treatment of Malaria:* a school health referral form was developed and passed to headmasters at workshops. Unfortunately, the forms were not used as intended. Instead they were used for a variety of minor illnesses, and many families believed that the form meant treatment was free, which was not the case. This indicated that training had been insufficient, regular supervision was lacking, and the concepts to be communicated were too complex.

Though little information was provided on how the Primary School Management Board, the Head officials and UNICEF worked together, the evaluation did recommend that planning include all those who will be participating so that a sense of ownership could be established. The Ministry of Education in Niger State itself would like the Health Education Unit staff involved in the planning as well as the implementation of the project.

A criticism of the program was that persons in charge of health education had not had any training in health education though they were health professionals.

Program Strengths: commitment at the national level; budgetary commitment to health education; integration of interventions; participatory approach; incentives for students (caps and t-shirts).

### **Improving the Ability of Primary School Children to Learn Through Nutrition and Health Interventions - Nigeria**

Project Sponsor: University of Nigeria and American Jewish World Service

Other Participating Organizations: Abatete Women's Association

Dates: 1994-1996

Interventions: deworming, vitamin A and iodine supplementation, school snack, and health education

This program in Nigeria was implemented in three schools of the Anambra State: Central Primary School Nsukwu (Abatete), Odida Primary School (Abatete) and Oye-Ngiagu Primary School (Ogidi). After a nutritional, parasitological and clinical examination in 1994, children were provided treatments for a variety of parasitic worms. Students also received vitamin A and iodine supplements. The school snack program was introduced after the clinical examinations and deworming had begun. Children were provided snacks daily, but the number of children receiving snacks depended on the number of pupils who were allowed to stay in school because they had paid their school fees. This, of course, meant that children who had not paid the fee were unable to receive the treatment and snacks, which was one weakness of the program. The school snack program was, however, successful in eventually increasing attendance, in spite of the school fees. Retention also improved as a result of the snack program, and there was a correlation between the snack intervention and improvements in exam scores. The focus in schools on child health also seems to have led to other unplanned health-related activities, such as renovation of the school building by the Parents' Association and a search for alternative water supplies. The feeding program has had a positive effect on girls' attendance and enrolment rates.

Program Strengths: an assessment of health and nutritional status of children before the administration of interventions; an integration of types of interventions; the motivation for other activities to improve the school environment.

### **Narcotics Education - Peru**

Project Sponsor: USAID

Other Participating Organizations: Center for Education and Information on Drug Abuse (CEDRO), Street Children Program, Ministry of Education, National Institute for Family Welfare

Dates: 1992-1996

Interventions: drug-related curricula

This project aims to strengthen the CEDRO as Peru's leading drug information and education center, as well as to expand the implementation of drug-related curricula in Peru's secondary schools. It also aims to develop community drug prevention programs in high risk areas and consolidate the Street Children Program. The school-based component of this project involved the distribution of educational materials to schools and universities, among other places, and supporting the expansion of the Ministry of Education's secondary school drug prevention program from the 114 schools to no fewer than 1,800 by 1997. Emphasis is to be placed on schools in and near coca-growing regions.

No information regarding the collaborative process between the various agencies was available, and the participation of the Ministry of Health was not mentioned.

Program Strengths: targeting high risk areas, reaching children not enrolled in schools, supporting on-going programs that have already been in place.

### **South African Primary School Nutrition Scheme**

Project Sponsor: The World Bank

Other Participating Organizations: Department of Health, Department of Education, Reconstruction and Development Programme

Dates: undated

Interventions: deworming; micronutrient supplementation; supplemental feeding; nutrition education; environmental improvement.

The Primary School Nutrition Program was one of the flagship initiatives of the Mandela government. It aimed to provide universal coverage and, at the time of the evaluation, fed 4.5 million students. The program encourages communities to become more involved in health issues at school, and it attempts to reduce wastage and inefficiency by targeting supplies to children who are most in need.

The principles applied in this project include: 1) community participation; 2) a holistic approach; 3) a multi-sectoral and multi-disciplinary intervention; and 4) sustainability. Short-term activities include: basic food intervention, micronutrient supplementation, parasite eradication and nutrition education. These initiatives will be linked to longer-term objectives through: 1) programs aimed at the socio-economic upgrading of rural and peri-urban areas - e.g., access to drinking water and improved standards of sanitation, school and family gardens to ensure food security, and the promotion of entrepreneurs at the local level; 2) a national education quality improvement programme; 3) parent education programs; and 4) an improved school health service programme.

The Department of Health will administer the programme with co-management at all levels (national, provincial and district) with the Department of Education, and with the overall coordination resting with the Reconstruction and Development Programme. The initial proposal for the project recommended that a ministerial committee at the national level and provincial levels be established to formulate broad policy. It also recommended that teachers and parents be involved in management and decision making at the local level.

The government is planning an evaluation of the program, which will ask a number of questions, including: Does the program increase student attendance? Is there a difference between its attendance effect on boys and girls? Does the program improve cognitive function, active learning capacity, and classroom behaviors? Does it increase learning? Does school quality influence the pattern of program benefits? Does it influence dietary habits as well as other nutritionally related behaviors, attitudes and knowledge? The evaluation will look at a range of variables such as participant's age and nutritional status, number of feeding days, composition and timing of feeding, and the level and nature of community participation.

Program Strengths: multi-sector involvement; holistic; integration of interventions; focus on at-risk areas; parent education and involvement.

### **Tanzania School Health Project**

Project Sponsor: USAID

Other Participating Organizations: Ministry of Education, Ministry of Health, Ministry of Water, Minerals and Energy, Ministry of Agriculture

Dates: 1980-

Interventions: child-to-child health education; health services screening and basic care; school farms; school feeding; environmental improvements.

In 1977, the Government of Tanzania requested assistance from USAID in extending the health system to the population of school-aged children because the traditional health service system was not reaching most areas of rural Tanzania. Though the Maternal Child Health (MCH) program was in place, officials discovered that once children started school, they were no longer served by the MCH program. Working together, the Ministries of Health and National Education and USAID/Tanzania designed the project, with the Ministry of Health as the designated body who would implement the project. The health sector was selected because of the technical knowledge required for most programs.

The Tanzania School Health Project began in 1980 with the purpose of initiating a comprehensive school health program emphasizing six primary components:

- 1) Health education instruction at the primary school and teachers' training college levels;
- 2) Health services-health screening, simple diagnosis and treatment, first aid treatment, basic self-care and Child-to-Child methods; the screenings were conducted by the 8000 teachers of the 800 schools of the Central Zone, and an existing curriculum used to train local health workers was modified for the teachers. The Village Health Workers then trained the teachers using the new curriculum;
- 3) Nutrition-improved output from school farms, crop storage, and use for school feeding programs: problems associated with this component included the lack of cooking and eating facilities, the lack of people to prepare the food, the time required to prepare the meals, and

the lack of facilities and water for cleaning utensils. Additionally, the school gardens could only produce enough to feed the children for a few months or even just a few weeks.

- 4) Environmental health-school latrine and water supply construction: problems impeding this component were lack of funds, unavailability of materials and the high cost of materials, lack of geohydrological information, poor road conditions which affected access to the schools during the rainy season, and the lack of personnel, equipment, vehicles and fuel.
- 5) Institution of a student health record system: a school health card was instituted and data was collected on a child's weight, immunization status, high risk status, self or sibling attendance record, illness record, and other items. Data were compiled from the individual level to the aggregate level.
- 6) Training of personnel in health, education and management skills. Training was comprehensive in that it covered all levels of personnel involved, from the ministerial level to the school level.

The two primary country agencies involved were the Ministries of Health and Education, and the pilot phase covered 80 schools with a total of 30,000 students in the regions of Dodoma and Singida. In the 80 schools, the project was implemented by 160 teachers with the help of 8 district health officers. From its inception the School Health Program was organized to encourage interministerial inputs and cooperative arrangements, such as the Ministry of Water, Minerals and Energy, and other water projects. Still, as the evaluation noted, "It is increasingly apparent that the management and implementation of the program at all levels --national, regional, district, and local -- need to be shared with professional staff in the Ministry of Education," since the project directly affects the country's primary schools.

Constraints associated with the program:

- *Defining roles.* A lack of clarity of roles and responsibilities of central office staff, expatriate technical advisers and regional and district medical and education officers. John Snow, Inc. was given the roles of technical advisers as well as administrators (complete control of expenditures).
- *Conflicting structures and procedures.* TSHP structure and operating procedures were often in conflict with established government programs, creating confusion and bad feelings.
- The absence of the MOH program director at the start of the program created an administrative vacuum, resulting in lack of continuity and difficulty in maintaining progress
- *Communication.* There was a lack of direct communication, especially at the central office level between the MOH program director, the John Snow, Inc. Chief of Party, and USAID project monitors. This led to misunderstandings and subsequent delays in implementation.
- *Government reporting requirements.* Tanzanian government reporting requirements were very different in format from USAID reporting requirements. The MOH Planning Unit complained that they were not receiving the quarterly financial reports yet had no one person designated to receive the reports. As a result, reports which had been sent in by JSI said were frequently lost by the MOH. Also, the government inventory reporting procedure was different from JSI's.

Program Strengths: training at all levels and across sectors; the level of participation of other projects and sectors; community involvement was also unusually good; Tanzanian receptivity to programs promoting self-reliance and the government policy on implementation and adherence to the self-reliance philosophy which is supported by mechanisms in the village to enforce participation so that once a village makes a decision, it is expected to act on it.

### **The Tanzania Partnership for Child Development**

Project Sponsor: Rockefeller Foundation, Edna McConnell Clark Foundation, James S. McDonnell Foundation, UNDP, WHO

Other Participating Organizations: Ministries of Health and Education, the Ministry of Culture, the Ministry of Local Government, the Ministry of Community Development, Women Affairs and Children

Dates: 1993 -

Interventions: Deworming; iodine supplementation; iron supplementation, urinary schistosomiasis treatment

The Tanzanian government established a Partnership program called *Ushirikiano Wa Kumwendeleza Mtoto Tanzania* (UKUMTA) in February 1993. The partnership involves the Ministries of Health and Education, the Ministry of Culture, the Ministry of Local Government, the Ministry of Community Development, Women Affairs and Children. The Partnership uses the pre-existing inter-agency National Committee for School Health as the national focus for policy, and an equivalent Regional Committee in the Tanga Region serves as local coordinating and implementing body. A survey of nutritional status and parasitic infections was conducted in the region in 1994 to assess the interventions required.

Training in methods to evaluate impact of health education was conducted jointly with WHO/TDR, participants from Colombia, Ghana and elsewhere in Africa. The Nutrition and Growth Panel has been charged with the task of examining the health and nutrition of absentee and non-enrolled children. To aid the data collection process, a computerized data collection and analysis system has been installed. The Partnership operations research activities are complemented by initiatives to build the capacity of schools of public health in Ghana and Tanzania to conduct this kind of research. This component of the project is being carried out by the Harvard Center for Population and Development Studies.

Program Strengths: involvement of MOH and MOE and other government agencies; use of pre-existing structures; data collected to target interventions; cooperation with other country program representatives; installation of information system for easier data collection and analysis

### **Uganda School Health Education Project**

Project Sponsor: Comic Relief, AMREF, Redd Barna, UNICEF

Other Participating Organizations: Institute of Education, Kyambogo, Ministry of Health, Ministry of Agriculture, Ministry of Local Government, WHO

Dates: 1988 -

Interventions: child-to-child health education

The child-to-child program in Uganda covers about 200 schools in 10 districts. It includes a teacher education component and extracurricular activities for the children. At the national level it is guided by an interministerial panel comprised of representatives from the ministries of agriculture, health, local government, AMREF, Red Cross, WHO and UNICEF. Implementation responsibility cascades to the zonal level and to school health committees. Health topics covered in the syllabus include immunizable childhood diseases, AIDS, and personal hygiene. The approach encourages children to deliver health messages outside the school and participate in

health related activities with their families and others in the community. The program seems to be changing behaviors positively.

Program Strengths: training of teachers; participatory in approach; interagency and intersectoral participation at the national level; participation at the national, zonal and local level.

**The Government of Uganda and UNICEF Country Programme: The Basic Education, Child Care and Adolescent Development Programme (BECCAD)**

Project Sponsor: UNICEF

Other Participating Organizations: multi-sectoral, Uganda AIDS Commission, AIDS control programs in line ministries, NGOs and communities

Dates: 1990-

Interventions: AIDS education, life family life/sex education

Instead of focusing exclusively on AIDS, BECCAD takes a broader view of adolescent and youth problems. It is a comprehensive program that integrates early childhood care and development, primary education and a focus on adolescents in order to address the influences of family and community on child and adolescent development. The program is implemented at the community, service delivery, district and national levels. The initiatives of the project focus on life skills development in reproductive health, safer sex practices and decision-making skills; shifting attitudes and opinions toward a healthy lifestyle; and guaranteeing a safe and secure public space for this to occur. It also includes a component that ensures primary education classes at times and places convenient for out-of-school children.

No information regarding the collaborative process was available.

Program Strengths: multi-sectoral; holistic approach, involvement at several levels; targeting out-of-school children.

**Zaire: CEPLANUT Food/Nutrition & Agriculture Education Project**

Project Sponsor: USAID

Other Participating Organizations: Centre National de Planification de Nutrition Humaine

Dates: 1982-

Interventions: Primary school curriculum, training manuals

This project's target group was school children in grades 1-6. A curriculum developed by the Centre Nationale de Planification de Nutrition Humaine (CEPLANUT), based in Kikwit was pilot tested in four representative rural schools, and it was intended that the program would be expanded to the subregional level. The curriculum contained 300 lessons in agriculture and 300 lessons in nutrition and health and used a participatory approach.

The project developed a primary school curriculum, flip charts, nurses training manual and growth monitoring model. Due to a number of factors, such as inflation, the charts and training manual were not printed. The curriculum materials were to cover agriculture issues including food production, food processing, storage methods and food consumption. The manual for nurses was to cover nutrition education, growth monitoring, nutrition assessment, dietary

counseling and dietary management of diarrheal disease. The nutrition education component was eventually scaled down.

No meaningful reference regarding the participation of the health sector was made in the evaluation, but “intersectoral integration of nutrition objectives into projects across sectors (pp. 16)” was recommended. At the time, nutrition education was generally in the form of a small add-on component to something else. The success in producing a nutrition textbook was attributed to the collaboration between the health and education sectors, CEPLANUT and USAID.

Program Strength: participatory approach.

### **The Adolescent and AIDS Prevention Project - Zimbabwe**

Project Sponsor: ICRW, Ford Foundation

Other Participating Organizations: University of Zimbabwe Department of Community Medicine

Dates: 1992-

Interventions: HIV/AIDS education

This project began in 1992 with funding from ICRW. It was designed initially to study female sexuality, but during the research phase it was found that adolescents needed a forum to discuss sexuality and HIV/AIDS, STD, peer pressure, and relationships. It was decided to use the classroom for this purpose. Teacher training has begun and a manual to go with the training has been developed. Regular teacher support and training are reported to be the key to the success of this project so far.

The project has been working with the Ford Foundation funded sister project for the last year. The Ford project has started youth AIDS clubs in schools using a newsletter and competitions as education tools.

No information regarding the participation of the health sector or other sectors was mentioned.

Program Strength: regular teacher support and training; a setting in which students can openly discuss issues of sexuality and relationships.

### **The Government of Zimbabwe and UNICEF Program of Cooperation: The AIDS Prevention Program**

Program Sponsors: UNICEF and the Ministry of Education

Other Participating Organizations: An array of ministries; the National AIDS Coordination Program; the Zimbabwe AIDS Network; selected NGOs and other groups; selected training institutions; the University of Zimbabwe; the Zimbabwe Broadcasting Corporation; municipalities and cities; heads of church denominations; and the Zimbabwe Council of Churches

Dates: 1992-

Interventions: AIDS/HIV education, communications campaign

The Zimbabwe-UNICEF AIDS Prevention Program began in 1992, and systematic teaching of AIDS/HIV started in January 1994. The program utilizes a combination of approaches such as service delivery, capacity building, and target group empowerment. The largest component of

the program supports the introduction of AIDS education into all primary and secondary and tertiary-level schools in Zimbabwe by the Ministry of Education. A communications campaign is used to reach out-of-school youth. The school-based components of the program include textbooks developed for the program, a nationwide school newsletter, and the training of future teachers in AIDS education. Personnel from MOH and NGOs also participate in training.<sup>40</sup>

The success of programs of this nature and extent depends on the following<sup>41</sup>:

- political commitment and government ownership
- broad-based support
- attention to management and logistical issues such as time-tabling
- creation of training capacities and support systems
- action research and timely evaluation
- adequate financial resources
- significant involvement of key players and target groups
- goodwill and awareness of the program
- inter-sectoral collaboration
- transparency

The constraints of this program centered around teachers:

- getting teachers released during school time
- unsupportive attitudes on the part of some head teachers and teachers
- preoccupation with examination subjects, especially at the secondary level

A process evaluation was carried out on the implementation of the program in Grade 7. No other information regarding the collaborative process was available.

Program Strengths: including out-of-school children in target group; covers all levels of education; training of teachers.

#### **Program Involving Multiple Countries:**

**Nutrition Education and Social Marketing Field Support Project: Mali, Burkina Faso, Niger, Honduras**

Project Sponsor: USAID

Other Participating Organizations: government ministries, NGOs, PVOs, international agencies

Dates: 1994-

Interventions: nutrition oriented curricula

The goal of the Nutrition Communications Project was to “reduce the incidence and severity of malnutrition among children and mothers by fostering changes in behavior.” One of the project goals called for the inclusion of nutrition oriented curricula for schools of agriculture, primary schools and teacher training centers.

NCP collaborated with host country ministries, NGOs and PVOs and international donors. For example, in Niger they worked with the Ministry of Agriculture, while in Mali there was

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<sup>40</sup> Gatawa, in UNICEF , 1995

<sup>41</sup> Gatawa, in UNICEF, 1995.

collaboration with PVOs and the Ministry of Health. The Ministry of Health was the major partner, and later the Ministry of Education, for the project in Burkina Faso. In Honduras, the Ministry of Health was also the primary partner. The in-school portion of the project was supported by the Ministry of Education and UNICEF. No information regarding how the various sectors worked together was detailed in this evaluation. The project was slated to end March 1995.

### **Current School-Based Nutrition and Health Services in World Bank Operations:**

The following is a list of the current World Bank programs in school-based nutrition and health services, as listed by Del Rosso and Marek.<sup>42</sup> Though there were a few others on their list, only those projects still in operation were extracted. The country project names are listed, followed by the years for funding and the program elements covered. No other detailed information on these programs was available.

- Angola First Education (1992-1997): health and nutrition education in curriculum
- Bangladesh Female Secondary School Assistance (1993-2000): hygiene education; water and sanitation for schools
- Bolivia Social Investment Fund (1993-1997): school meals for ages 3-12
- Brazil Innovations in Basic Education (1991-1998): school meals (management & training); health screening (vision & hearing); immunizations, preventive oral health; iron and vitamin A supplements via schools; evaluation of nutrition and health interventions
- Brazil Northeast Basic Education (1993-1999): evaluation of school lunch program
- Cape Verde Education and Training (1995-2000): operational research on school feeding and other school-based health and nutrition interventions
- Chile Primary Education Improvement (1991-1998): health and nutrition screening and referral; school health manual and teacher training; school feeding for pre-schoolers
- Costa Rica Basic Education Rehabilitation (1991-1997): health education in curriculum; teacher training in health education
- Dominican Republic Primary Education (1991-1998): institutional capacity building in school-based nutrition and health services; school meals (expansion & targeting); deworming; social marketing-based health and nutrition education through schools; iron-fortified school breakfasts
- Dominican Republic Basic Education II (1996-2001): school nutrition and health services as under Basic Education I (school feeding, deworming, micronutrients, and capacity building)
- Ecuador Social Development I (1991-1999): research on nutrition, health and education. The project is part of a social sector program incorporating a sequence of projects in rural development, education and training, health and nutrition and social welfare. The urban basic education component finances textbooks and education materials, in-service teacher training, pre-school and special education.<sup>43</sup>
- El Salvador Basic Education Modernization (1996-2001): deworming; vitamin A and iodine supplementation; health screening and referral through schools; social marketing-based health education
- Lesotho Education Sector Development (1991-1997): impact evaluation of school gardens
- Madagascar Education Reinforcement (1990-1996): nutrition education in curriculum

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<sup>42</sup> Del Rosso & Marek, 1996.

<sup>43</sup> additional information from Chistopherson, 1996.

- Maldives Second Education and Training (1995-2000): training for school health staff
- Morocco Rural Basic Education (1991-1997): school canteen construction; school meals (subsidized); evaluation of school feeding
- Mozambique Education II (1990-1997): school rehabilitation; latrine construction; pilot deworming and iron supplementation; school feeding (expansion); institutional development for school health
- Niger Education III Secal (1994-2000): deworming; micronutrient supplementation; health and hygiene education; institutional development for school health
- Pakistan Sind Primary Education (1990-1998): school feeding (local foods via PTAs); evaluation of school feeding
- Peru Basic Health and Nutrition (1994-2000): deworming
- Soloman Islands Education & Training III (1993-1999): training for school nurses
- Zaire Education III (1991-1996): teacher training in health, nutrition & hygiene; non-formal education for parents
- Zambia Education Rehabilitation (1992-1998): health and hygiene education; study on cholera and environmental health in schools

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