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Secondary Cities in West Africa: The Challenge for Environmental Health and Prevention

May Yacoob and
Margo Kelly

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One Woodrow Wilson Plaza
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(202) 691-4235
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About the Authors:

Dr. May Yacoob is a Senior Social Scientist at Research Triangle Institute's Center for International Development who has worked on health and environment issues for over 20 years. She has developed successful methodologies and approaches for disease prevention that have been effective in creating enabling environments for public health policies. Her focus has been on working with municipalities (in countries such as Tunisia, Benin, and Ecuador) in secondary cities to develop cross-sectoral programs that support the decentralization of health services to communities and their local stakeholders. Dr. Yacoob has established regional resources for technical assistance and training in the use of these methodologies for preventing infectious diseases, particularly diarrheal diseases and malaria. Dr. Yacoob has also adapted community approaches to dealing with HIV/AIDS and reproductive health. Over the past 14 years, in working with USAID's Water and Sanitation for Health (WASH) Project and Environmental Health Project (EHP), she has helped build the project's reputation for designing sound community-based approaches to public health and behavior change. Other donors and bilateral agencies (such as the United Nations Development Programme [UNDP] and the African Development Bank) as well as international NGOs have used Dr. Yacoob's expertise in developing results-oriented, community-based approaches. Dr. Yacoob has long-term experience in over 12 countries in Africa, the Middle East, and Central America. She is a Medical Anthropologist with a Ph.D. in anthropology and sociology from Boston University and a post doctorate specialization in health policy and planning. She can be reached at may@rti.org.

Ms. Margo Kelly is a technical staff member at the Environmental Health Project (EHP) who has worked on community participation and institutional issues for four years. She has co-managed infrastructure and institutional capacity-building projects in Tunisia and Benin. This includes coordinating a regional conference in Cotonou, Benin in May 1998, which examined environmental health and community participation issues by over 50 participants from throughout the region and South Africa. She also produced a video on the project in Tunisia. In collaboration with her colleague Dr. May Yacoob, she has written extensively about the Community Involvement in the Management of Environmental Pollution (CIMEP) projects in various EHP reports, guides, marketing pieces, and journal articles. From 1988-1990, Ms. Kelly worked as a Peace Corps Volunteer in Benin on forestry and rural development projects. Her background also includes working as a writer, editor, film production assistant, and facilitator. Ms. Kelly has a B.A. in Communications from the University of California at San Diego and a M.A. in International Relations from Boston University. She can be reached at: kellymm@cdm.com.

Executive Summary:

Secondary cities in today's West Africa were rural villages thirty years ago, so their housing, water, sanitation, and public health infrastructures are often very poor or nonexistent. Addressing issues of secondary cities requires new vision, policies, and approaches. Governments must work with local and traditional management systems and structures already in place. This paper describes the concept of environmental health and the related preconditions for disease prevention in secondary cities. It analyzes the institutional, economic, and social dynamics and conditions in secondary cities and their impact on the environmental health of populations. Several country experiences are presented as examples where effective relationships were created between government and client communities to address—in a sustainable fashion—the environmental health conditions. The paper gives policy recommendations to improve and implement more effective development programs in secondary cities in West Africa with the ultimate goal of improving people's lives.

Secondary Cities in West Africa: The Challenge for Environmental Health and Prevention

by **Dr. May Yacoob**, Senior Social Scientist, Research Triangle Institute
and **Margo Kelly**, Assistant Activity Manager,
Environmental Health Project

Introduction

Secondary cities are the nexus between rural and urban areas. They are more numerous than megacities, which previously have been focused on; and they also provide the greatest challenge and opportunity. Secondary cities in today's West Africa were rural villages thirty years ago, so their housing, water, sanitation, and public health infrastructures are often very poor or nonexistent. Moreover, their populations have more than quadrupled, causing environmental mismanagement, resource depletion, and security threats.

Addressing issues of secondary cities requires new vision, policies, and approaches. Governments must work with local and traditional management systems and structures already in place. Effective partnerships have to be created to bring together different sectors and go beyond the "bottom up" or "top down" clichés, using both approaches to obtain effective results.

This paper describes the concept of environmental health and the related preconditions for disease prevention in secondary cities. It analyzes the institutional, economic, and social dynamics and conditions in secondary cities and their impact on the environmental health of populations. Several country experiences are presented

as examples where effective relationships were created between government and client communities to address—in a sustainable fashion—the environmental health conditions. The paper gives policy recommendations to improve and implement more effective development programs in secondary cities in West Africa with the ultimate goal of improving people's lives.

Misunderstood Phenomenon: Secondary Cities that are Neither Urban nor Rural

In 1990 about a third of the population in developing countries (which is 12.5 percent of the world's total population) lived in cities with a million or more people. However, in the past decade, many new cities with less than a million inhabitants have emerged. The largest number of cities in developing countries are those with populations of under 200,000 inhabitants (Hardoy, Mitlin, and Satterthwaite 1992). These secondary cities will continue to multiply. By the year 2020, the population of Sub-Saharan Africa (SSA) is expected to double, thus, becoming the fastest growing region in the world.

While the number of people in Africa doubled between 1950 and 1980, the urban population increased *fivefold*. During the same time frame, many people migrated from rural to urban areas, which often resulted in huge slum or "peri-urban" settlements in the capital cities. Rural behaviors and attitudes persist in these neighborhoods for several reasons (Kruger 1998):

- Normally not all members of the lineage or "family" move out of the rural residence at once. The tendency is for men to leave first and then women and children. With time, men, youth, and all able-bodied family members then move back and forth between the rural and urban areas to farm land—for subsistence and cash crops—and to tend livestock. This means that many secondary cities in the region are primarily residences for women, children, and the elderly from rural areas.

- People who move to peri-urban and secondary cities where they can find work often continue to farm land and keep animals in their rural residence. Because of the reduced capabilities of the state and government in these regions, survival in urban secondary cities is closely linked to the ability to obtain resources from rural areas. The rural assets serve to safeguard the livelihoods of dwellers in secondary cities. This is the opposite of the trend a decade ago, when the rural lineage survived only because of the urban connection.

- Secondary cities in West Africa today still maintain traditional pre-colonial administrative structures. With the colonial overlay, these institutions became more formalized, and now, the traditional administrative structure enforces the rural behavior patterns and norms, and the formal administration enforces the more urban behavior patterns and norms through the legal system.

Rural Behaviors in Urban Settings

Helping local officials understand people's behaviors in relation to housing and sanitation requires socio-environmental assessment. For example, one community was settled by a tribal group that breeds camels for use by tourists. Livestock for them is not only a means of livelihood, it is also a cultural link among the tribal group members who settled in the area. Not surprisingly, health problems resulted from families and animals sharing cramped one- and two-room dwellings. Had local officials reacted by trying to take away the animals, they would most likely have been met with strong opposition.

In another instance, local officials issued directives regarding refuse and placed garbage bins throughout the neighborhood. They tried different types and sizes, and placed them in various locations; however, the bins remained largely unused. From field assessment interviews, it became clear that the women did not use the garbage bins because, in accordance with their herder tradition, organic waste is thrown out to the camels and sheep to feed them. Instead of lecturing these people about how to use the garbage bins, local officials began to explore ways residents can corral animals to reduce the garbage problem and accompanying health hazards.

The Institutional Landscape of Secondary Cities and Its Impact on Defining Environmental Health

Environmental health focuses on disease transmission routes rather than on how people are treated once they are sick. The classification of transmission routes, rather than the diseases themselves, is the important conceptual framework: because disease can be transmitted by more than one route, the unit of analysis must be the whole community (not just the sick individual) and its behavior and interaction with the environment and resources.

This conceptual framework has produced the prevailing view that community-wide behavior must be addressed first and then individual behavior. Individual behavior change is only relevant as part of community action to control disease transmission by environmental modification. For example, if the community-wide defecation behavior causes fecal contamination of food and water, then the entire community has to change its behavior. If one or two households dispose of their fecal matter properly, this is insufficient to protect the entire community's food and water. Similarly, the treatment of one person infected by fecal contaminated food and water does not address a community-wide problem. Thus, the solution has to be community-wide prevention of fecal matter contamination of water and food.

Providing new infrastructure—as development agencies have learned—is not the "silver bullet" to achieve community behavior change. For instance, how people choose to defecate often has nothing to do with whether or not there are latrines. Frequently latrines are available but people may not use them because they are poorly constructed, badly situated, or mismanaged. Or it may simply be that people prefer to defecate in an open field rather than in a dark smelly structure.

Cairncross et al. (1996) have made an important contribution to the community concept in environmental health. They make a distinction between disease transmission occurring in the domestic domain, or household area, and in the public domain, which includes work, school, commerce, recreation, and public spaces; this would also include waste and sewage disposal, water, air, and animals used by the community.

The concept of the domestic domain, however, is not necessarily limited to the interior of family dwellings. Secondary cities contain neighborhoods where often members of the same lineage, ethnic grouping, or family have settled. Here, domestic work and bathing are done outside the house, in the public domain. Thus life, culture as defined by the group's affiliation and identity, and behavior are clearly at the very center of environmental health.

The nature of the culture and behaviors in secondary cities presents great challenges for effectively addressing environmental health problems. For example, local and traditional institutions that govern neighborhood life and health behaviors are totally separate from and run parallel to public sector formal institutions and their policies and regulations affecting environmental health conditions. Traditional authorities in these neighborhoods have always defined life, identity, justice, and the division of labor. Religious authorities continue to administer their traditional beliefs along with the accompanying waves of change and adaptation. Traditional healers and birth attendants continue to be the front-line health workers whose services are sought before those of the formal system. This is borne out by the fact that in many secondary cities the formal health systems are rarely used by more than 25 percent of the population. The remaining 75 percent are clearly consulting traditional providers. The entire well-being and protection of the land is entrusted to representatives who are often referred to as *maîtres de terre, or* "owners of land," who are the administrative and local managers of the neighborhoods. Where, then, does the formal administrative system fit in?

The formal administrative system or government has always existed side-by-side with traditional authorities. In SSA secondary cities, government operations and administration mirrored their colonial predecessors. Public administration capacity building focused on how those within the structure interacted among themselves or with central authorities and was rarely based on the real context or problems that the local client communities had to resolve. This resulted in poorly functioning government models and programs and policies that were based on poor performance (Tendler 1997).

In addition to the formal and traditional administration systems, there are also informal social networks that have been established to address urban needs. This is not a new concept in West Africa (see Yacoob 1984 and Vevtzion and Fisher). Recent work by Fall (1998) describes such associations as "shock absorbers" against economic and social crises. They are based on informal groupings, professional apprenticeships, or religious affiliations. Religion is often the most dominant cultural grouping and has always provided adaptive transition affiliations for those moving to secondary cities. Such associations also group people from the same village or ethnic background who fulfill different formal and informal market roles. These cross-cutting affiliations play a key role in affecting behavior, defining and supporting new ideas, and, most importantly, providing financial resources for necessary infrastructure in secondary city neighborhoods. For instance, "community banks" in Nigeria, which finance local infrastructure, sprang from associations based on common rural ties (Mabogunje 1998). The role of these associations and networks is not to replace the existing formal or informal institutions, but rather to try to breathe new life into them. Consequently, they are a force in secondary cities that must be understood and effectively utilized.

The Main Links Between Health and the Environment

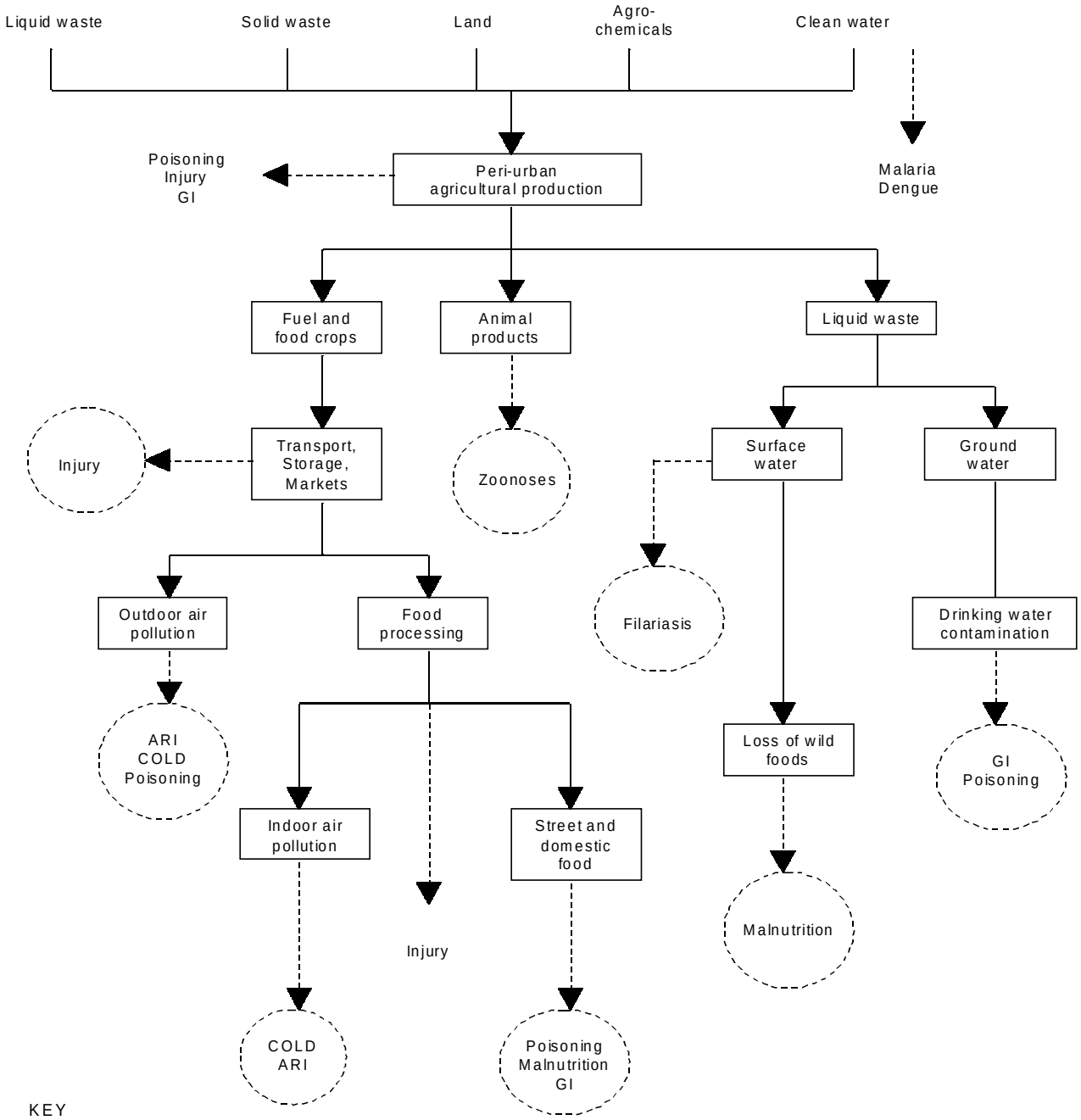
The most immediate environmental problems in the world are the ill health and premature death caused by biological agents in the human environment--in water, food, air, and soil. They contribute to the premature death of millions of people (mostly infants and children) and to the ill health or disability of hundreds of millions more.

The problems are most acute in Third World countries where four million infants or children die every year from diarrheal diseases, largely as a result of contaminated food and water; two million people die from malaria each year and 267 million are infected; and hundreds of millions of people suffer from debilitating intestinal parasitic infestations. In addition, all countries have serious environmental health problems, affecting hundreds of millions of people who suffer from respiratory and other diseases caused or exacerbated, both indoors and outdoors, by biological and chemical agents in the air; and hundreds of millions who are exposed to unnecessary chemical and physical hazards in their home, workplace or wider environment.

Health also depends on whether people can obtain food, water, and shelter; over 1000 million people lack the income or land to meet such basic needs.

Source: World Health Organization, *Report of the WHO Commission on Health and the Environment: Summary*. Geneva: WHO/EHE/92.1.

Health Linkages to Natural Resource Use



KEY

ARI = Acute respiratory infection
COLD = Chronic obstructive lung disease
GI = Gastro-intestinal infection

Source: *Environment and Urbanization*, Vol. 10, No. 1 (April 1998): 93.

The Minimum Environmental Health Package and Appropriate Infrastructure

> Many of you have heard the allegory about the physician who describes to his friend a recurrent dream or nightmare. In his dream the physician finds himself walking along a riverbank when he hears a cry for help from someone drowning. He jumps in, rescues and resuscitates the victim, but immediately another person cries out for help and the scene repeats and repeats. Finally, the physician tells his friend, he realizes that he had been too busy pulling people out of the river to go upstream to see who was pushing them in! (Cline 1994).

Much effort has been directed at saving the drowning, at playing catch up in terms of providing "coverage." The number of latrines, water systems, and other environmental interventions aimed at impacting disease was the driving force of the past decades. There were few tools and little time to assess the impact of and review strategies. As donors and implementing agencies, we counted the number of children rehydrated from severe diarrheal diseases, giving little attention to the environmental conditions we sent them back to.

The persistence of communicable diseases in SSA secondary cities continues to be a serious constraint on poverty alleviation (see the flowchart, which outlines health linkages). A recent study in three secondary cities in Benin found that diarrhea disease rates among children under five cause mothers to lose seven to ten work days per month. Morbidity rates from communicable diseases in SSA are the highest in the world when measured in disability adjusted life years (World Bank 1993). On a human level, this means that to survive in this region, children must endure unsanitary conditions and the associated persistent worms, diarrhea diseases, respiratory infections, and malaria. For expectant mothers, miscarriages, due to unsanitary conditions and frequent long-distance hauling of heavy water and fuel, are estimated at four times higher than in other regions or capital cities. The interplay of these factors contributes to high birth rates. The relationship of environmental factors to morbidity from communicable diseases in SSA secondary cities is well documented and tied to five basic practices: proper disposal of fecal matter, protection of food from fecal matter, protection of water from fecal matter, reducing mosquito breeding sites, and protection of humans from mosquitoes.

It is important to note that there is no specific mention of latrines or water systems. This minimum "Environmental Health Package" instead focuses on necessary behaviors and local management systems. These five simple actions can result in marked improvements in the living conditions of mothers and young children. Striving for this minimum Environmental Health Package does not necessarily mean construction of major infrastructure, but rather how infrastructure is developed in relation to people's behavior. In other words, the discussion should not be about whether water and sanitation systems are necessary—they are; instead, the focus should be on how these systems are designed and constructed so they can be the basis for health improvements. In the early part of the 1980s "water decade," many assumed that putting water systems and latrines in place would automatically produce health improvements. Some recent findings from a West African project, aimed at improving municipal and community management of communal infrastructure, strongly indicate that infrastructure alone does not result in health improvements.

The table below is drawn from a baseline study of environmental risk factors in three secondary cities in the Department of Borgou in Benin. The first town, Parakou, is the Department capital and the second largest city in the north of the country with main roads passing through it to Nigeria, Niger, and Togo. The other two towns, Banikoara and Bembereke,are both typical secondary cities with economies based on subsistence farming, cultivation of cotton—a cash crop, and individual commerce. Additionally, in Bembereke, families supplement their household incomes by hosting people (from both Benin and Nigeria who are of the same ethnic group) who use the hospital, which has no in-house residence for patients from out of town.

Benin Baseline Findings from Three Towns in the Department of Borgou
Water and Sanitation Coverage and Behaviors--Percentage per Town

Variables	Parakou (%)	Banikoara (%)	Bembereke (%)
Running Water	40	10	6
Courtyard Pumps	60	20	56
Community Wells	10	40-50	19
Covered Wells	80	20	16
Storage of Drinking Water in House (Safe)	90	<40	<3
Waste Disposal - Solid	80-90	<40	<10
Latrines	50	15	23
Public Latrines	40	<10	<10
Bush	<10	80	90
Pots for Children	60	30	76
Animals: "Non-Domestic Animals" (Observed and Reported)	30-40	70	51
Reported Diarrhea	30	45	44
Days Lost Tending Children	Average 7-10 days	Average 7-10 days	Average 7-10 days

An interesting finding from the study is that the risk factors for communicable diseases vary from town to town. For example, less than 10 percent of households surveyed in Parakou use the "bush" for defecation. In Banikoara and Bembereke, 80 to 90 percent of those surveyed use the bush. Other indicators, such as availability and protection of potable water and household and public latrines, show that the overall infrastructure in Parakou is much better than in the other two towns. Yet, the baseline study found that the rates of diarrhea in children under five in all three towns were very close, 35 to 45 percent. The days mothers spent tending children with diarrhea was also the same in all three towns. This supports the argument that availability of infrastructure alone does not necessarily prevent disease.

While the availability of infrastructure does not guarantee a reduction in disease prevalence, having this infrastructure is a necessary prerequisite for a certain level of security and equal access to services, especially for women. It has been well documented that women's lives are impacted the most from a lack of infrastructure. For instance, in West Africa, women spend an average of 4.5 hours per week drawing water. Of course, this varies depending on the season and region; data from Senegal show that women spend almost 17.5 hours per week drawing and carrying water (UN 1991). Other studies show that women spend an average of 4 to 6 hours per week searching for fuel, frequently walking up to 25 km (Lewanhak 1998). The subsequent impact on women's physical health and time away from their children cannot be easily dismissed.

The trends cited earlier, such as rural/urban migration and the lack and improper use of basic infrastructure, are contributing to the increase in infectious disease rates. With burgeoning world population, we also face the threat of diseases being easily transported from one region or continent to another. The nature of secondary cities in SSA, their growth, and the lack of services has also meant that diseases, such as HIV/AIDS, frequently go unmonitored, misdiagnosed, and misreported. Other diseases, once assumed to be under control, such as cholera, yellow fever, and tuberculosis, have become part of the epidemiological "scenery" and are not widely reported. The human consequences from these new and reemerging diseases have been severe. Ill-equipped communities are struggling under the burden, children-headed households are an increasingly familiar phenomenon in low-resource communities, and the public sector has done little to deal with such high-risk groups.

In discussing the environmental health conditions in secondary cities in SSA, we cannot ignore the consequences of the HIV/AIDS epidemic and its potentially grave impact on development and security. The reality of the situation is actually much worse than what had been predicted: one out of every 10 adults is infected (UNAIDS/World Bank 1998); by the year 2010, up to 13.5 percent of children under 15 will be orphaned (Hunter and Williamson 1998). Coupled with the displacement of children from other causes, such as natural disasters, wars, and genocide, the number of orphaned children will be extraordinary in some countries. For the past decade, communities alone have borne the burden. This is starting to change. The serious social and economic dislocation that results from this large and growing population of children will require innovative locally-based solutions and policies. Communities will need the help of the state to address these growing emergencies.

Case Studies for Addressing Environmental Health Problems in Secondary Cities in SSA

Akin Mabogunje (1991), one of the first and most prominent urbanists in SSA, once said that urban development in Third World countries is like building a house from the roof down. All the institutions of modern urbanization are there: the health system (although drastically underutilized), administration, legal system, and usually basic infrastructure (water, sanitation, roads, markets, etc.). However, these institutions remain suspended over most SSA societies, which have yet to establish firm relations with them. At the same time, parallel indigenous institutions lack the necessary scaffolding to erect themselves into effective modern structures.

Neighborhoods are important organizing factors in SSA secondary cities. They play an important unifying role for the culture, ethnicity, and behavioral patterns that affect the health of local populations. For neighborhoods to serve this role, though, there must be real decentralization of power and decision making. To achieve this, the mode of operation and city stakeholders' behaviors must change. People must focus on problem solving and building capacities, which allow the informal and traditional sectors and institutions to play an important role.

Since 1990, through the Environmental Health Project, USAID has funded an initiative called CIMEP—Community Involvement in the Management of Environmental Pollution. It has been implemented in Latin America, the Caribbean, North Africa, and now in SSA in three secondary cities in Benin. Other donors and implementing agencies in the region, specifically the UNDP's Urban Management Programme and the African Development Bank, have collaborated and shared information in this initiative. The operational concepts of CIMEP are now being developed to address the social and economic consequences of HIV through the Alliance of African Mayors.

The CIMEP initiative trains local authorities to define problems, solve them, and create partnerships with community neighborhoods. The approaches and tools used are all targeted toward development of local governments and traditional structures capable of generating sustainable solutions to local problems. CIMEP does not advocate any particular "intervention" as a solution; instead it begins by creating cross-sectoral teams that learn how to analyze problem-area causal factors. This process is grounded in the identification of local problems and solutions in the context of adaptive belief systems and behaviors. In conjunction with this, indigenous institutions and authorities are partnered with the local government (and its resources) and work to change behaviors and sustain local interventions.

The CIMEP process is not new. Other donors and bilateral organizations are recognizing that they can achieve real results through understanding and responding to local causal factors. Consequently, donors should not focus on numerical inputs, but rather on the problem definition processes and people's lives. UNDP's initiative called LIFE (Local Initiative Facility for Urban Environment) is one such example. These types of processes, which work with community needs and local authorities—both traditional and government—to create partnerships aimed at problem solving, are showing great promise.

The sections that follow describe the CIMEP components and how they work, and how CIMEP is being implemented in Benin to create the environment and processes for cross-sectoral and decentralized problem solving aimed at prevention and public health improvements. The third section will describe the results obtained in Tunisia and Ecuador from implementing the CIMEP approach. In Tunisia, building infrastructure that responded to people's environmental needs cost markedly less than that built by municipalities which did not take these needs into consideration. In Ecuador, there was a substantial reduction of cholera cases through implementing interventions based on understanding local needs and behaviors. The final section analyzes these accomplishments and the changes in governance, decentralization, and capacity building that were necessary to make them happen.

CIMEP Case Study: Benin

CIMEP Goal	CIMEP Approach
CIMEP's goal is to improve the extension, maintenance, and management of public services such as the provision of drinking water and electricity, sewage management, garbage collection, and refuse recycling to improve the environmental heath conditions of the peri-urban poor.	The CIMEP approach is to build capacity among municipal service directors, elected officials, and NGOs to work as partners with communities to plan and implement services improving environmental health.

The Benin project was inaugurated at a start-up workshop held in October 1997 and attended by representatives of all the stakeholder groups—communities, NGOs, other projects, donors, and local, departmental, and national levels of public administration. At the workshop USAID, the Environmental Health Project (EHP), and the Prefecture of Borgou signed a Memorandum of Understanding (MOU).

CIMEP is currently being executed as a pilot activity in the three cities of Banikoara, Bembereke, and Parakou in the Department of Borgou. These cities were selected from among Borgou's fourteen largest towns according to the following criteria: presence of environmental pollution risk factors; potential for mobilizing human and financial resources; prevalence of specific diseases; and socioeconomic factors, such as community cohesiveness and homogeneity.

With the signing of the MOU, the departmental and sub-prefectural authorities were committed to the project and involved in its execution. This commitment has enabled the sub-prefects and their collaborators to place CIMEP teams in the three neighborhoods hardest hit with environmental health problems.

The three CIMEP teams work with the 2,292 households of nine neighborhoods—three from each of the three cities. Each team is composed of seven members: three neighborhood representatives, one representative from an NGO working in the city, and three representatives from the government departments of health, environment, and administration.

With the participation of the communities and the oversight of the Departmental Environmental Health Committee (DEHC), the CIMEP teams develop and promote a community-based approach. They plan, facilitate, and monitor the activities undertaken jointly by the administration, the communities, and civil society representatives. They are responsible for community identification of environmental health problems; joint determination of solutions to problems identified; joint implementation of solutions identified; and the development and implementation of a monitoring and evaluation system.

The CIMEP project in Benin is composed of five phases: problem identification, solution development, microproject planning, microproject implementation, finalization, and scale-up. The steps undertaken by the CIMEP team, working with the project manager, are roughly the same for each phase: CIMEP teams conduct capacity-building training; new skills are tested in a neighborhood outside the project zone; coordinators of the three teams develop a joint plan for implementing the activities of the phase; each team develops a plan and prepares for undertaking the activities; each activity of the phase is executed; after each activity is implemented, the team synthesizes results and assesses lessons learned; and, at the end of each phase, the CIMEP teams report to the DEHC at a roundtable.

To date, CIMEP teams have implemented the first two phases of the project. Two capacity-building sessions were conducted with the twenty-one CIMEP team members. The first session, held October 13-16, 1997, gave the teams the techniques to enable them to gather information and conduct participative diagnosis of problems. The second, held January 12-16, 1998, taught them techniques to analyze health problems and determine solutions with communities.

CIMEP teams facilitated community use of the following tools to identify community environmental health problems: rapid delimitation of the neighborhood, community mapping of environmental health problems, historic profile of the neighborhood's health problems, Venn diagram of neighborhood institutions, focus groups, and participative home observations.

As an example of the results produced in the neighborhood of Koiré, in the city of Banikoara, the following problems were identified: stagnant wastewater from wash areas, defecation in public areas, consumption of nonpotable water from wells, public dumping of household refuse, and storage of drinking water in uncovered jars.

In the second phase, CIMEP teams worked with the communities to analyze the problems. First, they prioritized the problems and selected the three considered to be the most important. Then, using the Tree of Causality process, they explored the causes and effects of the problems. With the Tree of Solutions, they identified potential actions to resolve the problems and their impacts. CIMEP team procedures include a process of systematic self-evaluation and problem solving. In an assessment of their implementation of the first two phases, the CIMEP coordinators completed the evaluation matrix.

After implementing the first two phases of CIMEP in Benin, the CIMEP team coordinators came to the following conclusions: (1) the tools for participatory analysis and diagnosis are adapted to the context, especially the neighborhood map and Tree of Solutions; (2) the CIMEP teams, because of their composition, were able to reinforce collaboration and play a catalytic role among the administration, communities, and NGOs; (3) the CIMEP tools resulted in strong community participation and contributed to community realization of the precariousness of their health conditions, as well as their capacities to resolve community problems; and (4) the planned activities were completed within the six month period, with the exception of one of the neighborhoods.

Project activities are monitored and supervised by the DEHC, which is chaired by the Prefect of the Borgou Department. Committee membership consists of the departmental directors for the ministries of health, planning, and environment, as well as the mayors of the three cities and the subprefects for their administrative divisions. The committee meets in roundtables of decision-makers to evaluate the project and provide assistance where needed. It also visits the sites of the project every two months with the intention of supporting the CIMEP teams and encouraging communities in their work.

CIMEP Case Study: Tunisia

From January 1995 to September 1996, USAID's Environmental Health Project implemented a CIMEP initiative in two towns in Tunisia in collaboration with USAID's Regional Health and Urban Development Office (RHUDO) there. The objective of the project was the creation of partnerships to extend municipal services to underserved peri-urban communities. Municipal teams created in two pilot towns went through a series of skill-building workshops while parallel policy-maker round tables were conducted. Workshops covered teamwork, communications skills, training and facilitation techniques, identifying high-risk behaviors, and monitoring changes in environmental health conditions. The training process takes approximately eighteen months.

Peri-urban poverty is more complex than the provision of infrastructure, which often is not used because it is out of step with local conditions and behaviors. Although most ordinary people come in contact with government only at the municipal level, municipal staff may lack the skills necessary for interacting with people, especially for communicating with peri-urban communities, finding out what their problems are, and gaining an appreciation for the resources and capabilities they can apply to finding solutions. Under the CIMEP model, the provision of infrastructure is based on actual health behaviors, practices, and environmental conditions. Local neighborhood-level managers are charged with ensuring the appropriateness of the infrastructure installed, its continued maintenance, and its use over a long enough period of time to improve public health conditions. There were also changes in municipal behavior, as listed in the table below, as a result of the CIMEP project.

Changes in Municipal Behaviors

Conventional Behavior	CIMEP Behavior
Activities are sector-specific.	Activities are cross-sectoral.
Planning is done within the municipality.	Planning is done within communities.
Staff provide services.	Staff facilitate and enable.
Stakeholders are informed of decisions.	Stakeholders are brought into the decision making process.
Activities are crisis-oriented and problem-focused.	Activities are based on community vision and capabilities with technical support from municipalities.
Decisions are made within the bureaucracy.	Decisions are made through consultation and consensus building.

Municipal staff training, with the follow-up practicums, is the heart of CIMEP. Three other components are also part of the methodology:

Socioenvironmental study. Before training begins, an assessment is carried out to identify local resources and institutions as well as the sociocultural conditions that contribute to environmental health problems. Both quantitative information from official sources and qualitative information obtained through rapid community assessments are used.

Decision-makers meeting. At the end of each round of workshops and practicums, a one-day decision-makers meeting is held to discuss the issues that constrained the work of the municipal staff in the communities and the best ways to remove those constraints. The issues are likely to be in the areas where institutional changes might be required or legislative action needed.

Funding for microprojects. Funding for small neighborhood-level projects provides experiential learning in resolving environmental health problems and is also a mechanism for strengthening the administrative and financial capabilities of nongovernmental organizations, for they administer the microproject funds. The microprojects give neighborhood residents something to bring to the table when discussing their problems and priorities with the municipality.

Application of the approach led to housing improvements, road and bridge construction, and garbage container distribution. These improvements cost less and were of higher quality than similar projects implemented by the municipality. Local communities began to understand the impact of the environment on their health, and made changes such as corralling animals, building latrines, and using trash containers. Municipal officials began to adopt participative methods in working with communities. There was a shift in thinking: municipal managers came to recognize that poor communities do have resources and can be part of the "solution," not just the problem.

At the conclusion of EHP's involvement in this project, the Tunisian government asked for and received loans from the World Bank to replicate the process in other towns and provinces.

Interview with the Mayor of Kasserine, Tunisia, as reported in *La Presse,* June 13, 1996.

"A New Method of Local Governance"

Q: How was your city chosen to take part in the CIMEP project?

A: There's no mystery here. Kasserine was selected by the Ministry of the Interior for two main reasons: first, because of the many problems it needs to solve and, secondly, because of the dynamic team of local leaders. Well before the CIMEP project, we were already looking to get private citizens more involved.

Q: Exactly why do you consider community participation so important?

A: I am speaking to you here from experience. Spending more means nothing without community participation. The more you get the general public involved in the governance of their community, the more you can move the city forward, depending on the group involved. If you know the people are with you, you can feel confident that, even if you're not there, your work will go on...

Q: What sort of results have you achieved?

A: Let's take the example of a neighborhood with clearly defined boundaries. We hold community meetings where we allow the public to sound out their problems (problems involving the environment, latrines, trash cans, waste, etc.). . . The public is made aware of the means at our city's project. . . You realize that it is growing resentment or discontent which kills a city. A private citizen will not always understand the reasons why the city repaired his neighbor's street, for example, and not his. By getting him involved in the governance process, we give him hope that his turn will soon come. As far as I am concerned, the results we've achieved are so encouraging that I feel that this experience should be replicated on a larger scale.

CIMEP Case Study: Ecuador

Despite the general success of national programs to reduce or eliminate cholera, high rates persisted in certain Ecuadorian provinces (characterized by densely clustered indigenous or peri-urban populations). From October 1994 to October 1995, EHP worked with USAID/Quito and the Ministry of Health to identify behaviors and beliefs that increase the risk of cholera. Regional and community health teams were formed and trained to analyze local beliefs and behaviors in indigenous communities and, in conjunction with community members, to design suitable interventions.

The objectives of this activity were to identify types of behaviors and beliefs associated with potential increased risk of cholera, to gather and analyze data on environmental and cosmetic health behavior, to develop and implement forms of intervention, to change the types of behavior identified as high risk; to develop a monitoring system; to train local people to continue the monitoring; and to document activity results for broader distribution.

Four communities in two states with high prevalence of endemic cholera were identified for the activity. Two state-based Regional Teams and four Community Teams were assembled. Over a period of five months, three separate weeks of workshop were held to train the Regional Teams, who then trained the Community Teams. In all, fifty-five people received training. The Community Teams analyzed local belief and behavior and, in conjunction with the community members, designed interventions. Three core behavior clusters were winnowed from the qualitative and quantitative data gathered in the four communities: (1) quality of stored or piped-in water; (2) washing and drying of hands and washing of food and dishes; and (3) disposal of excreta. Although the specific interventions varied slightly, all four communities chose to secure household water tanks, develop a community health education campaign aimed at water storage, maintenance and cleaning of water tanks, and disseminate information about infectious disease.

The activity produced a core of committed national and regional professionals (and NGO staff) who are experienced in using the CIMEP model, a replicable methodology for community-based research, public health interventions designed and monitored by the communities themselves, a manual on latrine use and maintenance, health education activities focusing on infectious disease, and a brief video on the process.

A post-project assessment of the Ecuador activity was conducted in 1996 (Whiteford, Laspina, and Torres 1996). It documented improved hygiene practices and significant health benefits. Under the project, community teams identified high-risk behaviors and beliefs, collected baseline data, and designed and carried out interventions to change identified behavior. The key interventions were chlorination of drinking water, safe storage of water in “bidons” provided through the project, and hygiene education on hand and dish washing, food preparation, and latrine use and maintenance.

Behavior changes documented in the assessment, which repeated the baseline survey data gathering and observation in sample communities, include an increase from 36 to 70 percent in households using only purified water for cooking; 6 to 100 percent in households storing water in safe containers; 50 to 77 percent in persons washing hands properly after defecating or urinating; and a decrease from 69 to 5 percent in the number of children and adults defecating in fields. Overall, increases in personal and community cleanliness were observed.

The assessment also evaluated the effect the changed behavior appeared to have on health. The number of persons with acute diarrheal disease visiting local health facilities before the project was compared with the number visiting after. In project communities, cholera cases fell dramatically. For example, in one community there were 94 cases in 1993, 40 in 1994, but none in 1995 and 1996; in another, there were 32 cases in 1993, 19 in 1994, but only 2 in 1995 and 1 in 1996. No project community has had a cholera death in the past two years. Although not all these health improvements can be indisputably linked to project activities, the data collected suggest a substantial positive impact.

CIMEP's Approach to Capacity Building: Creating Good Governance

Ensuring the health and security of communities in SSA secondary cities requires increasing the capacity of local governments to better identify environmental health problems and their causal factors. Because of variability, this must be done neighborhood by neighborhood using problem-solving processes based on trust and dialogue. Both top-down and bottom-up approaches must be used. A new paradigm of how state and civil societies interact must be adopted. It must be based on better understanding and incorporation of the traditional and the informal forces that have helped communities survive. CIMEP provides a methodology or means to actualize this new paradigm through training and dialogue that builds partnerships between neighborhood people and government administrators.

The CIMEP project in Benin conducted observational research to better understand the governance and institutional issues addressed in the process. The research looked at: (1) how the relationship between the government and the community is developed; and (2) how ownership of the process evolves and administrators incorporate it into their way of doing business.[1]

The CIMEP process creates municipal cross-sectoral teams (in targeted towns and neighborhoods) that bring a multidisciplinary perspective to the problems communities face. The approach also encourages increased collaboration among environmental health actors. To support these teams, department-level policy makers are brought into the process and clearly have a distinct role to play vis-à-vis communities. In the CIMEP process, the municipal team leaders (who generally come from the communities) report on the community concerns to department-level policymakers, thus establishing a bridging mechanism between government officials and community members.

Citizens become more able to articulate environmental health problems and present requests for assistance to government officials. This improved collaboration results in solutions that are appropriate to the local context, supported by government officials, and, therefore, more viable and sustainable. This process of good governance, developed through CIMEP, has been described by the following five behavioral areas:

Government Perception of Communities. The expected change: from seeing poor communities as passive, distant, hopeless, to seeing them as a source of ideas, skills and capabilities for definition and solution of problems. Also, seeing them as clients and people they need to be responsive to.

Problem Definition. Components of problem definition: identification, initial analysis and prioritization among problems, site location, articulation. The expected change: communities move from being told what they need by outside people, to community institutions defining problems.

Planning and Determining Solutions. Need integration of site-specific data in technical plans, integration of community institutions in planning for maintenance, and consideration of local institutional context in solutions. The expected change: communities move from being told what they need by outside people, to community institutions defining solutions.

Management Structure. Requires hands-on management of local infrastructure needs; decision making on the nature of labor (local or contractual); decision making during implementation along with components of financial management; preparation of budgets; keeping books; keeping money; and determining contributions. The expected change: microprojects are managed by the community to a greater extent than other environmental health projects in the country.

Coordination/Communication among Actors. Having meetings, their frequency, the role that the participants play, who sponsors the meetings, who chairs, and the openness of the discussions. The expected change: meetings become more frequent and open.

In Benin, the civil servants trained in the CIMEP municipal teams showed remarkable change: they started to represent the communities in which they worked, becoming lobbyists for them, making arguments, saying "we found that the government is at fault for...." Members of the Benin CIMEP municipal team started out by expressing their aversion to visiting communities: "People are always coming up to us to ask for things." As members of the government administration, they have a problem: It is hard to accept the idea that you have "clients" if you do not believe that your resource-scarce government has anything to offer. After six months in the CIMEP process they were drawn into the perspective of the community members. As local government officials, they all felt pride in standing before their superiors and discussing the communities and their ideas. The

CIMEP process gave them a structure in which to work with these clients. As a result, these officials have discovered a community's dynamic potential, tapped into their ideas, and, with the microprojects, know that they have participated in formulating solutions that work for their clients.

As SSA governments shift from static and centralized to decentralized structures, creative processes for forging partnerships will be necessary. Communities, and their own traditional institutional mechanisms, will continue to resolve municipal problems themselves, while also helping to transform artificial administrative structures that currently ignore their efforts. With this decentralization process, strong communities have the potential for making SSA secondary cities centers of effective governance. Government officials must recognize the capacity of this informal and traditional sector, harness its positive forces, and provide supportive mechanisms necessary for its survival. This process may start with an environmental health focus but can end up ensuring internal mechanisms and strengths that enable local communities to survive.

Findings and Strategies

There is an interrelationship among the need for infrastructure, its proper use, and diseases. Infrastructure without people at the center fails. Mega-infrastructure projects have not resulted in the anticipated health improvements. These projects provided elected officials with political visibility but often had no maintenance or community component and, consequently, showed few or only short-term benefits. In secondary cities public authorities often just wait for the arrival of another "project," with very little awareness of or skills to focus on these projects to address community needs and life patterns. Institutional and infrastructure issues are targeted while individual needs are forgotten.

Although much progress has been made since the 1980s, when the focus was solely on building water and sanitation systems and developing institutions to run them, issues of capacity building, local responsibility, and community-level management of these systems are still not being fully addressed. That said, there should be major policy shifts in the development field in regard to secondary cities, environmental health, and community involvement. Implementing agencies, including USAID, should consider the following:

1. *Environmental health must be addressed cross-sectorally by local ministries.* Since environmental health requires attention from both the ministries of health and environment—along with the ministries of planning, education, interior, and others—a cross-sectoral approach must be used. The complexity of environmental health (which, though, can be addressed through simple solutions) requires coordination of local actors capable of working together to bring about solutions to local problems that have an impact on the health of communities. The interrelationships that exist in people's lives in secondary cities require innovative approaches to institution and community building.

2. *One size does not fit all.* Development practitioners have learned that a certain "technology" is not going to achieve the same results everywhere. Increasing peoples' options involves recognizing the different needs (of women, men, children, the elderly, poor, etc.) and priorities within any local population. For example, women may be more interested in the convenience and location of latrines while men may be more concerned with the cost. Both are important and should be considered in building local sanitation services. What technology is finally used should depend on the input of various stakeholder groups.

3. *Increase people's participation*. This is closely linked to point two because it means increasing the options open to people and the decisions they make about types of infrastructure that they can support. Frequently, for the poor in secondary cities, these decisions are made in the capital by others.

4. *Bring local authorities closer to people.* If communities could take care of all their water, sanitation, and solid waste needs they would have done so long ago. Local authorities, too, have not provided adequate services. They lack the necessary skills for analyzing local solutions and ignore local capacity and social structures. Furthermore, authorities, themselves, are usually distant from the client communities, which leads to a lack of trust. Local authorities and communities must learn new skills and approaches to build partnerships and work together.

5. *Work horizontally and move beyond predefined boxes*. Development projects are most easily implemented within one group: an NGO, local ministry, or community-based organization. For environmental health solutions, all these stakeholder groups must contribute. The challenge is to create effective work teams with all members contributing their talents and skills to defining and implementing solutions.

6. *Promote effective decentralization.* Decentralization must encompass more than a shift from central ministries to local departments. Community needs have to be defined and then government policies and mechanisms established for allocating resources to them.

7. *Promote resource allocation and transparency.* Resources must be made available, and this must be done in a transparent manner. Resources can help provide experiential situations for redefining roles and responsibilities of local authorities and other partners. How these funds are to be replenished is also important. Cost-recovery mechanisms have to be embedded in the cultural and institutional capabilities of the local people. Concepts of credit, equity, collateral, and repayment should be based on indigenous values and institutions. Although identifying these culturally appropriate mechanisms takes time, the result is a more secure and sustainable process.

8. ***NGOs are not a substitute for local government***. NGOs have become an easy way out for donors. In some countries they have stepped in as a donor, and in others, they have functioned as the government. Neither role is appropriate. NGOs are a means, not an end. They need to redefine their role as intermediaries and acquire the necessary skills to fulfill that role.

Policy Implications

Despite remarkable gains in achieving infrastructure coverage during the 1980s "water and sanitation" decade, the child survival revolution, and the increased availability of condoms, the health impact and disease prevention disease has not occurred as donors had anticipated. This is especially true in the SSA secondary cities discussed here. All these programs are still necessary; however, they have failed in certain areas, and this must change. To ensure long-term success and sustainability in addressing disease causal factors requires transforming the local institutions and behaviors that have long helped urban centers in West Africa survive. The issue is not whether commodities are available. Rather they must be used effectively and integrated into people's living environments.

Reaching populations of SSA secondary cities is both a challenge and an opportunity. This is a challenge because the solution will not come from one "intervention." The causal factors and the behaviors are varied and neighborhood-specific. As discussed earlier, the behaviors of people in SSA secondary cities are urban and rural, the government administration system is colonial and traditional, and the means of livelihood are both informal and formal. Solutions, thus, will need to be flexible and multifaceted.

On the other hand, SSA secondary cities offer opportunities in terms of prevention and they can benefit from past experiences in capital cities. This is also an opportunity because vibrant traditional authorities, administrative mechanisms, and local associations are alive and well. These institutions have taken care of the sick and dying from the HIV/AIDS epidemic, support the land, link people to means of production, and provide emotional support.

Unfortunately, donors have not taken sufficient time and resources to better understand these mechanisms, provide needed support through them, or create the necessary linkages between the formal government administrative system and community-based institutions. Security and disease prevention become entwined through the state's access and relationship of trust to civil society. SSA governance issues are also unique because civil society must be understood in terms of precolonial community behaviors and institutions.

Recent data are clearly indicating that disease casual factors, water and sanitation coverage, and infrastructure use vary not just between towns but neighborhoods. Hence, local problems demand local solutions. Solutions also require truly decentralized structures that respond to local problems and government officials with analytical capability who can move beyond sector boxes. People's problems are not defined in one sector. Moreover, solutions to local problems require policies based on local realities and not on far-off central government directives. Local municipal authorities, administrators, and mayors have front-line responsibilities to better understand their client populations. Ultimately, both "top down" and "bottom up" government systems have to work together; it is not a question of either or. These systems are the security building blocks in SSA secondary cities.

Donors are now providing solutions based on local resources and capabilities. For example, the UNDP has the LIFE program and USAID, through the Environmental Health Project, has developed and applied the CIMEP methodology. The CIMEP approach provides municipal stakeholders in secondary cities with the training, skills, and policy mechanisms to analyze local problems, prioritize them, identify solutions, and allocate funds. There should be increased support for donor programs that provide these mechanisms and, thus, create the necessary enabling environment. These types of programs are fundamental to understanding the specific causal behaviors of disease, providing the necessary safety net to those in need, and, as a result, ensuring political stability and security. Furthermore, these approaches for addressing environmental health can be applied to alleviate overall poverty, which, of course, is caused by a multitude of factors in varied contexts. Local governments, partnering with NGOs and community-based organizations (CBOs), are the closest to the problems. Their skills and capabilities need to be improved to ensure the access of secondary cities' populations to the state's democratic processes.

Strategies for Interventions

Based on the issues and findings discussed here, some strategies that have emerged for addressing health, environment, and security issues in SSA secondary cities are given below:

1. To prevent disease and ensure security of SSA secondary cities requires increased support of initiatives that analyze local problems and provide local solutions. Environmental health, disease prevention, and poverty alleviation must address the visible and tangible problems that affect whole communities. Donors and NGOs can strengthen community and local government abilities to analyze and prioritize disease causal factors and then provide the necessary support to address them. The CIMEP experience has reduced cholera rates through community-specific behavioral changes and improved municipal infrastructure coverage at reduced costs. In collaboration with the UNDP's Urban Management Program and the Africa Development Bank, the CIMEP approach is now being applied in secondary cities in Benin and eventually others in the subregion.

2. The CIMEP approach helps support mechanisms for decentralization. This means not only transferring the central units of administration to municipal levels, but also building the capabilities of community institutions. It also means helping local government officials to redefine their roles and responsibilities and develop a new relationship and rapport with the communities they serve. Such initiatives help give local governments experiential learning for developing mechanisms to shift decision making and resources from national ministries to local levels. They also build relationships of trust among local government representatives, NGOs, and communities. Suitable tools and appropriate training, of course, are necessary to make this happen.

3. The direct involvement of government decision makers is also critical for any community-level prevention strategies. All levels of governments must be engaged in this dialogue. This is part of the CIMEP approach that establishes regular national- and departmental-level policy roundtables, and creates cross-cutting municipal teams that receive training and work closely with communities. Often development projects have tried to bypass local governments by working solely with NGOs. Sustainability and scaling up of community-based approaches, however, require the participation of government entities. Governments can function more efficiently and effectively use their resources. But this requires behavioral change of government officials and the opportunity to apply new skills, try out different approaches, and develop new systems.

4. Communities need the opportunities and the skills to develop their own solutions. A one-size-fits-all, or one-intervention approach to development—such as large-scale building of latrines—misses a whole range of other issues and subsequently has limited impact and results. For example, in Benin, a baseline survey, in nine neighborhoods in three towns, found that even though latrine coverage ranged from 10 to 90 percent, diarrheal disease rates for children under five and days lost by mothers tending sick children were the same. Obviously, the environmental health problems and the means to solve them would not be the same in all the neighborhoods. Given community variability and individual interest across many sectors, the issue shifts from empowerment of communities to the development of a common vision for a shared environment. The aforementioned approaches, tools, and techniques can be used for developing this shared vision.

5. Communities need to operationalize this shared vision, implement solutions, and achieve tangible results. In the CIMEP project in Tunisia, for instance, in one neighborhood when the rains came, a ravine flooded and cut off people's access to the local schools, hospitals, and commerce. Consequently, their most urgent "environmental health" need was to build a bridge across the ravine. This is an example of a microproject that emerged in this community. In another country, it was household water containers. In yet another country, it was latrines for market women. These interventions directly impact the identified problems. They help people build a common vision. Above all, small microproject funds—and their management and use in a transparent manner—become the means for creating a relationship of trust and partnership among community members, local government officials, NGO representatives, and other local stakeholders.

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