

WORKING PAPER SERIES # 3



PA-APC-727

BUREAUCRATIC TRANSITION: A PARADIGM FOR POLICY
DEVELOPMENT IN BANGLADESH

PA 09/94

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Paper prepared for the Seminar on Societal Influences on Family
Planning Program Performance of the International Union for the
Scientific Study of Population, Jamaica, April 10-13, 1985

MCH-FP Extension Project
International Centre for Diarrhoeal Disease Research, Bangladesh
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Acknowledgements

The MCH-FP Extension Project is funded by a grant to the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B) from the United States Agency for International Development (USAID). The Matlab Family Planning Health Services Project is funded by grants to the ICDDR,B from USAID and the United Nations Fund for Population Activities. Ruth Simmons' collaboration with the ICDDR,B on these projects is, in part, supported by a grant to the ICDDR,B from the Ford Foundation.

ABSTRACT

Much is known about how fertility changes in response to economic development. Less is known about how fertility change can occur in its absence. This paper reviews research conducted in rural Bangladesh which suggests that demographic transition can be initiated in a rural traditional society once comprehensive family planning services are carefully organized. Such effects are possible, however, only if service strategies are designed to address societal constraints to programme performance. Since research has demonstrated that success is possible if services are properly organized, there is thus a need for systematic efforts to develop techniques for fostering policy change in settings where organizational capabilities are limited.

These conclusions are based on the experience of two rural MCH and contraceptive service projects conducted in Bangladesh, a setting not widely acknowledged to be predisposed to demographic change. A study has been conducted in a rural riverine area of Bangladesh, known as Matlab, which is aimed at assessing the demographic impact of services when operational constraints to intensive service delivery are minimized. A second study, recently launched in two areas removed from Matlab, tests the transferability of Matlab service strategies to the public sector programme with the aim of identifying the operational constraints to large scale replication of the Matlab success.

In this paper the constraints to organization development are reviewed, many of which are also societal constraints to demographic change. A paradigm for collaborative policy development is proposed in response to project outcomes. Initial results suggest that field strategies that are informed by social realities and developed in concert with officials who occupy positions of influence, can initiate bureaucratic transition in the absence of prior economic development and social change.

INTRODUCTION

Much is known about why fertility falls in the course of economic development. Less is known about how fertility can fall in its absence. While a growing body of literature suggests that demographic change can be affected by organized service programmes(1), the question of how such effects are mediated by societal influences on organizing capabilities has been the subject of only limited inquiry(2). Nor has the population policy literature said much about the issue of how research is best designed to foster policy change and programme implementation when social, economic, and structural conditions impede organization development and renewal. If demographic change is to be achieved by improving the performance of public sector population programmes, an understanding of how organizational change can occur in the absence of broader structural change in society is a crucial policy issue.

The present review is derived from findings from two field experiments of the International Centre for Diarrhoeal Disease Research, Bangladesh (ICDDR,B). In 1977 a study was launched in Matlab, known as the Family Planning Health Services Project (FPHSP), to test the hypothesis that services, if effectively implemented, can induce and sustain fertility change in rural Bangladesh.(3) The impact of this project was immediate and pronounced--a result that has been sustained over time.(4) This success suggests that programmes, once effectively organized, can introduce demographic change in rural Bangladesh, a setting not generally acknowledged to represent an institutional context in which such effects are to be expected.

In response to the FPHSP success, the Government of Bangladesh requested a second study, known as the MCH-FP Extension Project, to test the replicability of the FPHSP in the Ministry of Health and Population Control (MOHPC) programme. While the FPHSP findings were acknowledged as important for policy, by demonstrating that success was possible in rural Bangladesh, the question of whether the Government can replicate this result with its staff, resources, and structures cannot be addressed in Matlab. Therefore two other subdistricts, geographically removed from Matlab were selected, where the ICDDR,B would serve as change agents and trainers, but would not undertake direct service delivery activities. Barriers to transfer would be the subject of systematic research. Thus, whereas Matlab is a controlled administrative environment where the demographic service system impact is researched, the Extension Project is an MOHPC controlled service system where implementation capabilities

are researched.(5)

In the present paper we first present an overview of a theoretical framework for the societal determinants of programme performance in these projects. Next, we review the societal determinants of weak organizing capability of the public sector family planning programme in Bangladesh, and posit that common determinants explain high fertility and bureaucratic malaise. We argue that the Matlab service system, for reasons peculiar to the institutional history of the ICDDR,B, is insulated from many of the societal constraints that curtail organizing capabilities in the Government programme, and has therefore been able to develop an effectively managed experimental project. We then review dimensions of the Matlab management system and identify components which may be replicable in the public sector programme. Finally, we propose a strategy for policy and programme development for countries like Bangladesh where the institutional context induces and sustains both high fertility norms and weak administrative capabilities; but where progress in programme development is nevertheless possible.

This focus on programme development is motivated less by a view that programmes represent a predominant fertility determinant than by the view that programme characteristics represent variables that are manipulable by policy makers. No matter how important may be the role of social and economic structural fertility determinants, such variables are typically removed from the purview of policy makers who can weigh alternative programmatic strategies, but cannot undertake a revolutionary restructuring of the underlying institutional determinants of reproductive motives. That programme improvements are needed in Bangladesh has long been recognized by the Government: although some progress has been achieved in the provision of sterilization services and in outreach and clinical services, structural and operational problems impede progress at all levels.(6) The underlying determinants of these problems and a proposed paradigm for achieving policy development is the theme of the present review.

THEORETICAL FRAMEWORK

Organization development is both a theory and a technique developed by organization sciences to bring about change. The paradigm for policy development that is described in the present paper is informed by the organization development literature.(7) Organization development in many respects parallels demographic transition theory, and the strategies employed in the project described below reflect this analogy. To illustrate this perspective, we briefly review the recent demographic history of Matlab, and subsequently posit a framework for organizational

change.

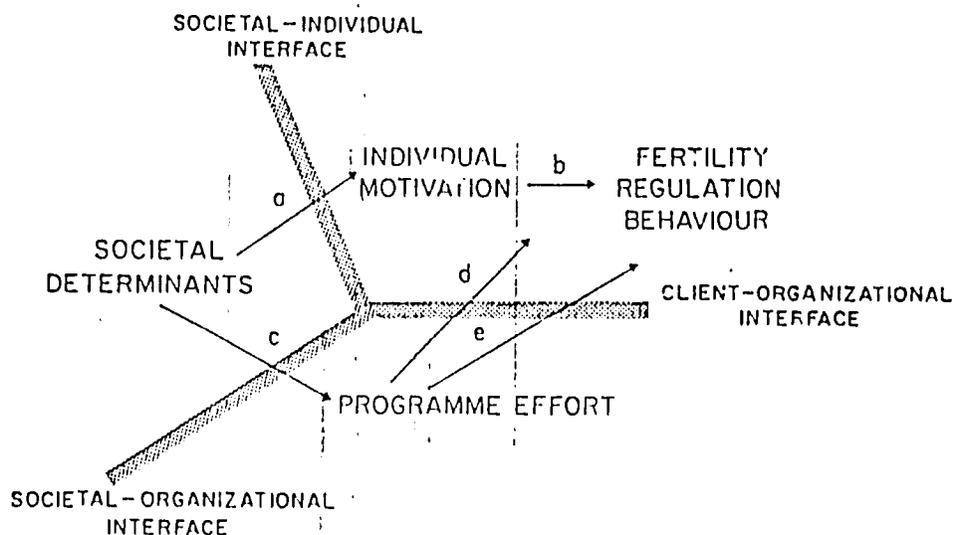
The Matlab FPSP was an effort to achieve demographic change in a homogeneously natural fertility environment. Baseline studies suggest that, while traditional fertility and contraceptive behaviour were the norm, attitudes toward fertility limitation were somewhat variable. A minority of the population who were interviewed indicated an interest in contraception, most prominently high parity women in the middle of their childbearing years who had two or more sons and at least one daughter.(8) Building upon the intrinsic interest of this select group, the programme provided intensive household services to all women which included a wide range of contraceptive options, referral services, clinical backup, and MCH care. The behavioural homogeneity quickly disappeared in the early stages of the project, and was replaced with a sustained period of contraceptive turbulence: many couples tried contraception, but switched methods frequently, and practiced contraception irregularly.(9) Adoption rates increased, but discontinuation rates rose as well. (10) Some baris(11) adopted en masse, others did not, and use clustered by social groupings with some high contracepting clusters of baris lending considerable areal variation to the contraceptive profile of Matlab villages. This turbulence continued for three years, during which prevalence was at a 32 percent plateau and fertility declined by 27 percent.(12) The contraceptive profile was changing throughout this period, however, with use at first dominated by injectables, and adoption secondarily dominated by tubectomy with adoption rates for sterilization declining as demand was met, and copper T rates rising subsequently. The specifics of this turbulence are interesting, but not salient to our present discussion: what is important is that convenient mechanisms for achieving demographic change were introduced into an environment where behaviour was homogeneous, but attitudes were variable, and behavioural change was initiated by a surge in behavioural variance at all levels of social aggregation: couples, baris, and villages. By 1982 this situation began to change, and variation declined. Couples switched contraceptive use less frequently, and sustained practice longer. Both new adoption rates and dropout rates declined: most couples had tried contraception, with a transition from the period of contraceptive experimentation to a period in which contraceptive behavioural change very much in evidence. Use prevalence rates rose from 32 per cent to 46 percent, with changes concentrated in the low prevalence baris and villages. Areal variation consequently declined. Fertility regulation behaviour had become the norm.

By building upon sources of variation--the receptive few--social change was gradually introduced. What we are concerned with in the present discussion, is not the determinants of variation in the particular case of Matlab, however, but what was held constant, in laboratory fashion, throughout this demographic drama: a well organized intensive service programme that

provided a wide range of household and clinical services for the couples of Matlab over a period of seven years.

To draw the analogy of the demographic transition in that locality to our present concern for organization transition, consider the framework depicted in Figure 1. As the figure shows, societal determinants of fertility directly affect individual reproductive behaviour ("a" in Figure 1) as mediated by the effects of individual motivation. Personal idiosyncracies and characteristics of individuals are nevertheless also important ("b" in Figure 1). Societal determinants affect programme organizing capabilities ("c" in Figure 1). Programmes, in turn, can have a net effect through the supply of low cost and effective contraceptive care which meets preexisting demand ("e" in Figure 1). Moreover, exchanges with clientele provide information and support that can ultimately generate demand through its affect on reproductive motives ("d" in Figure 1).⁽¹³⁾ In the policy literature "demand generation" typically involves "beyond family planning" measures -- altering reproductive motives through institutional change ("a" in Figure 1),⁽¹⁴⁾ but Matlab findings suggest that treatment area reproductive motives and behaviour are changing in response to service activities and that this may explain the secondary prevalence increase.

Figure 1: A Conceptual Framework for the Role of Three Key Sets of Fertility Determinants.



Pathway "e" in Figure 1 posits that there is variance in human behavior that institutional determinants fail to explain -- variance that arises from a rational response on the part of some couples who seek to control fertility when convenient and effective options to do so are presented to them by trained and sympathetic outreach workers. Pathway "d" posits a secondary effect of intensive service outreach, an effect that may require several years of intensive and sustained client-service provider exchanges before the messages, themes, and services of a programme are accepted as credible alternatives to traditional patterns of reproductive behaviour. The secondary increase in prevalence suggests that reproductive motives may be changing in response to programme effort. The magnitude of effects has exceeded the expectations of most observers, and the findings thus suggest that organized services played a key role in the Matlab demographic transition.(15)

While it may not be possible to replicate the Matlab design and while the results of the Matlab experiment may not be completely reproducible, an experiment in the transfer of innovation permits systematic assessment of what changes and improvements are possible in the public sector despite severe constraints to organizing services. This underlying potential to improve services is analogous to the underlying potential to achieve demographic change in Matlab. It arises from variance in worker motivation and effort that institutional determinants fail to explain -- variance that arises from a rational response of some individual workers and units to perform their duties when the work system makes it possible for them to do so. In this view, organizational development capabilities are impaired by societal constraints, but achievement and progress is possible if operational barriers to productivity are removed. The principal challenge in the organizational development process is to create conditions whereby bureaucracies can change from a condition of ubiquitous malaise to a situation wherein workers and units who are motivated to work can readily do so. The service worker in Bangladesh is entrapped by constraints from all sides: clients are not strongly motivated to contracept, the system does not facilitate efforts to work. The energetic worker must deal with several hostile environments -- the marginally motivated client, the unsupportive and obstructive bureaucracy in which services are delivered, and the difficult ecological conditions and hardships that complicate daily life.

Progress is achieved by the introduction of policy revisions which create conditions whereby motivated, but seriously frustrated workers, can perform better because conditions are created under which work aspirations can become manifest. By communicating the operational determinants of success to

decision-makers, the process of change and renewal developed on a small scale can be transferred to the system at large. This process of diagnosing key barriers to progress, removing those barriers in some localities to produce deviant but successful work units, disseminating the implications of small scale change to key decision-makers, thereby fostering variance in functioning elsewhere, and institutionalizing both the mechanisms for achieving change and key desired outcomes, is termed bureaucratic transition.

The particular paradigm proposed is addressed to the needs of organizations characterized by a low performance equilibrium trap --public sector bureaucracies with a long legacy of failure to achieve stated aims. As yet, the work described is preliminary, experimental and explorative. Although initial results are promising, much work remains on developing the paradigm and assessing its effects. It is nevertheless appropriate to take stock of the barriers to bureaucratic transition and the strategy that has emerged over two years of Extension Project effort.

SOCIETAL DETERMINANTS OF BUREAUCRATIC MALAISE

The geography of Bangladesh is dominated by its powerful rivers, segmenting the country vertically and laterally into a deltaic plain of temporary land, and rising to form a rushing sea in the monsoon, that is often unpredictable in its course. Although this delta transects a land area that is no larger than Wisconsin, some 100 million people live in Bangladesh, 90 percent of whom are rural cultivators.(16) Periodic flooding wrought by the rivers is a recurring calamity, particularly among the 25 million people who live on land that is inaccessible in the monsoon months; and, as "char" land, cannot be safely considered to be permanent from year to year. Risk and uncertainty from this environment is exacerbated by pervasive poverty, the world's highest rural population density, and high mortality.(17)

Social Diffuseness

Social theorists attribute much of what is known about Bangladeshi institutions, both social and economic, to this underlying ecological uncertainty. The social fragmentation produced by ecological uncertainty is exacerbated by a colonial legacy spanning three centuries of Moghul, British, and Pakistani rule. Village governance has been weakened by traditions of leadership wherein power has been exercised more for the extraction of wealth than for the creation of social order. Without well defined systems of village governance, social organization in rural Bangladesh is often characterized as "diffuse". As Arthur and McNicoll have noted:

"Our overall impression of rural social organization in Bangladesh.... is one of diffuseness. Duties and obligations run in various directions, and

functions are split among different kinds of social groupings. Local society is fragmented into groups organized around leading families, which are often at odds with one another. No strong territorial groupings exist to pull community interests into line. This traditional structure is changing slowly, increasingly coming to be based on formal commercial relations, but this process is still in its early stages.(18) "

This lack of structure permeates all social systems in Bangladesh. Village life is continuously disrupted by ad hoc efforts to acquire status and wealth. Conflicts that arise from this social turbulence infuse the powerless elements of society with a pervasive insecurity. Social status, among the privileged few, is synonymous with power, and power is a means of extracting wealth. As one study has noted:

"Economic power, physical power, and prestige are all to a large extent convertible into each other, for example by using wealth to bribe the Police or by using force to extract money or steal land. However, few power-holders specialise in all these simultaneously; rather they maximise the benefits of their special skills and opportunities, and have close ties with others who have different abilities.(19) "

Thus to advance in status, or acquire wealth, the villager must form alliances, join networks, and cement lateral relationships among peers either to foster individual gain at the expense of others, or to protect vital interests from change of any kind.

Patronage is also important in the allocation of resources and insurance against risk. Although patronage has been traditionally defined by land tenure relationships, the village patronage system may be changing with the increasing displacement of peasants from land. Landlessness is not only becoming more common, but trading, petty business, and other non-agricultural sources of income are becoming increasingly important components of the village economy, and increasingly important sources of economic mobility and patronage. Although land retains its value as the ultimate source of security, patronage and networks built around trade relations, are increasingly important sources of prestige, influence, and political power.(20)

Against this background of social diffuseness in Bangladesh is a continuing economic malaise that is also much discussed in the literature. Literacy is below 20 percent,(21) and economic conditions, while already among the poorest anywhere,(22) appear

to be deteriorating owing to increasing landlessness(23) and fragmentation of land holdings,(24) recurring natural calamities,(25) and continued stagnation of the modern sector.(26) The policy response has, in most respects, not succeeded in reversing the growing economic crisis: trade balances have deteriorated,(27) owing principally to the declining value of export commodities,(28) and the manufacturing sector has languished, with the limited growth that has occurred largely dependent on foreign aid and loans.(29) In the face of these trends Bangladesh has become increasingly dependent on foreign aid, not only for commodities, but also for energy, industrial technology, and finance.(30)

The Effect of Social Diffuseness on Organizing Capabilities

The diffuse social order profoundly affects the organizing capabilities of formal bureaucracies in Bangladesh. Formal organizational structures embrace the strict application of bureaucratic rules, encouraging hierarchical thinking, mechanistic management, and inaction. Informal bureaucratic culture introduces dynamic components, directed however, at survival, not performance. Lateral networks are formed, dissolved, and reformed for personal gain with lines of accountability to peers and patrons in a manner that insulates individuals from the influence of formal organizational structure. The pursuit of personal gain blends formal organizational contacts with extra-organizational networks and alliances. Individual prerogatives condition the setting of goals, the perception of achievement, and the allocation of resources. Formal organization, like the village social order, is typically diffuse.

The fragmentation of formal organizations is compounded by strong cultural values supporting the pursuit and protection of personal status. Status defines access to resources and the parameters of personal influence over the use of resources; it is defined less by organizational rules than by patronage and the power of lateral networks. Status therefore becomes a necessary obsession: every nuance of title, formality, and activity is mediated by its pursuit; and yet, status is never entirely secure, always vulnerable to encroachment by rival networks or patrons. Personal gain, like advancement in the village, is viewed as a zero sum game -- the good things in life are limited, and gainers represent a threat to those left behind.(31) The diffuse society, pervasive poverty, and the concept of limited good undermine organizational capabilities.

Just as illiteracy and conservatism impede social change, limited educational opportunities hamper the process of organizational development or renewal. Educational standards are low, and staff capabilities to train cadre of sympathetic and creative village

workers is limited in every sense: both trainers and trainees have limited competence. Deficiencies at senior levels sustain technical deficiencies so that the obstacles to staff development are substantial, pervasive, and synergistic.(32)

Moreover, the traditional values of villagers are shared, as well, by organizational personnel whose perception of the world and their job is unenlightened by exposure to a modern economy to a strong educational system, or to outside ideas. Workers thus share the conservatism of society at large: women are expected to attend to their household duties, and are reluctant to leave their village.(33) Not surprisingly, female domiciliary workers tend to work near their homes, if at all. Exchange between clients and service providers are consequently infrequent, and the quality and quantity of outreach activity is impaired.(34) Male workers are reluctant to deal with family planning; justifiably perhaps, because men cannot readily talk with women, and most certainly cannot discuss something so sensitive as family planning.

Recent economic changes in rural Bangladesh, which enhance the importance of non-agricultural sector related patronage, further dilute the authority of formal organizations. The weak organizing capacity of the programme limits formal authority over competing extraorganizational interests. Workers become workers in name only, engaged instead as middlemen, traders, and businessmen for whom their Government salary is extra income, and their formal job a part time distraction. Compelling male workers to work thus threatens their family and kin with economic adversity. Workers are neither lazy nor nonproductive, but have little time for their jobs. Strong patronage systems and networks formed around economic activities, insulate personnel from pressures to perform their organizational duties. Supervisors, in any case, also have goals external to organizational objectives, so that applying sanctions is rarely considered and, in any case, would be ineffectual. Control mechanisms, so vital to organizational functioning, are therefore virtually nonexistent. Inaction is systemic -- a system of mutually assured non-performance of specified duties, which has evolved because organizational duties threaten vital personal interests.

The legacy of colonial governance has produced mechanisms which sustain and perpetuate the bureaucratic malaise. Bureaucratic structures established in the colonial era were designed to insulate the public sector bureaucracy from societal influences, and to maximize the power of a few senior colonial officers.(35) Highly formalized rules, narrow spans of control, numerous hierarchical levels, and communication from the top down are designed to prevent flexibility and change in an otherwise turbulent social environment. With the removal of the external authority of the colonial regime, the mechanisms of centralized

mechanistic management survived without its external power base: traditional patterns of patronage and networking have replaced the colonial power structure, but traditions of promulgating formal rules, procedures, and the structures for doing so remain. The promulgated plans, goals, and purposes of formal organizations are therefore increasingly at variance with reality: true lines of authority, influence, and structure conform to multiple informal organizational structures, with the consequence that the formal organizational culture is becoming increasingly weak in the face of relentless societal diversions. Orders and circulars are ignored, accountability is dissipated, and resources are diverted at all levels. All that remains of the colonial legacy are the dysfunctional remnants of its mechanistic design: communication upward is limited, initiative is stifled, and centralization is entrenched.

The pervasive resource constraints of the Bangladesh programme further weaken its organizing capabilities. The resources available to public sector programmes are minimal: salaries are low, ancillary logistics support capabilities are weak, and facilities are substandard. Even if structural problems were resolved, fundamental resource constraints prevent even the most motivated worker from performing effectively.(37) Moreover, the growing dependence on external assistance directly affects the structure of public sector bureaucracies. Donor-client exchange mechanisms are more developed than mechanisms for establishing accountability for programme outcomes to the public at large. Funds received are allocated from central units under terms and conditions specified in project agreements. While decentralization is much discussed, a regional tax base is absent, and field and regional units depend on central units for both resources and direction. Accountability is achieved through the lateral transfer of information between central units and programme officers of donors. The centralization of bureaucracies is perpetuated, and position, rank, and status within programmes relate less to achievement or administrative capabilities than to tenure in a post or informal arrangements and affiliations that are external to organizational goals.

The growing poverty and the erosion of formal authority have enhanced the importance of jobs as a form of insurance against risk. Political uncertainty and periodic reorganizations often threatens the structural integrity of formal organizations and the sustained development of organized programmes; but jobs, once created are never abolished. Like land, Government jobs are therefore a source of security; and like land, jobs are bought and sold, with vacancies subject to the same intrigues and designs that characterize encroachment on an unprotected plot of land.

Equally momentous in characterizing the societal determinants of bureaucratic malaise are weak political institutions with their

failure to provide strong central guidance to the development effort. Political institutions are fragmented, lacking the infrastructure to bring diffuse social and economic forces into line. (36)

One concludes, therefore, that societal influences, so often posited as key fertility determinants -- institutional variables defining risk and uncertainty, economic adversity, and the economic roles of women and children, social diffuseness and weak mechanisms for imposing social order -- all represent prerequisites for establishing a sense of personal control over vital external pressures and influences, and all are also key determinants of organizational capabilities. Rational choice, planning, and decision-making, are common proximate determinants of both effective formal organizational behaviour, and effective family planning behaviour. These determinants, in turn, have common exogenous institutional determinants.

A BUREAUCRACY INSULATED FROM SOCIETAL CONSTRAINTS AND RESPONSIVE TO CULTURAL NEEDS

It is against this grim background of social, economic, and bureaucratic malaise that we posit that programmes can be changed through a paradigm for policy development. This paradigm is derived from the experience of the Matlab Family Planning Health Services Project (FPHSP). Results of this project suggest that, while the power of social institutions to explain high fertility and high mortality in rural Bangladesh is not to be underestimated, contraceptive services, once implemented in rural Bangladesh, can have substantial demographic effects. We have learned from Matlab not only that programmes, once implemented, will have an impact. We have also learned what service delivery strategies work, what managerial processes can succeed in a rural society, and how programmes can be responsive to cultural norms and individual needs. Development of service strategies and managerial processes was possible because of the Matlab project's insulation from societal pressures.

The Matlab Family Planning Health Services Project Design

Since 1963 the Cholera Research Laboratory, and since 1978, its successor, the ICDDR,B, has operated a field research station in a rural, isolated, riverine area to the South of Dhaka known as Matlab. Originally selected as an area known to be hyperendemic for cholera and therefore well suited for testing cholera vaccines, Matlab has since become an international resource for the study of a wide spectrum of diarrhoeal diseases, a scientific activity requiring careful epidemic intelligence on a large population. This surveillance system permitted the monitoring

of demographic dynamics in 149 villages, with a population of approximately 160,000 people as of 1977, and designation of treatment and comparison areas for a formal test of whether MCH and family planning services could succeed in rural Bangladesh.

The FPHSP was established in 1977 to test the hypothesis that comprehensive family planning and maternal and child health services can affect demographic dynamics, in the absence of prior social and economic change. A service system was established by October of 1977 which continues with its original operational design, but with a substantially enriched MCH component.(38) Initially the FPHSP was a village based programme focused on domiciliary family planning services, and clinical care for minor maternal and child ailments in rural health centres. Village-based contraceptive services were provided in fortnightly household visits by young, literate, married, contracepting women recruited from respected families in the local community. Female paramedics deal with minor maternal and child health problems and family planning service needs. A female physician visits each rural clinic in preannounced fortnightly rounds to insure backup and continuous paramedical training. A cadre of male supervisors conduct village visits to support female workers with visits to leaders, husbands, or households with special service problems. Overall service and research work is coordinated by a male field manager.

The most obvious distinction between Matlab and surrounding areas is the legacy of special services and research in that locality. Beginning in 1966 the area was the site of successive vaccine trials. All were externally funded, carefully organized, and directed by expatriates. A remarkably tight system of field work developed in which diarrhoeal disease morbidity could be monitored and major field studies requiring sophisticated logistics and supervisory support could be fielded at short notice. When the FPHSP was launched a large team of skilled supervisors was available who knew the locality and were known by scientific staff to be able and dedicated workers. The planning of the FPHSP, moreover, was informed by an earlier study that failed to produce demographic change, an experience that was invaluable in the FPHSP project development phase.(39)

Matlab, in short, had not only exceedingly rich demographic baseline data, it had a technical staff with skills for conducting such a project, that was perhaps without peer anywhere. Apart from these unique and non-replicable characteristics of Matlab, however, there are features of the work system that are potentially relevant to policy. These features concern the organizational culture, the leadership structure, the system of support services, and control mechanisms. We review each, in turn.(40)

Features of the Matlab Work System

The organizational culture. The excellent technical staff, and the legacy of scientific leadership in Matlab prior to 1977, insulated the FPHSP from the societal pressures on formal organizations which we have described above. Resources, direction, and planning of scientific activity had long been external to Matlab society; workers were recruited for tasks, promoted by merit, and held accountable for achieving objectives. Foreign field presence was never extensive, amounting to no more than 4 or 5 scientists of whom none were permanently resident in Matlab, but the rigors of rural epidemiological work were imposed on the staff, and organizational goals predominate in the organizational culture of the Matlab station.

Most prominent among the features of the sociology of work is the view among staff that job security depends upon service and scientific productivity. Security from occupying a position, like security derived from owning land, is a matter of vital importance; yet, job security is hardly an acquired right in Matlab. One of the four FPHSP male supervisors and 25 of the 80 female village workers have been terminated for poor performance since 1977. With no external power base to avert this catastrophe, the lax Matlab worker must rely upon networks within the ICDDR,B to protect their position, but laxity nevertheless leads to insecurity; not the reverse, as in the case of the public sector programme workers.

An outcome of this administrative system is a strong social system within the organization, dominating social life of workers and setting them apart from their community. Stability of the staff and tenure within the organization are highly valued, and loyalties to the organization are strong. New large scale projects, such as the recent cholera vaccine trial, which require rapid recruitment of a large field staff, expose the system to societal pressure. The established staff view them as a necessary, but worrisome, dilution of the workforce with new and unpredictable individuals who have stronger ties to the community than to the ICDDR,B. Defining boundaries between the organizational culture and society at large is a coveted goal of the Matlab administrative elite.

The primacy of human resources: The workers' perspective Pervading the Matlab system is a respect for workers at all levels and special attention is addressed to system support and continuous training. Technology, such as contraceptive methods, are of secondary importance to the perceived needs of villagers for quality services and the needs of workers for basic skills and system support. While the formal educational attainment of workers is limited and traditionalism has always been a constraint, leaders of the project assess what is possible, given

such constraints, and develop staff incrementally to provide an ever increasingly complex array of technologies to villagers. Much more service development is undoubtedly possible, but a key lesson of the Matlab project has been the importance of not attempting to accomplish too much at once. For each component workers are trained, and implementation is assessed before new technologies are added.(41)

The leadership structure A "dual leadership system" has been introduced in which the administrative authority is vested in male supervisors who check records and field activities, but have limited technical skills. This leadership system is intended to maintain the quantity of work at prearranged levels, insist that duties are performed, alleviate supply shortages, remove logistics bottlenecks, resolve community problems, and ensure that staff meetings occur at each level for the regular review of progress and problems.

A corresponding technical leadership hierarchy maintains the quality of care: a female physician provides technical leadership to paramedics and referral services in a Matlab MCH clinic. Paramedics, in turn, routinely visit villages to follow-up on field problems of community health workers.

Cross-linkage of the leadership system occurs at all levels through fortnightly staff meetings at the union level and through monthly supervisory meetings in Matlab. Leadership roles have been delineated so that lines of accountability and reciprocal responsibilities are well understood. The technical leadership system is comprised entirely of female paramedical supervisors and the administrative leadership system is run by male supervisors.

This dual leadership system recognizes fundamental social realities: Male supervisors cannot technically direct an MCH programme in a conservative rural society. Only women can do that. An authority structure, however, which requires disciplining workers, mobility, and diplomacy in dealing with community problems is best assigned to male workers. No distinction is made between types of technical roles, however; health and family planning services are every worker's responsibility. Moreover, no distinction is made between the status of male and female supervisors: roles are delineated, but the status and pay scales for men and women are equivalent.

Support systems In Matlab services are designed to make effective work possible. Supplies are delivered to workers in the field. Funds are available for country boat rental or rickshaw transport. Pharmaceuticals are typically in ample supply. The capacity of the system to support workers makes

control of field work possible, since failure to achieve objectives are attributable to the workers responsible, not to obstacles over which they have no control.

Control mechanisms Beginning with the early vaccine trials in Matlab a worker control system was instituted in which every household has a number, and every worker a well defined and realistic regimen of households to cover within a specified time period. Each supervisor, in turn, has a randomized spot checking regimen from the work roster. Meetings on work problems are frequent, with supervisors expected to support their teams in the field. Peer leadership, support mechanisms, and communication of goals were well developed in Matlab by 1977, and characterize all activities of the Centre in that locality. Even the most casual observer is struck by the teutonic work ethic of Matlab, the strong organizational culture, and the special management talents of the research station staff that has been developed over time.

A simple but effective information and management system provides the requisite tools for maintaining control and cohesion. Each village worker is given a handheld register in which all eligible couples and their children are recorded. Columns in the register correspond to visitation dates and rows to key service information. Procedures have been developed for aggregation of performance data for each worker to present her progress in a fortnightly staff meeting. At the meeting supervisors, paramedics, and the project physician attend to review overall activities of the preceding fortnight and to make detailed work plans for the forthcoming fortnight.

Control is established in this process because each worker is aware of her own achievement, and tasks for the forthcoming period are defined. Field checking by supervisors ensures that assigned tasks are actually being carried out and that reports are accurate. Discussion of problems is designed to instill a sense of peer leadership wherein workers compare their performance, discuss problems, and strategize about solutions. The role of the supervisor is to orchestrate these exchanges in order to ensure that problems are solved. Supervisors prepare a roster of community activities to support the community workers and paramedics prepare a list of households in need of special paramedical care. In this way lower level workers provide direction to their supervisors. Bottom up communication is established, networks are cemented around task objectives, and supervisory leadership and support is established. Each month supervisors and paramedics meet to prepare a two page summary report of progress (one for MCH and one for family planning) and to make plans for the forthcoming month.

Societal pressures on this work system are pronounced, but mechanisms for insulating staff from dysfunctional patronage and

peer leadership systems have kept the system of lateral communication and peer support at an unusually well developed state: meetings are frequent, and information systems permit workers and supervisors alike to monitor field progress. (42) While expatriates are never directly involved in community liaison, personnel procedures and rules tend to follow Western notions of selection, ranking, and promotion. Abuses can be always be found, but the occasional worker who is tied to some network or patron outside of the ICDDR,B is known to all staff as a slacker, and is neutralized by intraorganizational pressures; or, if that fails, terminated. Advancement and security are determined by internal organizational prerogatives not extra-organizational networks. Actions taken to maintain a tight system with distinct boundaries from societal pressures are supported in Dhaka so that the ultimate patrons of the workforce are a staff of scientists eager to support their colleagues in the field as the need arises. Rarely does that happen, however. While the work system is certainly not typically Bangladeshi, expatriates have only a peripheral role in managing the station and virtually no role in resolving community problems.

Supervisory salaries in Matlab are high by Bangladesh standards, undoubtedly insulating workers from economic pressures. Matlab female village workers are paid about what their Government female counterparts are paid, but their work area is about one sixth that of their government counterparts owing to their greater density.(43) They can perform their duties without jeopardizing their familial roles. Female paramedics in Matlab have similar work areas to Government paramedics, but broader supervisory responsibilities and much higher salaries than their Government counterparts. Male supervisors in Matlab are expected to cover a work area that is equivalent to the work area of Government supervisors, but are paid more than Government workers and generally earn more than they could expect to earn on part time extra-organizational economic activities.

The principal difference between the Matlab staffing pattern and the Government pattern is the absence of a Matlab male village worker cadre. Since all village workers are women in Matlab, the geographic density of male workers in Matlab is one quarter that of the Government workers. Only a few men are employed, and all are engaged in supervisory roles. The few men employed are paid a realistic wage.

Community liaison Inspired by the examples of Indonesia and programmes elsewhere where programmes have succeeded by building upon indigenous institutions, policy makers in Bangladesh often call for "strengthening community participation" in the programme through improved liaison with community groups. The Matlab leadership maintains close community ties, but the mode of community participation is very different from patterns of community involvement in East Asia. Organizational initiative is

vested in the Matlab FPHSP supervisory staff who approach community leaders when their participation is needed, but do not depend upon community institutions for the operation of the programme. Resources are controlled by the ICDDR,B, but community leaders are informed of any new project initiative and are requested to sanction it. However, over-reliance on the community for the control of resources or decision-making would tear the programme apart, inflicting it with the factionalism and intrigue that often characterize village life.

In sum then, a major strategy for assuring productivity in the Matlab system is to insulate the programme from societal constraints and to build strong internal work systems and support mechanisms. To avoid factionalism, patronage and dysfunctional peer networks, the programme minimizes dependence on community decision making and the utilization of male workers. Those few men who are employed by the project are protected from economic adversity through higher wages than men can earn outside of the system and by controlling field systems with sanctions for nonperformance. The project substitutes the need for political protection through its reliance upon external donor support and expatriate involvement as a means of maintaining accountability for achieving objectives. Traditionalism and conservatism is dealt with by careful selection of female village workers from influential families, a strategy which enhances their credibility and mobility in the village. Worker density is high so that women employed by the programme are not expected to travel outside of their village. Male workers are assigned a limited service role, based mainly on the needs of community liaison and supervisory support. Owing to the limited educational background of workers the service strategy is kept as simple as possible, with only a few key interventions in the early phase of FPHSP development, and subsequent introduction of services in single component steps. This ensured that the programme was not overloading its workforce with multiple tasks that were poorly understood.

The FPHSP strategy, in summary, achieved a close correspondence between plans and reality wherein plans are formulated in response to a systematic assessment of societal constraints. This lesson, that programmes can succeed if policy is informed by the broader societal constraints to programme effort and insulated from them, has guided strategic planning of the MCH-FP Extension Project.

THE EXTENSION PROJECT STRATEGY: A SYSTEMIC INTERVENTION

The Extension Project intervention strategy closely resembles a paradigm referred to in the organization research literature as "organization development." In the organization development field research typically is initiated by senior management of an organization who invite consultants to assist their organization in identifying operational problems and improving organizational

functioning. Social science research is used to identify problems and focus groups are constituted to feed results back to programme managers. In a successful intervention, these focus groups become joint action teams involving managers and consultants at each level of the organization. The idea of the approach is to focus attention of managers on the problems of a small segment of the organization, so that the problems there can be readily diagnosed and dealt with without major prior commitments to structural change, but to design the research and problem solving system so that all levels of the organizational hierarchy are the subject of analysis and collaborative problem solving. In this way, the activity is systemic, and work cannot be dismissed as relevant only to a particular unit or locality. Focus groups are therefore formed at various levels to take action and feed relevant information to superiors who initiated the consultancy. In this way joint "ownership" of research and decision-making is cultivated in order to foster utilization of results. Typically, change agents are affiliated with the consultant organization and have no formal authority in the host agency. They facilitate change through counterpart support and close liaison with implementation committees.(43)"

The Extension Project began as an effort to transfer to two Government subdistricts (upazilas) elements of the Matlab organizational culture, systems of leadership, support, and control that make it possible to deliver a wider range of health and family planning technologies with higher standards of paramedical support for families than is currently possible in the MOHPC programme.

The transfer process is deliberately constrained: special operational inputs are disallowed, staffing is provided by the Government, and patterns of supervision and supplies are to be unchanged. To the extent possible the areas are to retain their MOHPC character, so that the project does not take on a special quality that dilutes its relevance to policy. The assumption underlying the project, is that the ICLDR,B has technical skills that can be transferred to the MOHPC system through training and counterpart support, without introducing incremental resources or major structural change. The training programme has focused on technical deficiencies and counterpart support on the transferring of the Matlab field management system. Actual implementation, however, has been complex, and guided by the principles of organization development.

The hypothesis underlying the Extension Project is that transfer some of the service capabilities of Matlab to the MOHPC programme is possible, despite the serious constraints to progress in the public sector programmes in Bangladesh. In contrast to the close knit socio-technical system in Matlab, the Government system is diffuse with lines of patronage and peer networks running in all directions, each individual worker with a structure to

organizational life that differs from that of his colleagues. This diffuseness also characterizes efforts to change the national system. Attempts to develop health and family planning services in Bangladesh are also diffuse: Something is tried here, something there; a building programme, a training programme for one cadre, a recruitment for another, neglect of a third; pills, jeeps, advisors, computers, pharmaceuticals, condoms, logistics, this and that, but most importantly, money.(44) Diffuse organizations in a diffuse society absorbing external resources from donors infused with a need to move resources into specific projects. Piecemeal development efforts are applied where systemic dysfunctions prevent progress: supplies do not move, building programmes lag, workers do not work, funds are not absorbed, and donor frustrations build. Pockets of success can be seen where strategies benefit individuals,(45) and progress is most certainly occurring, but programme effort and achievement consistently fall short of stated plans and goals.(46)

The strategy of the Extension Project builds upon the finding, cited in the organization development literature, that systemic diagnosis is more likely to lead to sustained change than activities in a few localities. Therefore the project aims to develop a coordinated strategic plan over a sustained period of time, tested and refined in limited areas, but developed in concert with national authorities and donors with a view toward wider implementation. This has yet to occur in Bangladesh, but efforts to develop the Extension Project are guided by a systems perspective. Only by understanding societal determinants of bureaucratic malaise and strategic planning of operational responses to such environmental pressures, can policy planners develop organizations where development would not naturally occur in the absence of their efforts.

The Extension Project aims to address this need for systemic intervention by constituting joint problem solving and action teams at each level of the MOHPC organization: the primary unit of focus is the union, a unit of village governance with a population of approximately 25,000. A small project team is posted at to subdistricts (termed upazila). Plans for 1986 call for establishing a district focus, and the creation of a national unit for management development in Dhaka. In this design, each level has unique problems that are best diagnosed by collaborative work involving project staff, Government officers, and colleagues from above and below the focal unit. While there are presently only two upazila field intervention sites in the project, aim is to have problem solving teams working at all key levels of the hierarchy within a year.

Bureaucratic Transition: The Strategic Response to Societal Constraints

The Extension Project has been engaged in developing services on

the Matlab model by adapting Matlab strategies to MOHPC field realities, and to involve senior MOHPC officials in both the adaptive process of developing field strategies and the review of progress for broader policy implications. Broadly, six themes are pursued to this end:

Building a bureaucratic culture The exceptional systems for supporting work in small scale nongovernmental organizations to a large measure explain their special accomplishments. Whether a comparable degree of social integrity can define public sector organizations is doubtful, but there are elements of the Matlab organizational culture that may be transferable to the MOHPC. The aim is to establish cohesive peer networks through meetings and to inculcate a sense that social status derived from achievements. This has happened in Matlab, where being a Community Health Worker has changed from a low status activity to something that is much sought after. Providing workers with skills and ancillary support that is in demand apparently contributes to the notion that a worker's social status can be enhanced by effective performance on the job.

Critical to replicating the Matlab esprit de corps in the MOHPC upper echelons is generating a degree of political commitment to the MOHPC programme. Building political commitment, however, is not within the purview of the Extension Project. Although discussions are in progress on awards schemes and contractual schemes that would permit termination of poorly performing workers, it is unlikely that the requisite commitment to follow through on these ideas can be aroused within the MOHPC. Considerable progress in improving the atmosphere for work seems possible, however, even without major structural change, and better support may lead to greater cohesion within the ranks of MOHPC staff.

Developing human resources: The worker's perspective The need to improve training is generally accepted among policy makers (47). Little is understood, however, about what this entails in terms of specific planning. The need for decentralized training is recognized, but specific guidelines on how to do this are lacking. Moreover, training is typically viewed as a single step procedure. The FPNSP has shown that village workers with very limited educational backgrounds can undertake very complex service activities if training and implementation proceeds in stages with initial emphasis on highly focused practical training on a few field problems; continuous subsequent review and refresher training. The Extension Project has identified several barriers to this approach, the instructor's honorarium payment system being among them, but the broad themes of our objectives and the problems that we face are being communicated to the national officers responsible for training policy development.

Training alone cannot solve the human resource problems of the MOHPC. A better correspondence is needed between strategic manpower planning and social reality. Women, for example, view their MOHPC jobs as a source of real income but a threat to familial roles. Men view their jobs as extra income and time diverted to work on the job as a threat to their livelihood. More female workers, working closer to home, with current wages is needed. Fewer men, paid higher wages, is appropriate. In response to this recommendation, the MOHPC is doubling the female workforce; and, as male workers retire, no new male workers will be hired to replace them. Expansion of the female workforce and bureaucratic triage for the male workforce is in line with social realities. Neither strategy will completely dissipate pressures on productivity, particularly if policy continues to reinforce the notion that jobs are a form of property that insures occupants against risks. A cohesive work system with productivity based security would transform the rural service system. Although achieving this transformation without political commitment to the programme at all levels, is a remote prospect, Extension Project findings suggest that incremental improvements in the work system are nevertheless possible: substantial numbers of workers respond to such improvements, and operational change can improve performance.

Developing ancillary support systems Much of the effort of the Extension Project has focused on removing administrative barriers to work. This focus on administrative obstacles is motivated less by the view that such problems represent a predominant determinant of bureaucratic malaise than by the view that operational obstacles represent variables that are manipulable by administrators. No matter how important may be the role of social and structural determinants of bureaucratic malaise, such variables are typically removed from the purview of administrators, who can weigh alternative decisions, but cannot restructure the underlying institutional determinants of malfunctioning. Deficiencies in the supply, equipment, and logistics systems hamper work at all levels (48)

Underlying this emphasis on support systems is our view that progress can be achieved by making effective work possible -- that there is a latent motivation to work that can be a resource to the programme if worker effort is not expended on overcoming internal obstacles to achievement, but is concentrated instead on overcoming extraorganizational societal obstacles to programme impact. If adequate support for work is provided, worker effort will be more variable than is now the case, because the motivated minority of workers -- the receptive few -- will respond. But improved programme functioning is not likely to begin to occur unless the key obstacles to effective work are removed.

Developing leadership Bifurcation of roles and leadership in the MOHPC delineates health from family planning functions. Male

workers are predominantly in the health sector, female workers are engaged in family planning activities. Efforts to create a more rational system of leadership on the Matlab model have been frustrated by this fundamental structural problem, but progress has been achieved by expanding the technical skills of female workers and redefining their roles as multipurpose workers. Leadership of technical versus administrative functions has also been delineated in the course of training. While not formally changing the structure of the ministry, it has been possible to strengthen both administrative and technical leadership. Developing leadership also depends upon developing organizational cohesion.

Developing cohesion: Management control in an atomistic society
The MOHPC programme has a disjointed field strategy with workers of one type unrelated in their job assignments to workers of another designation. Rewards are for individual effort despite a policy of "functional integration" that was promulgated to impose common job descriptions on male and female workers. Thus male health and female family planning workers with different rank and tenure from different divisions with different lines of authority are expected to work together on common goals. Conflict has ensued and functional integration has failed. This conflict and the breakdown of cohesion has been misinterpreted as a consequence of "integration," the notion that health and family planning services are best delivered as a package. Integration is thus unnecessarily controversial in Bangladesh. Creating cohesion in the workforce and appropriate systems of work is possible given an assessment of what workers can realistically do, training them on teamwork, and providing appropriate management tools and resources for achieving cohesion.

Building cohesion has three components: 1) improving self direction, whereby workers are equipped with simple to use registers that enable them to conveniently plan their work, evaluate their performance, and adjust their work regimen in response to practical field problems and client needs; 2) developing peer leadership in staff meetings, wherein workers exchange information, set mutually supportive objectives, and undertake joint discussion of problems and progress, and 3) establishing supervisory leadership, in which techniques of supervision, group formation, and community liaison are key themes. Once a work system is developed which includes well defined household visitation schedules, management information, and problem solving, then integration is noncontroversial.

Specific operational strategies are less important, however, than pursuing the overall aim of creating strong intraorganizational social networks. In rural Bangladesh group cohesion of the sort that is needed for health and family planning work will not form naturally. It must be nurtured and developed with careful

strategic planning.

Community liaison The MOHPC programme, while espousing the view that community participation is crucial, has yet to devise an effective strategy for community liaison. Matlab experience suggests that communities will cooperate with a service programme and strongly support it, if organizing activities and key external resources are provided by the programme. Extension Project findings replicate this experience: Government health centres, constructed without community involvement, are virtually unused. However most communities have an unused Government building and those who are approached by the programme with an offer to provide services typically respond by donating makeshift buildings. Thus, while the organizing capacities of communities are limited in a diffuse society, externally organized services are accepted. Programme resources must be insulated from external designs, but available fixed assets will be readily contributed to a programme if community leaders have good reason to believe that services can be expected to follow.

There are severe and unresolvable constraints, however, on capacities to collaborate with other community based programmes in other development sectors. Weak political institutions dilute the implementation efforts of all public sector programmes. Rather than protecting the programme from societal pressures in the interest of performance, politics permits the exploitation of programme resources for personal and political gain. Given these constraints complex multi-sectoral strategies to promote population planning goals remain unrealistic, since even single sector approaches are severely handicapped.

The Role of Research in Achieving Bureaucratic Transition

Research, in the context of organization development, is aimed at the diagnosis of key dysfunctions and key potentialities for improving organizational functioning. Research has been aimed at identifying components which contribute to improvement, and systems of joint problem solving have been developed to communicate findings to key decision makers. Four types of diagnostic research have been used, each with varying degrees of impact on operational planning: 1) The Extension Project is undertaking activities initiated by senior Government officials and implemented by upazila level officers with the ICDDR,B playing a facilitating and coordinating role. 2) Case studies, written by experienced MOHPC district and upazila level officers, are a key activity of the Extension Project. The aim is to stimulate analysis of the programme by Government officers, through assisting field officers in writing reports, that are subsequently presented to senior officials for review. 3) Studies are being conducted by the ICDDR,B on such issues as staff composition and density, the determinants of worker

performance, the efficacy of clinical services, and other issues. The aim is to identify the sources of problems and prospects for improving programme implementation. 4) Operations research is conducted in the controlled environment of Matlab on global policy issues. The special service capabilities there allow careful evaluation of the impact of key technologies.

All four types of research have had policy impact, the first because initiatives from the Government are central to strategic planning, the second because the insights of Government officers in the upazila can provide a form of communication from the field to central authorities that is otherwise lacking, the third because key operational issues not readily identified by administrators can be articulated and communicated to policy makers, and the fourth because assumptions that underlie general policy are often untested by systematic research. Throughout this process social learning takes place, affecting researchers and administrators alike, and informing key policy makers about the functioning of the organization in a way that would not otherwise take place. These four types of research then are used as basic tools in a coordinated programme to facilitate change.

Stages in the Organization Development Paradigm in the Project Field Sites

The four types of research are conducted continuously, but our strategy for achieving bureaucratic transition has been developed gradually.(49) The process of utilizing research for introducing change is complex, involving several stages: building commitment to change and a sense of joint ownership of the project, generating active involvement in field activities, transferring ownership of the research and change process to the host agency, and institutionalization of the recommended changes.

Building commitment and MOHPC ownership The original request for the Extension Project arose from the Planning Commission as a condition of Government of Bangladesh support for external funding of the ICDDR,B project in Matlab. The organization development paradigm was initially weak because institutional commitment to the concept was external to the MOHPC. Owing to the initially weak central interest in the problem solving process, organizational development activities were first developed in the project upazila consisting of government officials and ICDDR,B project staff. Although the committees have ultimately become a vital resource in the organization development process, they were initially weak: orders in the form of letters from the highest level of the MOHPC were drafted and promulgated which instructed officers to convene committees and to cooperate with the ICDDR,B, but no one was clear as to what cooperation meant and what specifically was to be done.

Active involvement Since the ICDDR,B scientists had no formal authority, the upazila officials first response to field encounters was passive cooperation rather than active participation. This gradually changed owing to sustained efforts to introduce concepts of setting objectives, diagnosing operational difficulties, making specific intervention plans, and taking action on project activities. Moreover, the ICDDR,B invited senior officials to the field, to observe progress, and these visits motivated officials to take pride in their work and to have something concrete to demonstrate as an accomplishment.

The first field collaborative activity of the project, was a training programme for all field staff and supervisors jointly organized and conducted by upazila officials and the ICDDR,B. Launching the course established mechanisms for collaboration that continue. More importantly, the course exposed officials to their field staff more than ever before, which contributed to improving their supervisory skills, field orientation, and commitment to undertake change.

Transferring ownership With time upazila officials have begun to appreciate non-monetary rewards for their collaboration: They had trips to Matlab to review the FPSP programme. They presented papers at a national conference which brought them into direct contact with Ministry officials who requested them to conduct studies which would directly affect policy. This dialogue between senior Ministry officials and upazila officials established implementation committees as a mechanism for diagnosing problems, strategic planning, and decision making.

Policy change With the maturation of collaborative relationships it has been possible to collaborate with the MOHPC to undertake major changes in the content of health and family planning services into the Five Year Plan. These selective changes in the MCH and family planning service programme have been introduced because of the sense of MOHPC ownership of the project that has developed with time. Part of the plan is to establish mechanisms for institutionalizing change. We turn next to this issue.

Impact on national policy

Conventional approaches to evaluation focus on assessing project impact changes in contraceptive prevalence, managerial functioning, or service innovations. The Extension Project is concerned with such criteria, but given its systems orientation, it also focuses on broader policy effects. Successful transfer of

appropriate managerial or service technologies from Matlab to two subdistricts in the public sector does not guarantee utilization of research and service innovation in other units of the government programme. Research utilization is predicated upon the establishment of linkages to national level policy units with a capacity and willingness to incorporate research and management experience into the articulation of government directives.

In aiming to influence policy making the Project has been informed by the same dualistic principle that has guided work at the field level: to provide experience-based, technical support for the development of appropriate policy directives in Dhaka, and to assist MOHPC counterparts in the field to exploit existing variance in the motivation of workers to perform.

Pervasive societal pressure poses severe obstacles to the effective utilization of management lessons and operations research. Policy making is fragmented and diffuse, and lacking in systematic attention to the development of user-oriented services. The organization development paradigm represented by the Extension Project is aimed at assisting a fundamentally troubled administrative system to remove barriers to progress that permeate the MOHPC system.

This weak operational capability also impairs the institutional capacity to absorb and understand project recommendations arising from project research. There is thus little reason to expect policy responsiveness to insights accumulated by the Extension project. However, a turbulent organizational environment can also produce special opportunities which enhance the potential for policy influence. Such opportunities have existed in the course of the last year. Efforts to engage with the policy making process initially involved ad hoc interchanges with senior officers to communicate research findings or to request letters and orders to resolve particular problems. More recently this pattern of active communication by project staff to a passive MOHPC bureaucracy has changed so that requests for the Extension Project staff to conduct field work are being raised by senior MOHPC officers.

A major factor contributing to project credibility and usefulness to the MOHPC has been the concomitance of project activities with Government of Bangladesh planning for the Third Five Year Development Plan. The planning process began in the Spring of 1984 in anticipation of launching the Third Plan in July, 1985. This heralded a period of relative openness to change on the part of policy makers and planners in the Ministry. Although restructuring of the Ministry has not been a consideration, changes in specific programmes, new cadres of workers, and alternative logistics plans have been open for discussion, and all of these operational issues have been themes of Extension

Project research.

With this change there is also a growing commitment to create mechanisms for MOHPC diagnosis and problem solving, and to build a standing unit which can assist senior officials in problem solving activities. The objective is to institutionalize the process of identifying problems, seeking solutions, and fostering mechanisms for coordination of special projects with the planning units of the implementing agencies of the Government. Weak mechanisms for interpreting research and formulating plans on the basis of research outcomes are to be addressed in forthcoming technical assistance projects. It is likely that a system of field research and implementation will be created involving a partnership between the MOHPC and several non-governmental organizations. If successful, this new mechanism will build upon the special implementation capabilities of projects in small areas and serve the need of the Government for a means of testing new strategies and orders, of observing over time operational problems and alternative solutions, and of receiving systematic feedback from the field on operational problems.

This openness of the Ministry to change, and donor support for MOHPC initiatives have created an atmosphere in which Ministry officials are listening to lessons of a special project. As a project specifically focused on diagnosing operational problems of the MOHPC delivery system at the field level, the Extension Project brought insights to officials developed from systematic research. Ministry officials, at first reluctant to take the time to review project reports, are now requesting project staff to present findings on specific issues.

CONCLUSION

Much remains to be learned about how to induce and sustain demographic change when economic and social conditions constrain demographic transition. Evidence is now available, however, which suggests that demographic change can be introduced in rural traditional societies if intensive and carefully organized services are rendered. This raises the question of whether effectively organized services can be developed when economic and social conditions constrain bureaucratic transition. The Matlab project has been instructive in demonstrating what is possible to achieve if constraints on service delivery are removed: contraceptive use increases, fertility declines, and effects are sustained with time. The ultimate aim of organizational development activities in the Extension Project is to induce and sustain a bureaucratic transition in limited areas of Bangladesh, to communicate the specific strategies of intervention to policy makers, and to foster national programme development in the process.

This paper has reviewed key societal constraints to programme development, strategic components of the Matlab system which address these social realities, and Extension Project sequelae aimed at transferring Matlab strategies to the public sector. Critical to this process, is creating elements of cohesion in the MOHPC workforce which establish boundaries between the formal organization and society at large. Elements of the Matlab system which foster cohesion and leadership in the workforce have been transferred to two upazila and function there under MOHPC direction. Basic logistics and support services have been improved permitting new service modalities. The national policy impact of these operational developments in two localities was immediate and pronounced: the national female workforce will be greatly expanded, training programmes revised, and management information systems improved. Whether the momentum of this bureaucratic transition, which began in the project areas and recently affected national policy in key sectors, can become a sustained and institutionalized paradigm for achieving further change and development, is a challenging issue to be addressed in the future.

FOOTNOTES

¹A recent review by the World Bank (1984) concludes that modest declines in fertility have occurred in several countries where there are active service programmes. Analyses suggest that fertility declines have been greater than would be expected in the absence of such programmes. (See also, Freedman and Berelson, 1976; Mauldin and Berelson, 1978; and Lapham and Mauldin, 1984.) The World Bank review also cites several small scale projects that have initiated demographic change (World Bank, 1984, p.119; and Mauldin and Lapham, 1984).

²Exceptions are the recent papers by Simmons et al., 1983; Misra, et al., 1983; Ness and Ando, 1971; Maru, 1976; and Warwick, 1982.

³The design of the Matlab Family Planning Health Services Project is described by Bhatia, et al., 1980. The design of the project for testing replicability is described in Phillips et al. (1984a).

⁴Impact is assessed in a paper by Phillips et al., 1982. A recent update of the analysis shows that demographic impact was sustained with time and that contraceptive use prevalence increased dramatically over the 1983-1984 period (Chowdhury, et al. 1984a).

⁵See Phillips et al., 1984a.

⁶Problems of the public sector programme are mentioned briefly in the Second Five Year Plan (Ministry of Planning, 1983) and are discussed in greater detail in the report by Chauls et al., 1984.

⁷Papers by Phillips et al., 1984a; Yunus et al., 1984; and Koblinsky, et al., 1984 discuss the design of the project as an adaptation of techniques of "organization development" to the unique problems of third world public sector programmes. In the "organization development" paradigm, work is conducted by outside change agents, in this case the ICDDR,B, in response to requests for assistance. The work began with joint diagnosis of problems, proceeds with collaborative problem solving through application of social science research techniques and joint interpretation of results (French and Bell, 1978). The organization development literature emphasizes the importance of establishing ownership of the research process and outcomes with agencies and units most affected by the proposed changes to enhance utilization of research for policy (see Glaser, et al., 1983).

⁸The changing characteristics of users has been described by Bhatia, 1983 and by Chowdhury and Phillips, 1984.

⁹Studies of use effectiveness of contraception in Matlab suggest that temporary use of contraception with rapid switching was common in the early years of the programme despite long periods of use of all methods combined. (See, for example, Akbar et al., 1982.) This suggests that frequent follow-up and support of users is important to sustaining contraceptive practice.

¹⁰This is the subject of a forthcoming study on contraceptive use dynamics in Matlab.

¹¹The bari is an exogamous cluster of 5 to 7 households, usually blood related, that is a strongly cohesive social unit (see Rahman, 1984; Maloney et al., 1982).

¹²The demographic impact of the FPMS is discussed in Phillips et al., 1982. The FPMS prevalence rate has increased monthly for two years (see Chowdhury et al., 1984a). In January and February, 1985 the prevalence rate remained constant, quite possibly because of the special attention assigned to the vaccine trial. It is too early to ascertain whether this constitutes a new plateau.

Despite the clear evidence of impact, the policy relevance of the FPMS is sometimes questioned. Several commentators have noted, for example, that allocation of villages to treatments was not randomized, and that dissimilarities between treatment and comparison areas could explain the differential fertility rates in the post-project implementation period. Other commentators have hypothesized that Matlab society has been changed by the demographic surveillance and diarrhoeal disease clinical programme there, and that these changes explain the receptiveness of the population to the FPMS. (See, for example, comments on the paper by Chowdhury, 1984, in the proceedings of a recent seminar of the Population Development Planning Unit of the Planning Commission.) "Atypical" qualities of Matlab, are posited as explaining the demographic changes there. However, comparisons of Matlab demographic dynamics with Bangladesh national data suggest that Matlab demographics in the pre-1977 period were not atypical of rural Bangladesh. (See, for example, the report of the Committee on Population and Demography, 1981.) Research on census data has shown that village groups in treatment and comparison areas had very similar pre-study demographic characteristics (Phillips et al., 1982). Moreover, economic and social conditions, while not representative of the country as a whole, are certainly not unusual. The early surveys of the contraceptive use and attitudes suggest that the area was relatively conservative and isolated.

At least four hypotheses have nevertheless been discussed which detract from the view that Matlab findings are relevant to policy: 1) Research has shown that Matlab treatment and comparison area populations have similar social and economic characteristics in the 1974 census. Chowdhury and Phillips (1985) have analyzed the 1974 census data on household characteristics in Matlab which showed that educational attainment and economic characteristics of treatment and comparison area villages were very similar. However, the population of Matlab has a slightly higher proportion of Hindus in treatment areas than in comparison areas. Hindus, it is argued, are more receptive to family planning services than Muslims. While there is a slightly higher proportion of Hindus in treatment areas, differences are not great enough to explain the observed treatment-comparison area contraceptive use differentials even if the correlation of contraceptive use with religion were strong. Systematic study of Matlab data suggests, moreover, that religion does not explain variance in contraceptive use in Matlab (see Rahman, 1984).

2) In the second hypothesis the social setting in Matlab is posited as being more favorable to family planning practice owing to the legacy of special service and research activities there. In this view, the treatment area comparison area differentials are genuine, but services are more readily accepted there than services delivered elsewhere owing to the societal effects of a generation of demographic surveillance and the continuous provision of hospital care in a rural society not otherwise exposed to external influences. Evidence from comparative surveys suggests, however, that such activities have not measurably affected reproductive motives: current family size desires, intentions, fertility regulation behavior and other social characteristics in Matlab comparison areas are similar to contiguous areas where social and economic conditions are similar to Matlab, but the availability of a diarrhoeal disease hospital and exposure to demographic surveillance is absent (see Phillips et. al., 1984c). It is nevertheless possible that the workers in the programme in Matlab enjoy a degree of trust in the community that arises from the reputation of the ICDDR,B in that locality. This trust, together with the workers' long standing knowledge of the community, may make ICDDR,B workers more effective in Matlab than the same workers would be elsewhere.

3) The Matlab area has the usual Government health service offices and staffing. One hypothesis is that the ICDDR,B has added its programme onto a functioning Government programme producing complimenting or overlapping services that are impossible to replicate. This hypothesis is the subject of a forthcoming analysis of the sources of services in Matlab. Matlab workers discount this hypothesis because they only rarely encounter Government workers in the field.

4) The fourth hypothesis posits that the ICDDR,B special inputs in the Matlab create unique operational capabilities that cannot be replicated. While the impact of the FPHP is acknowledged, its

policy relevance is discounted. This will be discussed further below in reference to the rationale for the Extension Project. Of these hypotheses the forth is the most plausible. Further research is in progress on this issue.

¹³This view that programme effort can change reproductive motives often appears in the literature on family planning strategies and yet is not rigorously tested. Further work on this question is much needed. The view represented in this framework is that three environments, each representing a pair of interfaces, is appropriately researched in the policy literature. One of these interfaces, the societal-client interface receives the most attention in the literature. The organization-client interface is discussed in the paper by Simmons, et al., 1985.

¹⁴See Berelson, 1969.

¹⁵See Phillips, et al., op.cit.

¹⁶See the reports of the Bangladesh Bureau of Statistics, 1984a and 1984b.

¹⁷Risk and uncertainty has been posited as key determinants of the desire for large families, since children can be viewed as a means of insurance against risk (Cain, 1981). Recent estimates of mortality suggest that levels of infant and child mortality have not declined in recent years (Population and Development Planning Unit, 1984; United Nations, 1981). A useful review of the Bangladesh demographic situation in the 1970s, which draws upon Matlab and national data, appears in a National Academy of Sciences report on available data (Committee on Population and Demography, 1981).

¹⁸Arthur and McNicoll, 1978.

¹⁹Bangladesh Rural Action Committee (BRAC, 1983).

²⁰A recent study by BRAC (1983b) analyzes this trend in one village. The increasing fragmentation of land, in turn, fragments the political influence of the rural middle landholding class, polarizing the society into wealthy and impoverished groups. While land is viewed as the ultimate source of security, economic mobility is increasingly related to trading and business connections with land by necessity, losing its economic significance for a growing proportion of the population. Although the BRAC study is based on only one village, and must therefore be interpreted with caution, this trend has been noted

in other studies. (See, for example, Khan, 1967).

21

Official published statistics suggest that literacy declined slightly over the 1974 to 1981 period, from 20.2 percent to 19.7 percent of the population over aged 5. The female literacy rate increased slightly, however, from 12.2 percent to 13.2 percent over the 1974 to 1981 period (see Bangladesh Bureau of Statistics, 1984b and United Nations, 1981).

22

Morris (1979) estimates the Bangladesh percapita gross national product to be \$92, the fourth lowest among 150 countries.

23

Estimates of the level of rural unemployment vary greatly (c.f. Clay and Khan, 1977; Muqtada, 1975; Bangladesh Bureau of Statistics, 1984b) but observers agree that landlessness is growing (see Adnan, 1978).

24

See, for example, Chaudhury, 1980; Khan, 1977; and Rahman, 1979.

25

See United Nations (1981, p.11); Arthur and McNicoll, 1978, *op.cit.* Several authors have noted that nutritional adversity is seasonal in Bangladesh. (See, for example, Chowdhury, et al., 1981.) Disaster is thus an annual phenomenon leading to seasonality in mortality. (See, for example, Becker, and Sardar, 1981).

26

See, for example, Iftikahar, 1974.

27

See Bangladesh Bureau of Statistics, 1984b, p.425.

28

The value of jute, for example, has declined by over 50 percent in real terms since 1955. (See Wennergren, 1983).

29

See Bangladesh Bureau of Statistics, 1984b, p.596-597 and p.466.

30

Sebhan, 1982.

31

See Foster, 1967.

32

Quddus (1979), for example, cites the limited educational attainment of Family Welfare Assistants as a major barrier to developing their technical skills.

33

See Maloney et al., 1981, op.cit.

34

See Simmons et al., 1984 ; Phillips and Koblinsky, 1984; Simmons, et al., 1985, op.cit..)

35

See Banerji, 1974.

36

See, for example, Demeny 1975.

37

Resources for public programmes are constrained by an inadequate revenue base and lapses in the allocation of external assistance to the annual development plan. (See, for example, dispersement reports of the Directorate of Population Control and Family Planning, 1975 and Ministry of Planning, 1983.) These problems also apply to other sectors. (See, for example, Wennergren, 1983).

38

See Bhatia, et al., 1980, op.cit. The FPUSP structure has been retained but services have been changed with time to include a wider range of MCH services. The addition of MCH services and the relationship of MCH to family planning efficacy is described in Phillips, et al., 1984b. The impact of the programme followed the fertility decline (Chowdhury et al., 1984b and Chen et al., 1983).

39

Makhlisur Rahman, et al., 1980.

40

The Matlab project, like any bureaucracy, has its share of administrative problems. This presentation is not intended to chronicle problems that have arisen; but rather presents an ideal typology of the FPUSP. Despite its problems, plans conform closely with reality. The difficulties that arise are unsystematic, and their review would contribute nothing of substance to the present paper.

41

See Phillips et al., 1984b.

42

See Phillips and Chakraborty, 1985.

43

The low density of female workers has been shown to detract from programme achievement (see Phillips and Koblinsky, 1984). The fact that family planning users cluster in the vicinity of female service providers homes provides further evidence that the intensity of programme-client exchanges is critical to

contraceptive practice in rural Bangladesh (Simmons, et. al. 1985 and Phillips and Koblinsky, 1984).

44

See Demeny, 1975 for a discussion of population plans and Wennergren, 1983 for a discussion of similar problems in the agricultural sector. Planning documents of the Second Five Year Plan reflect this piecemeal planning orientation (Ministry of Planning, 1983).

45

See Mitra and Kamal, 1984 op.cit.. In the past few years sterilization services have been highly successful (see Measham et al., 1982). Some observers attribute this impact to programme commitment, since workers who recruit acceptors are compensated with a modest referral fee, and individual workers directly benefit from the success of this programme.

46

See Ministry of Planning, 1983.

47

A useful, but not widely disseminated, overview of the management problems of the programme has been prepared in which several recommendations for change were suggested (see Chauls, et al., 1984). This report cites problems and proposed changes, but does not review the underlying institutional determinants of problems and obstacles to implementing the changes proposed.

48

Several service components could not be introduced in the Extension Project areas until basic support services were improved (see, for example, Huque, et al., 1984).

49

Rondinelli(1979) notes the importance of adapting designs to changing conditions, since development projects are so complex. This creates problems for analysis, however, because changing project design impairs inference owing to the contamination of treatments. In the Extension Project the initial field design has been maintained for the minimal period required for inference, with changes planned in a cross over of experimental cells in late 1985. However, incremental changes have occurred in the system of liaison and utilization of research which have informed the redesign of the second field experiment. That is, the study is both adaptive and fixed, attempting to respond to changing needs, yet maintaining a fixed field experimental design.

REFERENCES

- Adnan, S.
1978 "A review of landlessness in Bangladesh 1877-1977,"
Chittagong: Department of Economics (mimeographed report).
- Akbar, J.; J. Chakraborty, N. Jahan, and J.F. Phillips
1982 "Dynamics of depot medroxy-progesterone acetate (DMPA)
use-effectiveness in the Matlab Family Planning Health
Services Project," Paper presented at the Seventh Annual
Contributors Conference of the Bangladesh Fertility
Research Programme (December 8-9).
- Arthur, W.B. and G. McNicoll
1978 "An analytical survey of population and development in
Bangladesh," Population and Development Review, 4(1):23-80.
- Bangladesh Health Information Unit.
1977 "Bangladesh Health Profile," Dacca: Health Information Unit,
Ministry of Health and Population Control, Health Division.
- Bangladesh Bureau of Statistics
1984 Statistical Yearbook of Bangladesh, 1983-1984, Dhaka:
Ministry of Planning.
- Bangladesh Bureau of Statistics
1984a Population Census of Bangladesh, 1981 National Volume,
Dhaka: Ministry of Planning.
- Bangladesh Rural Action Committee
1983a The Net: Power Structure in Ten Villages, Dhaka: BRAC
Printers.
- 1983b Who gets What and Why: Resource Allocation in a Bangladesh
Village, Dhaka: BRAC Printers.
- Banerji, D.
1974 "Social and cultural foundations of health service system,"
Economic and Political Weekly, 9(32-24):1333-1346.
- Becker, S. and M.A. Sardar
1980 "Seasonal patterns of vital events in Matlab Thana," in
R. Chambers, R. Longhurst, and A. Pacey (eds.). Seasonal
Dimensions to Rural Poverty, London: Frances Pinter
(Publishers) Ltd.
- Bell, D. E.
1980 Special Issue: Health and Population in Developing
Countries, Social Science in Medicine, 14C(7):63-65.

- Berelson, B.B.
1969 "Beyond Family Planning," Studies in Family Planning, (38):1-16.
- Bhatia, S.
1983 "Contraceptive users in rural Bangladesh: A time trend analysis." Studies in Family Planning, 14:20-28.
- Bhatia, S.; W.H.Mosley, A.S.G.Faruque, and J.Chakraborty
1980 "The Matlab family planning health service project," Studies in Family Planning, 11(6):202-212.
- Cain, Mead
1981 "Risk and Insurance: Perspectives on Fertility and Inequality in Rural India and Bangladesh." Population and Development Review 7(3):434-474.
- Chaudhury, R.H.
1980 "Farm size, tenurial relationships, and productivity," Dhaka: Bangladesh Institute for Development Studies (mimeographed).
- Chauls, D.; B.Ryder, W.Zaman
1984 "An assessment of the management of the Bangladesh Population Program," Boston: Management Sciences for Health (mimeographed).
- Chen, L.C.; M.Rahman, S.D'Souza, J.Chakraborty, A.M.Sardar and Md.Yunus
1983 "Mortality impact of an MCH-FP program in Matlab, Bangladesh," Studies in Family Planning, 14:199-209.
- Chowdhury, A.K.M.A.
1984 "The Matlab data on fertility and mortality," in Proceedings of a National Seminar, Dhaka: Population and Development Planning Unit, Planning Commission, Ministry of Planning.
- Chowdhury, A.K.M.A.; S.L.Huffman, and L.C.Chen
1981 "Agriculture and nutrition in Matlab Thana, Bangladesh," in R.Chambers, R.Longhurst, and A.Pacey (eds.): Seasonal Dimensions to Rural Poverty, London: Frances Pinter (Publishers) Ltd.
- Chowdhury, A.I. and J.F. Phillips
1985 "Socio-economic status differentials among currently married women of reproductive age for treatment and comparison areas of the Family Planning Health Services Project from the 1974 Matlab Census," Journal of Family Welfare, June (forthcoming).

- Chowdhury, A.I.; J.F.Phillips and J.Chakraborty
 1984a "Recent trends in contraceptive use prevalence and fertility in Matlab: Possible implications of recent demographic dynamics for policy," Paper presented at the Second Annual Conference of the Indian Society for Medical Statistics, Lucknow (November 23-24).
- Chowdhury, A.I.; J.F.Phillips, A.K.Shaik
 1984b "Trends in neonatal, infant, and child mortality over the baseline and project periods of the Matlab Family Planning Health Services Project," Paper presented at the Annual Meeting of the Bangladesh Population Association, Dhaka, August 22-24.
- Clay, E.J., and M.S.Khan
 1977 "Agricultural employment, and underemployment in Bangladesh in next decade," Agriculture Economics and Rural Science, Paper Series (Number 4) Dhaka: Bangladesh Agricultural Research Council.
- Committee on Population and Demography
 1981 Estimation of Recent Trends in Fertility and Mortality in Bangladesh, Washington, D.C.: National Academy Press.
- Demeny, P.
 1975 "Observations on population policy and the population program in Bangladesh," Population and Development Review 1(2):307-322.
- Directorate of Population Control and Family Planning
 1979 Financial allocation in the five-year annual development plans and actual expenditure, 1973-1978 (mimeographed).
- Foster, G.M.
 1967 "Peasant society and the image of limited good," in J.M. Potter, M.N. Diaz, and G.M.Foster (Eds.): Peasant Society, Boston: Little Brown, and Company.
- French, L.; and C.H.Bell
 1978 Organization Development - Behavioral Science Interventions for Organization Improvement. Prentice-Hall International Second Edition.
- Freedman, and B.Bereison
 1976 "The Record of Family Planning Programs," Studies in Family Planning, Volume 7, Number 1 (January) pages 1-40.
- Glaser, E.M.; H.H.Abelson, and K.N.Garrison
 1983 Putting Knowledge to Use, San Francisco: Jossey-Bass Publishers.
- Hartman, B. and J. Boyce
 1983 A Quiet Violence, London: Zed Press.

- Huque, A.A.Z.; M.A. Koblinsky, J.F. Phillips
 1984 "Operational barriers to implementing a domiciliary injectable contraceptive programme in rural Bangladesh," Paper presented at the ninth Annual Conference of the Bangladesh Fertility Research Programme, November.
- Koblinsky, M.; J.F. Phillips, Md. Yunus, and R. Simmons
 1984 "Barriers to implementing an effective national MCH-FP programme," Paper presented at the Annual Meeting of the National Council for International Health, Washington, D.C. (June 10-13).
- Khan, A. Majeed
 1967 "Changing pattern of society in East Pakistan," Dhaka: Sweden Pakistan Family Welfare Project (mimeographed).
- Khan, A. R.
 1977 Poverty and Landlessness in Rural Bangladesh, Geneva: International Labour Organization, Report Number 9.
- Iftikhar, A.
 1974 "Employment in Bangladesh: Problems and prospects, in E.A.G. Robinson and K.B. Griffith (eds.): The Economic Development of Bangladesh Within a Socialist Framework, London: MacMillan, p.248-251.
- Lapham, R.J. and W.B. Mauldin
 1984 "Family planning program effort and birthrate decline in developing countries," International Family Planning Perspectives, 10(4) 109-118.
- Maloney, C.; K.M.S. Aziz and P.C. Sarker
 1981 Beliefs and Fertility in Bangladesh, Dhaka: International Centre for Diarrhoeal Disease Research, Bangladesh.
- Maru, R.
 1976 "Birth control in India and in the People's Republic of China: A comparison of policy evolution, methods of birth control, and program organization, 1949-1974," Unpublished PhD dissertation, University of Michigan.
- Mauldin, W.B. and B. Berelson
 1978 "Conditions of fertility decline in developing countries," Studies in Family Planning, 9:89-147.
- Mauldin, W.B. and R.J. Lapham
 1984 "Conditions of fertility decline in LDCs," Background paper, New York: The World Bank.
- Measham, A.R.; A.R. Khan, M.J. Rosenberg, S. Jabeen, J. Akbar, H. Banu, and J.F. Phillips
 1982 "The demographic impact of tubectomy in Bangladesh," International Family Planning Perspectives 8(1):18-32.

- Ministry of Planning, Planning Commission of the People's Republic of Bangladesh
1983 Five Year Plan: 1980, Dhaka: Ministry of Planning.
- Misra, B.D.; A.Asraf, R. Simmons, and G.B. Simmons
1982 Organization for Change: A Systems Analysis of Family Planning in Rural India, Ann Arbor, Michigan Papers on South and Southeast Asia, number 21.
- Mitra, S.N. and G.M.Kamal
1984 Bangladesh Contraceptive Prevalence Survey, 1983: Key Results, Dhaka: Mitra and Associates.
- Morris, D.M.
1979 Measuring the Conditions of the World's Poor, New York: Pergamon Press.
- Muqtada, M.
1975 "The seed-fertilizer technology and surplus labour in Bangladesh agriculture," The Bangladesh Development Studies, 3(4):403-428.
- Ness, G.; and H. Ando
1984 The Land is Shrinking: Planning in Asia, Baltimore: Johns Hopkins University Press.
- Phillips, J.F. and J.Chakraborty
1985 "The management information system of the Matlab Family Planning Health Services Project," (unpublished manuscript).
- Phillips, J.F. and M.A.Koblinsky
1984 "MCH-FP research for programme development: A briefing paper prepared by the International Centre for Diarrhoeal Disease Research, Bangladesh for the Bangladesh Ministry of Health and Population Control," (manuscript).
- Phillips, J.F.; R.Simmons, G.Simmons, and Md.Yunus
1984a "Transferring health and family planning service innovations to the public sector: An experiment in organization development in Bangladesh," Studies in Family Planning, 15(2):62-73.
- Phillips, J.F.; R.Simmons, J.Chakraborty, and A.I.Chowdhury
1984b "Integrating health services into an MCH-FP program: Lessons from Matlab, Bangladesh," Studies in Family Planning, 15(4):153-161.
- Phillips, J.F., J.Akbar, U.Rob, K.A.Mozumder
1984c "Final Report on the Baseline Sociodemographic Survey in Munshigonj Subdivision of Rural Bangladesh", A report submitted to the German Agency for Technical Cooperation (GTZ) by the International Centre for Diarrhoeal Disease Research, Bangladesh (mimeographed, May).

- Phillips, J.F.; W.Stinson, S.Bhatia, M.Rahman, and J.Chakraborty
 1982 "The demographic impact of the Family Planning Health Services Project in Matlab, Bangladesh," Studies in Family Planning, 13(5):131-140.
- Population and Development Planning Unit
 1984 Recent Trends in Fertility and Mortality in Bangladesh, Proceedings of a National Seminar, January 29-31, Dhaka: Ministry of Planning.
- Rahman, A.
 1979 Agrarian Structure and Capital Formation: A Study of Bangladesh Agriculture with Farm Level Data, Ph.D. Dissertation, Cambridge University.
- Rahman, Makhlisur
 1984 Determinants of Areal Variation in Contraceptive Practice in Bangladesh, Ph.D. Dissertation, The Australian National University.
- Rahman, Makhlisur; W.H.Mosley, A.R.Khan, A.I.Chowdhury, and J.Chakraborty
 1980 "Contraceptive distribution in Bangladesh: Some lessons learned," Studies in Family Planning, 11:191-201.
- Rondinelli, D.A.
 1979 "Designing international development projects for implementation," in G.Honadle and R.Klauss: International Development Administration, New York: Praeger.
- Quddus, A.H.Golam
 1979 "Performance of Family Welfare Assistants" Chittagong: Department of Sociology, University of Chittagong (mimeographed).
- Simmons, R.; G.D. Ness, and G.B. Simmons
 1983 "On the institutional analysis of population programs," Population and Development Review, 9(3):457-474.
- Simmons, R.; J.F. Phillips, and M. Rahman
 1984 "Strengthening government health and family planning programs: Findings from an action research project in rural Bangladesh," Studies in Family Planning, 15(2):212-221.
- Simmons, R.; M.A. Koblinsky, and J.F. Phillips
 1985 "Client relations in South Asia: Their programmatic and societal determinants," Paper prepared for the Seminar on Societal Influences on Planning Program Performance of the International Union for the Scientific Study of Population, Jamaica, April 10-13.
- Sobhan, R.
 1982 The Crisis of External Dependence, Dhaka: University Press Limited.

United Nations
1981 Population of Bangladesh, Bangkok: Economic and Social
Commission for Asia and the Pacific.

Warwick, D.P.
1982 Bitter Pills: Population Policies and the Implementation
in Eight Developing Countries, Cambridge: Cambridge Univer-
sity Press.

Wennergren, E.B.
1983 "The agricultural sector in Bangladesh," A consultancy report
submitted to the United States Agency for International
Development (mimeographed, August).

Westergaard, K.
1983 Pauperization and Rural Women in Bangladesh,
Comilla, Bangladesh: Samabaya Press.

World Bank
1984 World Development Report, New York: Oxford University
Press.

Yunus, M.; J.F. Phillips, M. Koblinshy, and R. Simmons
1984 "Strategies for implementing change in a rural health and
family planning programme in Bangladesh," Paper presented at
Annual Meeting of the National Council for International Health
Washington, D.C. (June 10-13).

FIG. I: A CONCEPTUAL FRAMEWORK FOR THE EFFECT OF THREE SETS OF DETERMINANTS OF FERTILITY REGULATION BEHAVIOUR

