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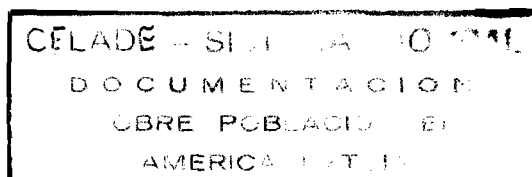
POPULATION, HUMAN RESOURCES AND DEVELOPMENT PLANNING:  
NEED FOR MULTISECTORAL INSTITUTIONAL NETWORK FOR  
POPULATION POLICY IMPLEMENTATION

by

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"POPULATION, HUMAN RESOURCES AND DEVELOPMENT PLANNING:  
NEED FOR MULTISECTORAL INSTITUTIONAL MECHANISM FOR  
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INTRODUCTION

Jamaica has been in the vanguard among Caribbean countries in efforts to transform recommendations of the World Population Plan of Action (WPPA) into concrete actions. With an explicit National Population Policy adopted since 1983, the country is now well along its way in the co-ordination of implementation activities.<sup>1</sup> Moreover, the content of the policy provides evidence that the government of Jamaica views population policy as a fundamental instrument for development.

In keeping with the mandate of the policy, a National Population Policy Co-ordinating Committee (NPPCC), an interministerial body headed by the Director of the Planning Institute of Jamaica (PIOJ), was established by government for direction and co-ordination of the implementation activities of

the policy. The NPPCC is assisted in the execution of its tasks by a Secretariat comprising members of the Population Unit situated in the Planning Institute.

Given the socio-economic nature of the policy goals and strategies, however, it is clear that the successful implementation of the policy requires a wider base of multisectoral participation to enable planners and policy makers in other public and private sector agencies gear their programmes and activities to demographic needs as well as assist the NPPCC incorporate the population components into the social and economic plans of the country.

Thus in recognition of the need to build an institutional base for harmonisation of the population policy with national and sectoral programmes and policies, a population policy implementation workshop is considered an important first step in the building of a formal, permanent structure that would function as the co-ordinating mechanism for encouraging interaction among sectors.

On the other hand, the establishment of a decentralised structure such as this for implementation purposes does not necessarily guarantee the generation of concern for population issues among sectoral ministries. This is more so, given the fact that the outcomes of 'hard' policies such as economic and social programmes are tangible while the effects of population policies are very often difficult to visualise directly. Furthermore, the

primary goals of the sectoral programmes are always social or economic, seldom demographic. Also, owing to the long term effect, population policies do not always provide prescriptions to address short term development needs.

Consequently, the only way of achieving adequate consideration of population factors in the socio-economic planning process and ensuring an informed process of resource allocation, is through awareness creation among policy-makers and the instilling of knowledge of the impact of population-economic interaction on their programme outcomes.

In light of the foregoing, the purpose of this paper is two-fold: (a) to highlight some socio-economic implications of the goals and strategies identified in the population policy document through an overview of interrelations between population and development factors and (b) as a consequence, provide suggestions concerning an operational framework for the establishment of a multisectoral population policy implementation sub-committee.

#### POPULATION IN DEVELOPMENT PLANS

Governments' concern for population issues emerged after the Second World War following the unprecedented declines in mortality due to improved health technology and the resultant high growth rates. Evidence of attempts at population influencing programmes was first illustrated in the private

sector family planning programmes of the 1940's and 1950's and the establishment of the government National Family Planning Programme in early 1970.

Although references to overpopulation and the limited capacity of governments for its accommodation are to be found in several reports (e.g. in the Moyne Commission Report),<sup>2</sup> during most of this period, the planning process tended to treat population growth components and economic factors in isolation. Despite Malthus' introduction of the notion of a system developed over 200 years ago, in which aggregate economic and demographic change were tied together by behavior at the family level, development plans seemed to ignore the economic-demographic interrelations aspect.

This was partly due to the fact that, prior to 1970, development planning was primarily concerned with ways of enhancing socio-economic development with output growth representing the dominant target. The strategy for development during this time was termed "industrialisation by invitation". The basic assumption underlying the planning was that the benefits of economic growth would "trickle-down" to alleviate social problems such as poverty and unemployment. Despite the later change of emphasis expanding the scope of planning to deal with improvements in the standard of living and quality of life, population did not become one of the central variables in the planning exercise.

By the late 1970s, however, partly as a result of the awareness created by the 1974 United Nations World Population Plan of Action in Bucharest, indications were that population factors were beginning to be perceived as linked to the wider socio-economic sphere as reflected in the government's statement to the 1974 Conference. <sup>3</sup>

The perception of the link of demographic variables to government policy and action slowly crystallised and by late 1970 could be clearly deciphered in the 1978-82 Development Plan. Although the latter possessed no clear-cut population policy as such, the demographic section included an analysis of future population problems with a summary identifying objectives and goals to be achieved for effective management of the demographic variables. The issues of concern centred on (i) the results of population projections and implications for future growth - the most important being the management of the accelerating youth group (ii) the importance of population redistribution to stem the flow of rural-urban migration (iii) the continued need for fertility control and (iv) the repercussions of emigration both on potential labour skills as well as fertility levels.

Moreover, the means of implementation, though not specifically mentioned within the framework of a population policy, were nevertheless "implied" throughout the Development Plan in the various sectoral chapters which originally took into

account population considerations as an exogenous variable. Hence, programmes indirectly designed to cope with population problems included (a) employment projects (especially for women) (b) increased training programmes (c) additional secondary school plans (d) improved nutrition and maternal childcare programmes (e) population redistribution strategies and spatial planning in the form of rural development projects, urban resettlement schemes and other community development schemes and (f) agricultural production to meet future population demands.

Thus, by the late 1970s, population considerations had already taken a strong hold in the Development Plans of the country. The stage was set for the formulation of an explicit national population policy. The missing link, however, was a clear-cut frame of reference underpinning the manner in which the behavior of demographic and socio-economic variables impinged on the population's living conditions and the method of interaction.

#### ECONOMIC-DEMOGRAPHIC RECIPROCITY IN POPULATION POLICY GOALS AND STRATEGIES

Essentially the goals of the national population policy aim at achieving by the year 2000 (a) a target population size not exceeding 3 million (b) increased life expectancy to 73 years (c) a reduction in fertility through improved quality of family planning services (d) creation of additional employment opportunities (e) reduction in volume of out-migration (f)

balanced rural, urban and regional development and (g) improved satisfaction of basic human needs in areas such as housing, nutrition, education and environmental conditions.

The following section attempts to assemble, on a general level, existing knowledge on the interrelations of the above variables, focussing on the determinants and consequences of components of population change and its implication for planning. The aim is to emphasise that the implementation of population policies should be a collaborative effort on the part of planners and policy-makers from all institutions with population-related programmes.

#### 1. General Framework for analysis

The skeletal framework of the economic-demographic system treats population in terms of both its production and consumption dimensions. The population (comprising households, government and business firms as organisational units) enters production as a flow of labour, capital and natural resources either to market or household production. The output of goods and services produced is then consumed, saved or allocated to further production in terms of investment in physical capital or in human resources in the form of expenditures on education, health and family planning both in the market as well as household sector.

Central to this system is the family and its response mechanisms-the family decision-making process. The family, the



main household unit, is the locus of many decisions that affect both production, consumption and population outcomes. In essence, most of the economic and demographic decisions of individual families are influenced through a combination of government action plus transactions on the market in which relative prices, including wages, provide the main signals to which individuals and families respond.

This basic system has been expanded in many ways to construct a framework incorporating a broader spectrum of socio-economic systems including foreign trade and international financial flows with multiple interactions as illustrated for example in the complexity of recent economic-demographic models and economic-demographic interaction matrices.<sup>4</sup>

From a planning perspective, government decisions concerning programmes, policies and resource allocation can influence family decision either directly or indirectly. Direct effects could be accomplished through, for example, the enacting of legislation or legal reforms that have some bearing on the population's personal goals, for example, children's schooling or other social issues such as illegitimacy of children. Of stronger influence, however, are the indirect effects achieved through the various policies and programmes designed to impact directly on the social and economic environment, but which in turn sends out signals that alter the demographic processes through its effects on

people's decisions concerning, for example, children's education, consumption patterns, mother's work, health practices, the relative attractiveness of spending now or saving for one's old age and migration.

Thus, the implications of this analytical framework are that the creation of an environment to influence the family's decision making behavior in line with the country's social and economic objectives can be accomplished through government action.

All these influences in turn alter the demographic processes through a number of intermediate variables. With regard to fertility, the major 'proximate' determinants comprise breast-feeding, age at entering first union, contraception and abortion.<sup>5</sup>

In the case of mortality, the socio-economic programmes directly influence the risk of morbidity and mortality through a set of intermediate biological variables incorporated in the following: maternal fertility factors; environmental contamination with infectious agents; availability of nutrients to the fetus and infant; injuries and personal disease control factors.<sup>6</sup> The operations of 'push-pull' factors of the environment on decisions to migrate and the resultant socio-economic opportunities are often determined by the age and sex of the migrant as well as personal attributes, especially education levels and occupational skills.

## 2. Effects on Supply and Output Growth

### (i) Macro-economic effects

Demographic variables operate on output growth essentially through (a) an indirect influence on the supply of goods and services and (b) their impact on the demand for the latter, mainly in a direct manner.

#### (a) Private savings

One of the impacts is exerted via household savings, which are jointly determined with private consumption demand and constitute part of the available investment resources. Increases in the population size and changes in age structure could reduce household savings through the creation of high dependency burdens causing a rise in consumption levels and a fall in savings per capita. This relationship does not hold very strongly, however, where wide income inequalities exist.

#### (b) Government savings

Increases in population also influence the manner in which government savings are invested. A slow population growth allows governments to release a larger portion of savings and resources into productive investments (such as industry, construction) which would provide immediate output growth rather than channelling its savings into social infrastructure in order to maintain per capita level of services (example, health, education

etc.) resulting from a growing population. Having to spread resources over more and more people can be counterproductive in the achievement of development goals.

(ii) Educational Requirements

The strain of spreading resources in order to maintain current school enrolment rates and standards, resulting from increases in the school age population over the last decade, is reflected in the rise in the recurrent estimates of expenditure on educational programmes in Jamaica.<sup>7</sup> (Planning Institute of Jamaica ESS). In an effort to improve schooling quantitatively and qualitatively, government is continually faced with decisions of having to generate more national savings or control investments in other productive areas.

On the other hand, recent declines in fertility are having the effect of creating shifts in the age structure, which hold implications for modifying the population's needs for specialised social services. For example, the demand for schooling at different levels has been changing emphasis over time as reflected in the decreases in the number of children eligible to enter primary schools (age 0-9) and the stabilising of the proportion to be accommodated in secondary schools.

Thus, with the projected declines in the schooling age groups, the weight of the population-related burdens appears to be shifting into the adult working age population. Nevertheless, the country is still faced with the responsibility of providing

tertiary level vocational training programmes for the adult population especially in ages 15-24.

(iii) Manpower Supply

Demographic factors also influence output growth more directly through the determination of manpower supply via the size and age-sex composition of the population as well as effects on the age-sex specific activity rates. The latter variables are in turn all affected by economic, social and cultural factors thereby introducing a complex set of interactions.<sup>8</sup>

The legacy of the high fertility years of past decades has left the country facing two problems: a large proportion in the young adult age groups and a high dependency ratio. Recent projections indicate that while the age group 15-19 will remain stable up to year 2000, large increases are expected among the working force age groups 20-45 with the most dramatic increase to be found in the doubling of the population age 30-44 years.<sup>32</sup>

In contrast to school age populations whose rate of growth starts to slow five to six years after a decline in fertility, the growth of working age populations is more or less fixed for 20 years. Just to maintain capital per worker and current productivity, investment will need to grow much faster than the labour force.

Moreover, since both urban and rural populations will be increasing over the next few decades, government will not only be

concerned with the provision of urban employment but also the problem of absorbing more workers into the rural economy. In addition, massive shifts of labour from agriculture, and the rural-urban drift, both by-products of industrialisation, are to be expected.

Current policies on rural development programmes and agriculture restructuring programmes represent ways of indirectly coping with these structural shifts in the labour force. Nevertheless, until the working age population rates slow down, agriculture may have to absorb a large share of labour force growth.

The declining fertility coupled with high rates of emigration have resulted in a labour force growth rate of more than twice that of the population rate. This faster labour force rate could have beneficial social effects through the reduction in the dependency burden and a positive effect on output growth. On the other hand, this effect would be very weak where unskilled surplus labour and underemployment are widespread. Unfortunately, the current high levels of unemployment as well as the 'additional worker effect' created by the entry of increasing proportions of women, especially in traditional occupations, without concomittant changes in the employment structure, has only served to exacerbate the problems of coping with the rapidly growing labour force. Moreover, since eighty percent of the unemployed have not received any kind of

training, the potential for positive labour force growth impacts is not very great.<sup>7</sup>

In light of the above, the government has been taking steps to implement human resource development strategies from several different angles as evidenced in programmes such as (i) the establishment of the Human Employment and Resource Programme (HEART) to co-ordinate and promote skill training activities among the youth (ii) the upgrading of research and data collection through the carrying out of continuous manpower planning surveys and analyses at the Planning Institute of Jamaica (iii) the restructuring and streamlining of the education and training system on the basis of data and research on skill gaps (iv) the development of self employment loan funds (v) training in special areas for self employment, especially for women.

#### (iv) Internal Migration

A major contributor to the problems related to the limited absorptive capacity of urban areas and the accompanying unemployment problems, has been internal migration, which accounts for over half the share of population growth in urban areas in the Caribbean compared with natural increase.

The factors influencing an individual's decision to migrate from rural to urban areas have been reviewed in many studies. What emerges, however, is that expectations about employment and

income differentials in urban areas are not the only factors encouraging rural-urban population flows: high unemployment does not appear to deter migration. It seems that expectations concerning social amenities and services, housing and the quality of life in urban areas also play a role in motivating the rural-urban flow.

The majority of migrants tend to be young adults concentrated in the age range 15-30 and primarily women, whose fertility is usually higher than that of their urban population. It follows therefore that their movements would not only impact on labour force growth through an increase in female participation rates but also add to the growing urban population through the potential fertility of their children or the demographic "multiplier" effect. This in turn, places greater pressure on the absorptive capacity of the urban areas and the ability of the urban economy to provide productive employment for the growing numbers of new labour force entrants as well as the basic social services to accommodate them.

Indeed, migration in excess of job opportunities should be viewed as both a symptom of and contributing factor to the slow economic growth rate. Furthermore, its impact on the development process is much more pervasive than the apparent aggravation of urban unemployment, under-employment or sectoral allocation of human resources. It could be argued that the significance of these movements is more in the context of its implications for



the distributional aspects of economic growth, as illustrated in the distortions and imbalances created in both social and economic opportunities between rural and urban areas.<sup>9</sup>

Thus integrated rural development and agriculture restructuring (AGRO 21) programmes will have to ensure that their components address a wide spectrum of issues related to a combination of infrastructure, extension services, credit, marketing services, employment generation as well as migration and improvements in health, nutrition, housing and training opportunities.

(v) International Migration

An additional demographic factor affecting the manpower supply of the country has been the substantial loss of trained manpower through emigration, resulting in a depletion of the pool of skilled labour considered essential for programme implementation of the economy and the realisation of development goals.

The net result has been an imbalance in manpower demand and supply as evidenced by the co-existence of large pockets of unemployment with skill gaps.

Indeed the links between the demographic and economic processes is well illustrated in the effects of international migration on the manpower development, supply, income level and human resources of the country.

The case for the positive effects of emigration have often been put forward. For one thing, it reduces the population growth, accounting for over one half of the country's natural increase. Emigration has also been found to have significant effects on fertility as larger numbers of women in their twenties, peak fertile years, continue to migrate. Substantial declines in the Jamaica crude birth rate in the late 70's and early 80's were observed to have coincided with the upsurge in outmigration movements.<sup>4</sup>

The profound consequence of emigration in lessening the pressure for jobs has also been a strong argument. It has been estimated that, in the absence of migration during the past two decades, Jamaica would have had to provide 330,000 additional jobs.<sup>10</sup> Nevertheless, in the final analysis the net effect has not been found to reduce the relatively high unemployment levels.<sup>11</sup>

From another perspective, it may be debated that the positive effect of remittances, through the raising of income levels for savings, may help in stimulating economic growth. There is reason to believe that remittances are taking on new importance in the economy, accounting for about 4.5 percent of GNP in 1982.<sup>12</sup> As remittances represent a source of foreign exchange earnings, some contribution could be made to the amelioration of balance of payment problems and foreign debt. On

the other hand, the negative side effects of inflation, stimulation of excessive consumer demands, increased imports and conspicuous consumption may very well offset any expected gains.

Nevertheless, the above positive effects are heavily outweighed by the devastating impact of emigration on the economy's capabilities for development through the drain on the pool of skilled human resources. Indeed, more than half the potential labour force emigrating over the last decade comprised professionals and skilled persons. Comparisons with local training institutions show these numbers to be equivalent to over half the trained output over a three-year period.<sup>13</sup> The effect on the economy is also reflected in the financial loss to governments estimated at over J\$348 million for the same three year period.

The link between emigration and development is further illustrated in the negative relationship found for Caribbean countries between per capita GDP and emigration.<sup>11</sup> The suggestion is that emigration should decrease with the achievement of a certain level of development. A more important implication is that local conditions do matter and therefore socio-economic programmes aimed at retention of potential migrants can make a difference.

This exodus reflects, in part, an imbalance between available resources and the numbers in the population utilising them. The gap is being addressed by government on several

fronts: socio-economic programmes to retain potential migrants as well as attract skills have been proposed which include the expansion of training opportunities and employment generation programmes. Given the long term nature of the latter, the implementation of measures to fill immediate skill requirements include the proposal for the development of the Human Resources Facility (HRF) under the umbrella of UNDP for the provision of short term technical assistance not provided under other traditional sources of assistance programmes.

### 3. Fertility in Socio-economic Planning

The relationships which determine the links between economic programmes, fertility and mortality factors in the economic-demographic system are far more complex and elusive than those outlined above and not equally well understood. As described earlier in the analytical framework, some effects are direct, but a large part operates indirectly through intermediate variables which are either social, cultural or biological and which have a direct relationship on fertility and mortality in their own right.

Moreover, the relationships appear to be more elusive as they are generally determined by the behavior of individuals or families which makes them less easily accesible to rigorous quantitative analysis.

Nevertheless, given their instrumental role in shaping economic and demographic outcomes, and their ability to be influenced by government policy, it is essential that they be taken into consideration in the social and economic planning process.

The following section will attempt to provide a brief overview of the impact of selected socio-economic variables on fertility via the major intervening variables.

(i) Education and Fertility

Education has been consistently found to be an important factor accounting for fertility differences throughout the Caribbean. Most studies using different sources of data (census, world fertility survey, contraceptive prevalence survey) have confirmed an inverse relationship, which remains unchanged even after controlling for other factors such as work history, residence and partner's attributes. Moreover, the woman's education has been found to have greater influence than her partner's partly due to higher opportunity costs for the woman.<sup>14</sup>

A number of proximate determinants intervene between education and fertility: a delay in entering first union has been associated with education; fertility differentials among union status as well as changes in numbers of partners are highly correlated with education; proportions entering union types are, to some extent, determined by educational status;<sup>15</sup>

education also increases contraceptive use partly through changes in aspirations, preferences and family size norms, as well as reduction in costs of regulation. Unmet family planning needs are also higher among those with lower levels of education;<sup>16</sup> a reduction in fertility can also be accomplished through education's influence in reducing infant mortality via the three channels of biological, replacement and insurance risk effects.<sup>17</sup>

On the other hand, education can function as a fertility increasing agent through its effect on a number of biological 'proximate' determinants: in combination with other modernising factors such as urbanisation and women's labour force participation, education increases fertility via a negative impact on breastfeeding;<sup>18</sup> increases in fecundity and declines in sterility as a result of reductions in diseases and improvements in nutrition are associated with rising education levels.<sup>19</sup>

But it is to be noted that the effect is not always a linear one. In fact, the shape of the curve has been found to be humped, depicting very slight rises in fertility up to 4-6 years of primary school attainment after which a threshold is reached beyond which negative fertility differentials are observed with declines being more marked after 7-9 years of schooling. These relationships, however, change over time, and are closely related to the development level of the country. Thus a different picture emerges when a measure of recent fertility is

used: the illustration is one of decline, although no differentials appear in the middle range of education attainment (3-7 years schooling).<sup>20</sup> The latter is probably a reflection of the effects of widespread education programmes implemented over the past two decades and the resultant spread of education across all groups. This narrowing of differentials with respect to education has also been found in contraceptive use practices among other Caribbean countries.<sup>21</sup>

Of course, the above holds policy implications for the use of education as a fertility influencing agent: It appears that a saturation point is being reached due to the narrowing of education differentials within the population. On the other hand, education has other direct and clearer effects on development via improvements in the quality of human resources and labour force-participation.

(ii) Labour force participation and Women's status

Women's participation in the labour force has been found to reduce the number of children they have. Despite the complexity of the relationship and the ambiguity with respect to causal direction, data for the Caribbean support a strong inverse relationship between women's employment and fertility (although the correlation is not as marked for Jamaica). Furthermore, the link does not merely reflect associations with other socio-economic variables.

The latter relationship can be further classified with respect to work patterns and characteristics: employment before birth tends to act as a depressing influence on the level of fertility (utilising cumulative, initial or recent measures). Current work status is not as strongly correlated however; level of fertility is highest among agricultural and unskilled workers and lowest among the professional and clerical; little difference exists among non-farm workers as to whether women work at home or away from home; no significant difference exists among workers and non-workers in their desire for children but there is strong relationship between current employment and demand for contraception.<sup>22</sup>

In essence, women's employment exerts an impact on fertility via the following proximate determinants: employment before first birth delays entry into union status and lengthens first birth interval; current employment reduces length of breastfeeding, thereby exerting a positive influence; employment increases demand for use of efficient contraception.

However, the cause and effect relationship still appears ambiguous. In the Caribbean, data indicate that large families have not prevented women from participating in the labour force. This is especially so among the lower economic status groups. The predominance of female-headed households and the need to support children in the absence of consistent support from father seems to represent a factor forcing women to enter the labour



market. This is evidenced by the fact that women who begin to work only after the first birth tend to have higher fertility than those who worked before, or at times, higher than those who have never worked.<sup>23</sup>

Consequently, since economic need propels women into the labour force, under circumstances of high unemployment, the economic support of men is often viewed as a source of income thereby contributing to higher fertility.<sup>24</sup>

Thus from a planning perspective, it is not clear whether employment creation projects for women function as fertility influencing or population accommodating policies. Nevertheless, improvements in the status of women (whether through provision of education or employment opportunities) represents a valuable goal in its own right.

#### 4. Mortality

With a crude death rate of about 7 per 1000 and average life expectancy of approximately 69 to 70 years, the current mortality level prevailing in Jamaica and many other Caribbean countries is relatively low. On the other hand, infant mortality remains unacceptably high around 27 per 1000 live births, possibly due to the fact that the contribution of public health improvements

have already been exploited yet economic development has not been rapid enough to offset the declining contribution of these programmes.

Decline in infant and child mortality is often attributed to one or more of the following aspects of economic and social development: (a) rise in per capita income and nutrition (b) equal distribution of income (c) improvements in health technology and (d) progress in literacy and education.

The basic analytical framework for mortality development linkages suggests that education, income and other socio-economic factors affect infant mortality indirectly through differences in (i) nutritional availability and practices (especially weaning and breastfeeding) (ii) childcare practices (iii) decision making ability with regard to child health (iv) access to and utilisation of health care and medical services (v) housing conditions and other health care residential health risks and (vi) occupational health risks.

Literacy, especially maternal education, has been found to play a major role in determining the level of infant and child mortality in Jamaica and Guyana.<sup>25</sup> One possible mechanism is the greater awareness of the literate woman of the need to use modern health facilities and to have a healthy sanitary environment. Other mechanisms whereby education affects mortality are perhaps, through generating modern attitudes towards health, disease, nutrition, personal hygiene and sanitation.

The economic-mortality link is also reflected in differentials in infant mortality by union status. The higher infant mortality found among illegitimate children or those from common law and visiting unions is representative of their economically and socially disadvantaged position which leaves them relatively less protected against diseases related to environmental factors.

This is more so in light of the type of disease prevalent among the children of these unions-gastro-enteritis - which is associated with inadequate social conditions and poor nutritional status.<sup>26</sup> Given the lower socio-economic status of women in common law unions, the higher rate for common law over visiting reinforces the strong links of infant mortality with education.<sup>27</sup>

A low family income can influence mortality directly through reducing quality and quantity of nutrition, reducing access to medical facilities and limiting investments in better housing and sanitation facilities. Indirect effects can also be achieved through the forcing of women to seek employment outside the home which may limit the amount of attention to be devoted to childcare and feeding requirements of the children, although the very well documented role of the grandmother in caring for the children may probably reduce some of the latter negative effects.

Viewed from another perspective, increased survivorship and improved health have potential positive effects on economic

growth through factors such as lengthening the expected years of working life, increasing physical and mental well-being of workers, greater incentive for human investment, increased productivity via the education effect, all of which should lead to higher ratios of output per unit of human and physical capital.

However, there is some evidence that the rate or improvements in life expectancy so far achieved, is slowing down, and future reductions in mortality are likely to depend more than ever on development factors and its effect on changing people's behaviour especially with respect to improved living conditions, education for women and better health care for the disadvantaged groups. This is further supported by the pattern of causes of death still prevailing among infants and the persistence of diseases such as diarrhea, which are associated with poor socio-economic environment, malnutrition and limited education.

##### 5. Economic-demographic relationships and simulation models

The above analysis was discussed within the context of a partial framework, that is, each set of relationships was considered separately as uni-directional or, in some cases, two-way relationships. This approach was adopted in order to illustrate as simply as possible the way the interactions operate.

However, the interrelationships among demographic and economic variables are far more complex and interdependent than outlined. Moreover, the connections between changes in the population and changes in the economy are often non-linear, subject to lags and run in both directions.<sup>28</sup> As observed, for example, decision making with respect to reproduction in the family is determined by a series of interconnected variables pertaining to mortality, education, employment and income. In a similar manner, growth of the labour force has implications for employment, savings rate, consumption, migration and income change, all of which are linked, but which in turn affect fertility and mortality.

In view of the increased complexity of the relationships, a number of economic-demographic simulation models have been developed to provide more comprehensive frameworks that bring together several of these interrelated factors in a single coherent model. Among these are the ILO Bachue family of models which focus on the interactions between populations, employment, income distribution and economic development.<sup>29</sup> The latter is currently being developed for Jamaica at the Planning Institute of Jamaica and will be elaborated on in more detail in another paper.

These models are useful in the planning and policy making process and can serve to enhance planners' appreciation of

interdependencies between patterns of population change and patterns of development. This would be of significant value in strengthening the multisectoral co-ordination aspects of the population policy implementation thereby ensuring deeper consideration of population factors in the development plans.

#### 6. Programmatic implications

The above discussion merely attempts to delineate, in a general way, the possible relationships between selective population and socio-economic variables in an effort to illustrate the multisectoral nature of population planning.

Some of the findings point to the establishment of relationships but the identification of determinants is not always clear. Of course this is a distinction required for policy formulation. Unfortunately, much of the research establishing links has not gone further to explore systematically the programmatic initiatives required to influence the desired demographic change or outcome. This kind of research is essential, however, for the effective functioning of the multisectoral implementation committee.

Notwithstanding, it can be argued that the particular development strategy of the government, leading to the formation of a specific package of socio-economic policies, can impact on the demographic outcomes through the creation of an environment

that alters the decision-making process of individuals and households. The latter changes will in turn initiate feedback that can influence social and economic programmatic outcomes.

For planning purposes, due to the complexity of the interconnections, however, it is never very easy to judge the importance of one programme compared with another, nor does it seem as if one programme can be enough to achieve the desired effects. On the other hand, specific programmes seem to be able to exert multiple effects; for example, the multiple effects of education on fertility, women's employment, the propensity to migrate and infant mortality.

In this regard, the synergistic effects should also be taken into consideration. By synergisms is meant that the same socio-economic determinant, for example, education, can operate independently on more than one intermediate variable to influence a desired demographic outcome, resulting in a combined effect that is more than would be expected by the simple sum of the operation of each intermediate variable. But the synergistic effect can also occur in the reverse way; several social and economic programmes interacting to influence one specific demographic outcome. On the whole, it seems that programme efforts work best in concert; a country benefits best and achieves faster results from the simultaneous implementation of several social and economic programmes.<sup>30</sup>

## 7. Multisectoral Sub-Committee for Population Policy Implementation

Given the broad perspective of population planning indicated in the above discussions on economic-demographic interrelations, it is clear that the implementation of the national population policy requires the collaborative efforts of a very broad cross-section of policy makers from public and private sector organisations responsible for population related programmes.

As earlier discussed, what is now needed is the translation of the national population policy strategies into specific policies, programmes and projects for which individual organisations are responsible.

However, the process of implementation is not a straightforward one due to the differing degrees of involvement of various population related organisations. Thus policy or programme issues related to population can fall into different categories resulting in a complex situation of institutional interaction. For example, the first set of institutional relations concern factors directly associated with population policies, such as programmes related to the immediate determinants of fertility. In this case, family planning programmes and other aspects concerned with the implementation, evaluation and delivery of services would represent this direct level of interaction.



On another level would be a second set of policy issues not directly connected with family planning but which have an intimate bearing. These represent, for example, health programmes for reducing infant mortality, pre-natal and post-natal care, improving the status of women, improving literacy and education levels, improving the nutritional status of target groups and employment creation. Hence, although the policy initiative would come from various ministries, the importance of introducing population components into them is very clear.

The third level relates to a wider set of policies which, though not directly related with population policies, could have important consequences for them. These include integrated rural development programmes; subsidies on food items and other social services; increasing incomes.<sup>31</sup>

In view of the need to establish a multisectoral working sub-committee to achieve the various levels of interaction required for population policy implementation, the following is a suggestion for the establishment of such a committee.

#### 8. Framework for Establishment of Population Policy Implementation Committee

##### (i) Frame of Reference

(a) Integration in Planning Process - the committee will be responsible for assisting the NPPCC in integrating population into the planning process.

Given the complexity of the planning process, demographic factors could be integrated in various forms along a continuum ranging from implicit to explicit programmes and activities. Thus, integration could take the form of merely proposing plans, policies and programmes to accommodate a population situation or utilising both demographic and socio-economic programmes and policies to influence population trends in line with the development goals of the country.

Opportunities exist for integrating population factors into each stage of the planning process involving (a) the analysis of the situation (b) the formulation of goals (c) the design of strategies (d) the identification of indicators for monitoring and evaluating and (e) the translation of these strategies into specific programmes, policies and projects.

In addition, the use of the economic-demographic models as planning/policy-making tools to enhance the integration process will need linkages between model builders and policy-makers (potential users). Thus all population-related sectors should be involved in the construction and applications of the model. This would entail collaboration on (a) assumptions and their implications (b) agreement on nature of problems to address and goals to pursue (c) assignment of priorities in model (d) alternative strategies to be considered (e) verification of output and provision of data input requirements.

(b) Monitor - the committee will function as a mechanism for monitoring programme implementation.

(c) Evaluation - evaluation of programme indicators and outcome also requires the assistance of the Committee. Thus, in an operational context, indirect effects have to be taken into account and adjustments or corrective action recommended if impediments to the policy goals are observed.

(d) Information dissemination - the dissemination of information, research findings as well as provision of statistical data would be an additional responsibility.

(e) Research - in order to ensure that research findings have programmatic significance and can be used as guidelines for action by policy-makers, an additional function of the Committee would be to participate in the process of identifying the fundamental research questions as well as assessing research findings.

(f) Resource allocation - given the fact that planners are primarily concerned with resource allocation, another important function of the committee would be to influence resource allocation within the public and private sectors and ensure that relative weight be given to population influencing programmes in the public investment plan.

(ii) Framework for Functioning of Committee

Within the above frame of reference, the specific functions of the Committee should include:

(a) to analyse population policy and sectoral plans in light of some frame of reference concerning economic-demographic interactions in order to determine the reciprocal outcomes of the demographic and socio-economic programmes.

(b) to identify areas of population policy and sectoral plans considered important for promotion of integration

(c) to suggest new programmes that could incorporate knowledge about reciprocal relationships between population dynamics and other socio-economic variables and influence population policy desired outcomes.

(d) to provide a forum for the exchange of information on reciprocal relationships

(e) to determine the role of agencies within the operational framework

(f) to specify relationships and division of responsibilities

(g) since planning systems have different conceptual frameworks, another function is to identify targets of opportunity for linking integration activities to these frameworks. In other words, identify those areas where decisions can take on a multisectoral character with implications (quantifiable, if possible) for different facets of population planning.

(iii) Establishing Operational basis

In order to establish an operational basis, the following issues will have to be addressed:-

1. What particular features of socio-economic and demographic relationships would each agency prioritise for the purpose of developing recommendations to enable the mechanism to function.
2. What skill resources are available or would be required in each institution for the integration process
3. What is the organisational structure of the planning units of each sector, particularly with reference to the way in which information would be utilised in planning decisions, programme design, implementation and evaluation.
4. What are the concerns and information requirements of agencies.
5. How can gaps be bridged - what suggestions concerning an operational mechanism for the integration process can be utilised

CONCLUSION

The purpose of this paper was twofold:

- (a) to present a brief overview of the relations between population and development with reference to selected indicators in the Jamaican national population policy and (b) in light of the observed interrelations, to argue for the need for a multisectoral population policy implementation sub-committee.

An historical review of population in the development plans was followed by a description of the economic-demographic framework used for analysis. A brief overview of interrelations, with emphasis on the determinants and consequences for planning was then presented. Finally, in view of the need for a multisectoral committee for the successful implementation of the population policy, the outline of an operational framework for the establishment of a 'Population Policy Implementation' mechanism was suggested.

This paper represents an attempt to illustrate to sectoral planning agencies that collaboration in the implementation of the population policy is one of the ways in which they can support each other in reaching their own goals while at the same time, realising the national objectives of the government through a reciprocal process based on co-ordination with their National Population Policy Co-ordinating Committee.

## NOTES

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