REPORTS

Cost-effectiveness of USAID's Regional Program for Family Planning in West Africa

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Between 1994 and 1996, the United States Agency for International Development (USAID) closed 23 country missions worldwide, of which eight were in West and Central Africa. To preserve United States support for family planning and reproductive health in four countries in that region, USAID created a subregional program through a consortium of US-based groups that hired mainly African managers and African organizations. This study assesses cost-effectiveness of the program through an interrupted time-series design spanning the 1990s and compares cost-effectiveness in four similar countries in which mission-based programs continued. Key indicators include costs, contraceptive prevalence rates, and imputed "women-years of protection." The study found that, taking into account all external financing for population and family planning, the USAID West Africa regional approach generated women-years of protection at one-third the cost of the mission-based programs. This regional approach delivered family planning assistance in West Africa cost-effectively, and the findings suggest that regional models may work well for many health and population services in small countries. (STUDIES IN FAMILY PLANNING 2003; 34[2]: 117–126)

United States overseas development assistance since the 1960s has been organized mainly through missions of the United States Agency for International Development (USAID) staffed with US employees resident in host countries. These missions operate through delegated authorizations and annual budgets, overseeing design and funding of multisectoral portfolios of bilateral assistance. If resources, US government priorities, or the host country's political environment changes so that a USAID mission is no longer needed or viable, the country's USAID development-assistance program is closed down in accordance with standing regulations and legislation. The prevailing conviction within USAID has been that only resident in-country development missions can best ensure good design and accountability for expenditures and results within national frameworks. Allocations of USAID funds mainly support bilateral programs, although, especially in the population and family planning subsector, missions often also buy into US-based programs that are organized and usually core-funded by a USAID central or regional bureau.

Political changes and USAID budget reductions and reorganization led to the closing of 23 country missions and three regional offices between 1994 and 1996, of which eight missions and one regional office were in West and Central Africa. To our knowledge, the US government did not select the specific missions for closure based on problems with their population programs, but as a result of the comparatively small size of the mission program and because of broader policy concerns such as the country's lack of democracy (Togo), alleged involvement in regional war (Burkina Faso), lack of commitment to primary care (Côte d'Ivoire), or unfair elections (Cameroon). USAID's Regional Development Services Office (REDSO) in Abidjan, Côte d'Ivoire, which provided support services to the bilateral missions and programs in West Africa, also closed. In most of these 23 countries, US development assistance was swiftly phased out. In West Africa, however, USAID devised a

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new regional program to continue sizable technical assistance and support for family planning and selected child, maternal, and reproductive health services in Burkina Faso, Cameroon, Côte d'Ivoire, and Togo.

Continued support in these four countries was consolidated into a single program based in Abidjan that engaged a consortium of four US agencies, predominantly staffed by Africans and hiring African organizations by means of subcontracts for technical services. The USAID program was titled "Family Health and AIDS Prevention" (FHA) in English and "*Santé Familiale et Prévention du SIDA*" in French. This study was initiated in response to a 1998 USAID management recommendation for a cost-effectiveness evaluation of the program, and it was completed in collaboration with relevant bureaus and offices of USAID and other donors (Shepard et al. 2000).

Methods

The evaluation design rests on an interrupted time series with comparison sites. It compares performance in the four countries before and after the launch of the FHA program relative to a set of West African countries in which mission-based assistance programs continued to operate during the same period. For the latter, Ghana, Guinea, Mali, and Senegal were chosen because comparable data were available. These countries have similar geographic and ecologic ranges, and collectively they comprise nearly identical population aggregates (World Bank 2003). The study analyzes trends in national contraceptive prevalence rates for modern family planning methods in relation to USAID's management structure (regional or mission), controlling for funding investments, country characteristics, and year.

Input Database

The input database comprised all known external input sources for family planning funding and supplies. We began by doing a complete cost analysis for family planning activities. Funds from all USAID sources (the major donor to family planning) were estimated: (1) the USAID Global Bureau (subsequently renamed the Bureau for Global Health) expenditure records; (2) the Bureau for Africa obligation attributions reported in annual program summaries; (3) field personnel costs and mission operating expenditures attributable to family planning; and (4) non-USAID, other-donor program obligations. During the period from 1989 to 1998, expenditures for these eight countries totaled US$142 million from the

Bureau for Africa, $106 million from the USAID Global Bureau, $19 million from family planning-attributable field personnel and mission operating costs, and $95 million from non-USAID sources, for a grand total of US$362 million, roughly $4.5 million per country per year.

Expenditures provide far better estimates of financial inputs than do funding obligations because expenditures are temporally closer to intended benefits, whereas a small but significant portion of obligations are never expended. Expenditure estimates, however, are only available from USAID's Global Bureau (contracts and cooperative agreements) and from the Bureau for Africa operating expenditures. Therefore, funding obligations were converted into estimated annual expenditures based on systematic pipeline analyses of both USAID's and other donors' obligation and commitment data. A review of USAID's Policy and Program Coordination Bureau of project cycles during the 1990s indicated that of every million dollars obligated in 1995, virtually none would be disbursed that year, typically about $400,000 would be spent in each of the next two years (1996 and 1997), and most of the remaining $200,000 would be spent in 1998. We found that project or activity expenditures typically were completed largely within four years during the first part of the decade and that these funding pipelines gradually shortened to three years or less by 1999 as a result of management's re-engineering reforms of the mid-1990s.

Information about USAID's operating expenses was obtained from the agency's Bureau for Management (USAID 1985–99) and Bureau for Africa, Office of Administration Management and Staff, Washington, DC. Estimates are based on the number of US staff hired directly and the number of foreign service nationals working in the population, health, and nutrition programs, and on the average cost to USAID per staff member in each category (compensation, benefits, and allowances for the staff member and their dependents) for the years in question. The portion of these expenditures attributable specifically to family planning was estimated using the ratio of operating year budget for population to the total population, health, and nutrition operating year budget in each country.

Mission operating expenditures (for example, for security, rent, motor vehicle pool, and communications) were based on detailed data for 1990 and 1994; they were found to comprise 55 percent of mission personnel costs. We assumed that this ratio was constant across the years of study (that is, that mission operating expenses and personnel costs rose at the same rates) and across USAID programs; thus, we estimated the mission operating expenditures attributable to family planning in each year as 55 percent of the estimated family planning person-

nel costs in that year. For the FHA office in Abidjan, actual operating expenses for the years 1995–99 were used directly.

We obtained data on other donors' funding for family planning from two sources: (1) from multilateral organizations and nongovernmental organizations through the United Nations Population Fund (UNFPA) reports and (2) from other bilateral donors according to information obtained from the creditor reporting system of the Organisation for Economic Cooperation and Development (OECD 2000). We converted these funding-obligation data into estimated expenditures based on an empirical pipeline analysis showing typical 85 percent disbursements over four years (Shepard et al. 2000).

Output Data

The major outcome measure or indicator of family planning was the prevalence of use of modern methods of contraception—the proportion of women of reproductive age using a modern method at the time of interview—or the contraceptive prevalence rate (CPR). Modern methods include sterilization, intrauterine devices (IUDs), oral contraceptives (pills), condoms, implants, and injectable methods. Rhythm, abstinence, withdrawal, traditional methods, and pregnancy termination were not included.

The dependent variable, the estimated annual contraceptive prevalence rate, was calculated starting with three to four point-estimates based on Demographic and Health Surveys (DHS) and earlier World Fertility Surveys (WFS). Overall, there are 26 point-prevalence estimates among the eight countries over the 22-year period 1978 through 1999. Of these, 14 relate to the study period (years since 1989), eight are estimates of prevalence rates at or less than 1 percent based on World Fertility Survey estimates for Cameroon, Côte d'Ivoire, Ghana, and Senegal from 1978–80 (Shepard et al. 2000), and four estimates date from 1986 through 1988.

To estimate the prevalence rate in years lacking Demographic and Health Survey measurements, we use the logistic function, a mathematical function widely employed to characterize the diffusion of innovations ranging from classic studies of hybrid corn (Griliches 1957) to new pharmaceuticals (Coleman et al. 1996), new medical technologies (Gordon and Fisher 1975), and the adoption of many other modern technologies (Grubler 1997; Ironmonger et al. 2000; Hall and Kahn 2002). It closely resembles the S-curve familiar for decades in anthropological studies of diffusion of innovations (Rogers 1995) and yields forecasts similar to the Bass curve (Bass 1969; Bass and Leone 1983; Bass Curve websites).

Four main rationales underlie the choice of logistic function. First, the standard method for describing the diffusion of innovations sets the number of new adopters in any time period proportional to both the number of existing users (who can spread information to their acquaintances) and the number of nonusers who are potentially eligible to use the innovation, plausible assumptions for contraception (National Academy of Sciences 1999). We assume the potential ceiling for contraceptive prevalence in West Africa during the study period was, at best, 85 percent, because this was the highest rate recorded among the values published by the United Nations Development Program (UNDP) for low- or middle-income countries (for example, China and Cuba). According to this assumption, if the proportion of women using the innovation is denoted by p, then the number of new adopters of family planning per year is proportional to the product $p(0.85 - p)$. Solving this differential equation gives the logistic function.

The second rationale is that if the calendar year during which each woman of reproductive age began regular use of a modern contraceptive were a normally distributed random variable, then p would be a cumulative normal function of time. The logistic function is similar to the cumulative normal distribution but is mathematically more tractable. The third rationale is that the logistic function has become the most widely used statistical technique for analyzing probabilistic behavior. It is relatively easy to compute and is a standard component of widely used statistical packages, such as SPSS. The fourth rationale is that the logistic fit is better than a linear function in five of the eight countries, and, unlike the linear function, cannot give impossible values (for example, values of contraceptive prevalence below 0 percent or above 100 percent).

The logistic function of the contraceptive prevalence rate (in percentage points) is defined using formula (1) below:

$$\text{logistic CPR} = \ln\left[\text{CPR}/(85 - \text{CPR})\right] \qquad (1)$$

For each country i, we regressed the logistic of its prevalence rate in year t on time, as shown in equation (2):

$$\text{logistic CPR}_i(t) = a_i + b_i t + \text{error term} \qquad (2)$$

As noted, contraceptive prevalence data for most countries fit this family of curves closely. Figure 1 shows this fit for Côte d'Ivoire, a typical example, with three observations and a projection into the future. Finally, we estimate the number of woman-protected years in each country in each year by multiplying the number of women aged 15–44 for that country and year times its fitted adjusted contraceptive prevalence rate.

Figure 1 Percentage of women who reported that they use a modern contraceptive method, and predicted percentage of those likely to use one in the future, Côte d'Ivoire, 1980–2060
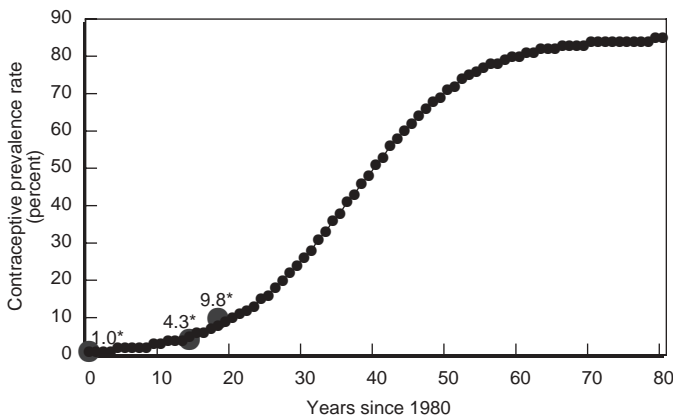
* Value from DHS country report.

Adjustment for Social Development

Many attitudinal factors and indicators of socioeconomic development are well-known correlates of contraceptive prevalence. Thus, a key analytic challenge in this study is to ensure overall similarity between FHA and mission-based countries, and to adjust for any remaining differences. To examine this similarity, we compare mean values between regional and mission-based (control) countries on key indicators of development. Table 1 shows that none of the differences is statistically significant, and that factors most favorable to contraceptive use are evenly divided between the two groups of countries. The limited number of observations (80) does not allow each of the determinants to be examined separately; rather, a single global index is required. In this study, the gender development index (GDI) was chosen. This index,
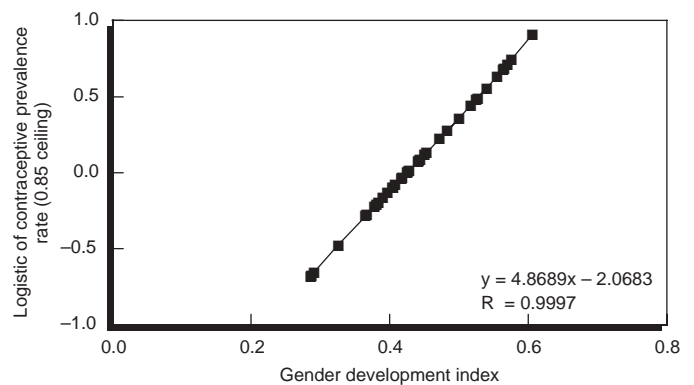
computed by UNDP since 1995, uses the same variables as the human development index (UNDP 1995 and 1999), but is a composite reflecting disparities between men and women in income, life expectancy, and educational attainment. The GDI correlates strongly with the logistic transformation of prevalence of contraceptive use—almost perfectly linear, especially for the lower 50 percent of countries as rated by the human development index (see Figure 2).

The logistic of contraceptive prevalence was adjusted by the gender development index by first calculating the population-weighted average GDI for the eight countries in question, and then calculating the "delta GDI" or difference for each country between its GDI and the population-weighted GDI (as shown in Table 2). We calculated the slope coefficient of the linear relation between the GDI and the logistic of the contraceptive prevalence rate for 73 countries (the lower 50 percent of countries rated by the human development index for 1997) (UNDP 1999). This coefficient was multiplied by the delta GDI, and the resulting product was added to the fitted logistic of the CPR, giving a fitted adjusted logistic of CPR.

Data Analysis

We estimate the relationship for each country of three independent variables to the dependent variable (fitted adjusted logistic of the contraceptive prevalence rate) using multiple linear regression. The data set is a pooled-time-series cross section in which each of the 80 observations represents one of the eight countries for one of the ten study years (1989 through 1998, inclusive). Our

Table 1 Averages of key characteristics for mission-based and regional (FHA) countries, 1997

Indicator	Mission-based countries		FHA countries		p-value[a]
	Mean	Standard error	Mean	Standard error	
Population (millions)	11.0	–2.5	10.8	–2.4	0.97
Gender development index	0.43	–0.04	0.42	–0.05	0.90
Life expectancy at birth (years)	50.5	–3.6	48.5	–1.7	0.62
Female life expectancy (years)	54.4	–3.0	49.7	–2.3	0.21
Female enrollment (percent)[b]	27.0	–4.0	33.0	–7.0	0.42
Adult female literacy (percent)[c]	33.0	–8.0	37.0	–11.0	0.79
Gross national income per capita (US$)	438	–70	493	–121	0.69

[a] Based on a two-sided t-test. [b] Number enrolled for primary or secondary education (whether or not they belonged in the relevant age group). [c] Proportion of persons 15 and over who can, with understanding, both read and write a short simple statement concerning everyday life.

Figure 2 Logistic of contraceptive prevalence rate versus gender development index

$y = 4.8689x - 2.0683$
$R = 0.9997$

Note: Gender development index is calculated for the lower 50 percent of countries as rated by the gender development index, that is, for those having a contraceptive prevalence rate of 60.6 percent or less.

Table 2 Gender development index adjustments in study countries

Country	GDI	Delta GDI
FHA		
Burkina Faso	0.29	0.14
Côte d'Ivoire	0.40	0.03
Togo	0.45	−0.01
Cameroon	0.53	−0.09
Mission		
Mali	0.37	0.07
Guinea	0.38	0.05
Senegal	0.42	0.02
Ghana	0.54	−0.10
Weighted average	0.44	0.00

regression analyses estimate an equation that models a production function for contraceptive prevalence. This production function uses three independent variables, chosen for theoretical relevance and parsimony: (1) year, (2) status as a current FHA country,[1] and (3) USAID family planning funding in absolute (dollars per woman) or relative (share of total funding) terms. The absolute specification is the dollar amount of USAID support for fertility programs per woman aged 15–44 , whereas the relative specification is the USAID proportion in relation to all donor support for fertility programs in that year for that country. This specification uses USAID funding as the main independent variable for explaining the GDI-adjusted contraceptive prevalence rate. The year variable picks up secular trends, whereas the status variable indicates the efficiency of FHA countries compared with mission-based countries.
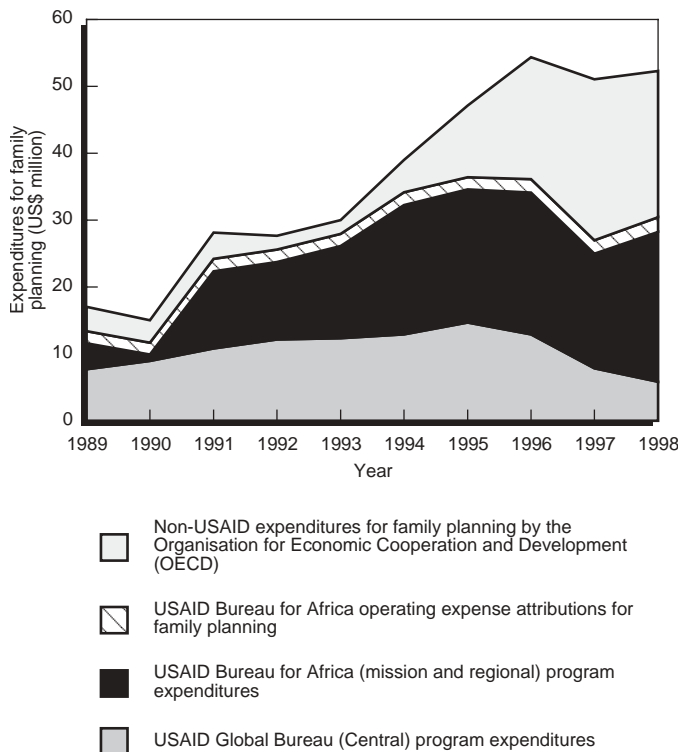
Results

Overall annual expenditures for family planning for these eight countries rose 160 percent, fairly steadily from about $20 to $52 million (per year) during the ten-year period ending in 1998. Non-USAID expenditures of the OECD rose substantially beginning in 1994 (as shown in Figure 3).

Figure 4 contrasts the aggregate inputs and outputs between the four FHA and four mission-based countries. Trends for all donors active in family planning over the same period show that USAID accounted for about 80 percent of donor expenditures for family planning in the four FHA countries over the period 1988–92; its share declined to about 40 percent by 1998 (not shown). By contrast, in the comparison (mission) countries, USAID expenditures remained at least 70 percent of the total.

Figure 5 presents the descriptive relationship (without covariates) between USAID inputs and outcomes in

Figure 3 USAID and other official development assistance expenditures for population and family planning, eight West African countries, 1989–98 (US$ million)

Non-USAID expenditures for family planning by the Organisation for Economic Cooperation and Development (OECD)

USAID Bureau for Africa operating expense attributions for family planning

USAID Bureau for Africa (mission and regional) program expenditures

USAID Global Bureau (Central) program expenditures

terms of the USAID family planning cost per woman-year of contraceptive protection. FHA-program countries were compared with mission-based program countries

Figure 4 Comparison between four FHA-program countries and four countries having mission-based programs, Africa, 1989–98
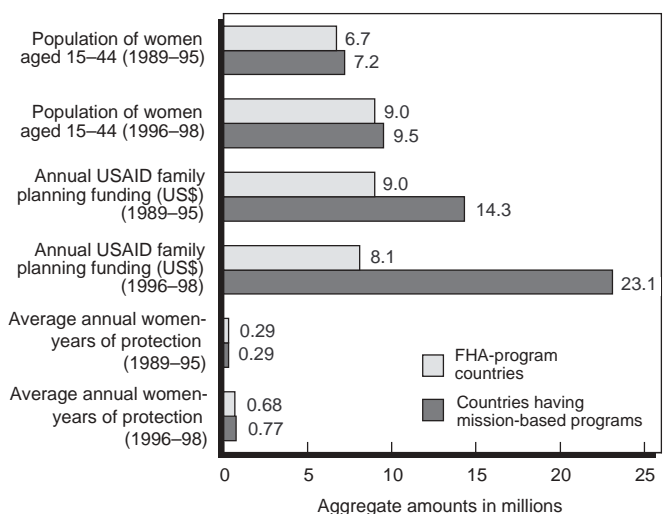
Figure 5 Comparison of USAID funding for family planning and cost per woman-year of contraceptive protection between four FHA-program countries and four countries with mission-based programs, 1989–95 and 1996–98
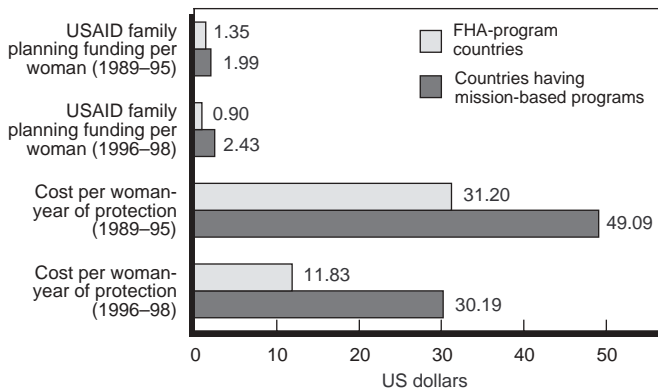
for the years before and after the transition to the regional strategy. The results in Figure 5 show that the countries having mission-based programs expended substantially more per woman-year of protection than did the FHA-program countries, both before and after the transition. The transition to the regional strategy in the FHA countries was associated with a substantial reduction in the cost per woman-year of protection. In all years, the cost in dollars of USAID input per woman-year of protection was higher in the four countries having mission-based programs than in the four FHA-program countries during the period of FHA management. The average cost per woman-year of protection during the three-year period (1996–98) was $30.19 for the countries having mission-based programs, compared with only $11.83 for the FHA-program countries. By this simple measure, the FHA approach was nearly three times more cost-effective than the mission-based approach.

Regression Analyses of Contraceptive Prevalence

As shown in Table 3, the contraceptive prevalence rate in the first regression showed a strong positive correlation with year (coefficient of 0.019 with $p<0.0001$), a strong positive correlation with total USAID family planning dollars per woman aged 15–44 (coefficient of 0.144 and $p < 0.05$), and a strong trend toward positive correlation with FHA status (coefficient = 0.260 and $p < 0.10$).

Under the second specification, the results in Table 4 show a strong positive correlation with year (coefficient of 0.15 with $p< 0.0001$), a strong positive correlation with the percentage of all donors' family planning assistance contributed by USAID (coefficient of 0.87 and

Table 3 Regression results including only USAID absolute funding for family planning, four FHA-program countries and four countries with mission-based programs, 1989–98

Variable	Coefficient	Standard error	t-statistic
Intercept	−219.53	40.16	−5.47****
Year	0.11	0.02	5.38****
Estimated total USAID family planning cost per woman aged 15–44	0.14	0.06	2.53*
FHA status	0.26	0.16	1.66

*Significant at $p<0.05$; ****$p<0.0001$.
Note: Adjusted R^2 is 0.536; $F_{(3,76)}$ is 31.4; $p<0.0001$. The dependent variable was the fitted, adjusted logistic of the contraceptive prevalence rate.

$p< 0.001$), as well as a strong positive correlation with FHA status (coefficient of 0.35 and $p = 0.05$).

Cost Comparison

To determine the savings from the regional approach, we estimated what it would have cost to achieve the same levels of contraceptive prevalence without the FHA regionalization strategy. We used coefficients from the first regression analysis described above to estimate total USAID family planning expenditures per woman aged 15–44 that would have been necessary to achieve the same level of prevalence. In order to obtain prevalence through the mission approach comparable to that of the FHA approach, USAID would have had to spend an additional $18.1 million in 1996, $10.5 million in 1997, and $14.4 million in 1998, or three times its average spending in the FHA-program countries in those years.

The Increasing Role of Other Donors

Analysis of USAID logistics data concerning contraceptive supplies by country (John Snow 2000) showed that, after the transition to the regional strategy, from 1996 onward, the number of couple-years protection obtained through USAID-supplied family planning products rose

Table 4 Regression results including all donor funding and percentage of USAID inputs, four FHA-program countries and four countries having mission-based programs, 1989–98

Variable	Coefficient	Standard error	t-statistic
Intercept	−293.60	33.62	−8.73****
Year	0.15	0.02	8.63****
USAID family planning funding as proportion of all donors' family planning funding (US$)	0.87	0.23	3.78***
FHA status	0.35	0.15	2.33*

*Significant at $p<0.05$; ***$p<0.001$; ****$p<0.0001$.
Note: Adjusted R^2 is 0.577, $F_{(3,76)}$ is 36.9, $p<0.001$. The dependent variable was the fitted, adjusted logistic of the contraceptive prevalence rate.

in the countries having mission-based programs, but fell sharply for the FHA group of countries. During that time, the prevalence of use of modern contraceptive methods increased in both groups of countries (slightly more in the FHA-program countries). The FHA program sought to encourage other donors to contribute more as USAID presence declined. In Côte d'Ivoire, for example, the German development bank Kreditanstalt für Wiederaufbau (KfW) donated large consignments of contraceptive supplies. The FHA program assisted Burkina Faso in modifying its agreement with the World Bank to include contraceptives after the USAID mission closure.

Discussion

The regionalization strategy featured a forced collaboration model under which four US agencies contracted by USAID became jointly responsible for achieving specified outcomes under the direction of a unified management team. The new strategy relied much more heavily on implementation through African organizations and managers. Furthermore, the number of personnel administering the program was considerably leaner than corresponding mission-based programs.

The new strategy also emphasized the mobilization of other partners wherein strong efforts were made to attract support of USAID objectives from other donors as the presence of USAID in these countries was being reduced. The four-country regional model fostered cross-border coordination of planning, sharing of resources, feedback on comparative progress, and economies of scale and communication, employing the unified management team. The greater use of African organizations and technical leadership likely engaged local leaders and encouraged adaptation to each country's culture and context (termed "Africanization").

Determinants of Success in Family Planning

Our regression analysis showed that the fitted logistic of the contraceptive prevalence rate, adjusted for the gender development index, was a positive function of: (1) year; (2) total USAID family planning dollars per woman aged 15–44; (3) proportion of total family planning dollars per woman aged 15–44 from all sources provided by USAID (percent USAID contribution); and (4) the regionalization strategy itself (FHA). Although our pipeline analysis adjusted for lags between authorization and spending, our data did not allow for examining possible lags between spending and use of contraceptives. Because the population programs in both mission-based

program and FHA-program countries emphasized services and products, we do not believe that such lags were large. As our dependent variable is fitted, it may contain some error. Because our fitting process was not influenced by the independent variables, this process should have introduced no bias and, like any random errors, the process made it more difficult for our findings to reach statistical significance.

The significant positive coefficient for the year variable confirms that family planning programs in West Africa have made rapid progress in recent years, although contraceptive-use levels remain low compared with those in other parts of the world. "Year" (passage of time) likely is a proxy for other variables that may have had a positive influence on the acceptance of family planning, including interpersonal communication networks and diffusion of information and behavioral change. The educational, economic, and health status of women has slowly advanced over the decade in these countries.

The gender development index proved to be an extraordinarily powerful adjuster for explaining differences among countries in terms of contraceptive-use prevalence. Important policy changes favoring family planning have transpired in some of these countries; indeed, some have moved from pronatalist policies to the adoption of national family planning policies (for example, Togo). Privatization, including commercial retail sales related to social marketing, has spread over most of West Africa, meaning, among other things, that more contraceptive methods are available in the private sector to meet the demand created by marketing. Other important variables influencing reproductive behavior during the decade include civil conflict and economic changes, such as the monetary devaluation that occurred in West Africa in 1994.

More than any other donor, USAID has made a major effort to influence population growth and reproductive health in West Africa by boosting demand for contraception, strengthening family planning services and logistics, and funding policy development, institutionalization, and evaluation. This study shows that greater funding significantly increases the use of modern contraceptive methods.

Contraceptive prevalence was also positively influenced by the share of total family planning dollars per woman aged 15–44 from all sources provided by USAID. This variable (percent USAID contribution) suggests that the greater the extent that USAID is the dominant donor in family planning, the larger the improvement in the prevalence of modern methods. We speculate that USAID's predominant role in family planning may have focused management and ensured consistent messages.

The modeling of contraceptive prevalence using logistic-shaped curves and the gender development index appears to be a promising tool in demographic analysis, one useful for helping governments and donors plan future needs and funding for contraceptive supplies and services.

Strengths and Limitations of the Regional FHA Model

As a regional model, the FHA program has several advantages: (1) it receives field assistance from numerous US-based technical support agencies that is flexibly deployed across borders; (2) the program is not beholden to one single national government and can take a longer-term perspective; (3) the program offers a greater opportunity to diversify financing in the regional model; (4) it facilitates effective coordination among countries (for example, the FHA program has supported training in Senegal and elsewhere outside its defined country framework, thereby helping many countries in the subregion).

Several other strengths of the model should be noted: FHA is based on a strong results orientation; contractors are retained or removed based on their performance; technical assistance draws on a pool of known experts for the subregion whose skills may be shared or deployed as needed; when necessary, the team can shift resources quickly; training and operations research are intrinsic to the program; and reliance on African managers and institutions has helped make the FHA family planning services effective, culturally sensitive, and cost-effective.

The concentration and coordination of expertise found in FHA during this period suggests its potential as a technical implementing agency for other aid agencies such as the World Bank, at least in the four countries where it is based presently and probably more broadly. For example, USAID technical experts could be used to certify that programs have met donor conditions for loan and grant disbursements. Regional programs should be better able to address cross-border issues, such as migration and trading. Finally, FHA could be especially effective at leveraging support from non-USAID sources. Its efforts at donor mobilization worked particularly well in Côte d'Ivoire, for example.

Some disadvantages are inherent in the regional model, however. For example, national family planning program officers in Cote d'Ivoire and Togo expressed concern about having a reduced voice in planning and control of FHA program resources because the program's annual budgets are not reserved for specific countries but may be shifted as needed. They felt that too much emphasis had been placed on "cranking out" couple-years of protection and that more emphasis should have been placed on long-term behavioral and attitudinal changes.

Future Extensions

The favorable findings concerning the FHA program suggest the importance of knowing which components were most effective and how resources should best be allocated among activities. Unfortunately, the study's regression analyses cannot be used to determine this information, given the number of variables used and the few country-years of observation available. Useful insights could be obtained, however, from activity costing studies (Mitchell et al. 1999; Potts et al. 1999) where decisionmakers in each country were asked to rate the salient aspects of the country's program, as Ross and Mauldin (1996 and 2001) have done in the past.

FHA offers generalizable features for consideration by the larger donor community and for other domains of development assistance. Given substantial prior country-based investment, as was the case in the four FHA-program countries considered here, a relatively small regional administrative staff can manage complex social programs effectively in a context of national and local autonomy. African organizations under FHA in this study, and more generally in West Africa (Stewart et al. 1999), proved to be reliable as implementing agencies.

Bilateral donors may not have to depend heavily on in-country donor missions and may be able to achieve equivalent or better results when they work with qualified national or subregional organizations in this area of Africa. Aid organizations that work cooperatively with unified local management using common planning and implementation mechanisms can likely enhance the cost-effectiveness and overall effectiveness of their programs (for example, see Tantchou and Wilson 2000). Mission-based programs have been most useful in the early stages of program development, but after a long seeding period, regional programs may have a greater impact and be more cost-effective. This study supports the wider application of these principles and suggests that USAID work less within national programming contexts and more within larger subregional frameworks.

Finally, an important potential near-term application of the regionalization strategy is in the domain of HIV/AIDS prevention. The pandemic's spread through the international movement of truckers, traders, migrant workers, and refugees might be more effectively addressed by a regional management structure. Lessons learned in one country in areas such as control of sexually transmitted

infections, antiviral treatment programs, and voluntary testing and counseling might be more rapidly, effectively, and efficiently implemented in neighboring countries through regional mechanisms. The projected increases in funding for HIV/AIDS through the Global Fund and American presidential commitments make consideration of a regional approach particularly relevant.

Note

1 This variable is equal to one only if the country was an FHA country and the year was 1996 through 1998; otherwise, it is equal to zero.

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