
SUSTAINING DEMOCRATIC GOVERNANCE IN GHANA: THE INTERDEPENDENCE OF HEALTH, AGRICULTURE AND EXTENSION

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Abstract

A recent USAID report showed that, although the health status of Ghanaians has improved in recent decades, many health challenges still remain. Examples include: a) the maternal death rate which in some parts of Ghana, is 800 per 100000 live births; b) malaria which is the basis for 40% of outpatient visits and 25% of the mortality of children under six years of age; c) inadequate and insufficient prevention efforts, poor nutrition and lack of early and effective treatment. In addition, about 400,000 Ghanaians live with HIV/AIDS with over 50,000 AIDS related orphans. Moreover, access to quality health services at the community level presents a major constraint for providing quality health care to community people. With respect to agriculture, despite the general improvement in cereal crops and other basic staple food crops, agricultural production fluctuates immensely from year to year and from region to region. In this paper the associations among gender, educational and health disparities and type of place of residence are investigated. Case studies of successful health and agricultural interventions that took place in Ghana in past are explored. The success stories are brought into perspective with the current health and agricultural challenges facing Ghana and possible solutions are explored.

Introduction

Democratic governance has been defined by UNESCO as the governance that offers the populations the right and means to emancipate themselves from their government to advance their own cause and claims as regards world affairs (UNESCO, 2001). The existence of social disparity is a threat to democratic governance. Disparities in the provision of health, education, nutrition and other social services in Ghana was perhaps best captured by Wheelan, (1999) when he wrote that “Ghana's seemingly impressive growth figures are some of the highest in Sub Saharan Africa, but these have been achieved at a social cost entailing immeasurable suffering and poverty. The glittering enrichment of the bourgeois has not been shared with the population at large. Rather it has deepened the social disparities that exist.”

A report from the USAID reveals that, although health status of Ghanaians has improved in recent decades, many health challenges still remain. Examples include: a) the maternal death rate which in some parts of Ghana, is 800 per 100000 live births; b) malaria which is the basis for 40% of outpatient visits and 25% of the mortality of children under six years of age; c) inadequate and insufficient prevention efforts, poor nutrition and lack of early and effective

treatment. In addition, about 400,000 Ghanaians live with HIV/AIDS with over 50,000 AIDS related orphans.

The Extension System plays an important role in the provision of health education, risk prevention, and agricultural production, especially in remote rural areas. In fact, for some communities and remote villages, extension represents the only face of government and the best catalyst for sustainable development (Ngomane & Flanagan, 2002). Extension builds the community structures necessary for democracy. Therefore democracy improves governance by promoting accountability, transparency and the responsiveness of decision-makers to the plight of ordinary citizens (Sanbrook & Oelbaum, 1997). Democracy becomes real for the people when they have a say or a share in it. Sustaining the ideals of democratic governance in Ghana will involve, eliminating disparities in health, nutrition and in the provision of shelter and education. Democracy works to eliminate disparities. The persistence of disparities in a democratic governance may threaten its existence. Fairness in the provision of the capacity or empowering of all citizens to make the best use of their capabilities would therefore have important implication for agricultural extension.

Purpose of Paper

The main purpose of this paper is to investigate the association between gender, type of place of residence and educational, health, nutritional and other social disparities that may threaten democratic governance in Ghana. The paper will also explore historically, how problems pertaining to health, nutritional and other social disparities were addressed in the past. This is intended to help create awareness and support other efforts being made to strengthen institutional capacity of the Ghanaian extension system to plan for and manage programs that integrate gender, residence, health and agricultural concerns. The mandate of the Ghanaian extension include diffusion of appropriate and proven technologies to the farm family, removing social disparities in education, health and nutrition will help strengthen Ghanaian Extension. It is anticipated that specific recommendations and suggestions from this paper will eventually lead to the following outcomes:

- Improve the quality of extension services in health and agriculture
- Improved health for the farm family
- Provide an impetus for a strengthened HIV/AIDS prevention effort
- Add to available literature to increase access to health and agricultural information.

Theoretical/Philosophical Themes

Several thousands of nongovernmental organizations are actively engaged in health improvement and take part in setting global agendas to eliminate health disparities in the world. UN agencies continue to play significant roles in health initiatives that are implemented in partnership with many players and organizations making unpopular a health program that is run by only one organization. It appears that the world and specifically countries like Ghana are not doing enough to make necessary advances in health. Analysis by the Global Governance Initiative of the World Economic Forum shows that many nations of the world have not made sufficient efforts to meet the goals of the UN Millennium Declaration - UN Millennium Development Goals (Kickbusch & Payne, 2005). The MDGs focus attention on reducing poverty and hunger, achieving universal primary education, promoting gender equality and the empowerment of women, reducing child mortality, improving maternal health, combating endemic diseases, ensuring environmental sustainability and developing a global partnership for

development (Coate, Karlsson, Wells & Kunz, 2005). The MDGs set the tone and provide the context within which UN agencies and member states including Ghana address their development issues.

Methods/Procedures and Data Sources

In this paper, the authors employed two methods to investigate social disparities in the Ghanaian setup. First, we investigate how gender and the type and place of residence interact to generate within country disparities in levels of education attained by adult women and men. Disparities in education levels attained by women and men are important to investigate in a democratic governance study because it has been found that, education of adults especially women in the household significantly impacts children's education, nutrition, health and general well-being (Filmer, 2000). The 2003 Ghana Demographic and Health Survey (DHS) couple's dataset were used to investigate education disparities of women and men.

Analyses using cross-tabulations and chi-square were used to explain disparities that existed between men and women, and also between people living in urban and rural areas. In addition to disparities in educational level attained by adults, disparities in health knowledge and access by women living in rural and urban areas were analyzed to further highlight the extent of the problem of social disparities in Ghana. Women's health knowledge was investigated in terms of knowing where to go to seek medical care or help when a health care need arose. Access to health was measured in terms of the way women identified with whether it was more or less problematic to: 1) access health financially; 2) and whether they find more or less problem with the distance where the health care facility is located.

Secondly, we reviewed literature on successful case studies of health (control of river blindness, sleeping sickness, bilharzias and malaria) and agricultural interventions (protein enrichment of traditional and weaning foods) in Ghana. These case studies were used as examples to show how the Extension Service in Ghana can confront current challenges it faces in eliminating malnutrition, and emerging trends of protein energy malnutrition, as well as health-threatening conditions such as malaria as a result of urban agriculture and HIV/AIDS. Malaria stemming from urban agriculture and HIV/AIDS is fitted with issues of disparities because in Ghana people at greatest risk of contracting HIV/AIDS or Malaria are those that are socially most disadvantaged. For example urban agriculture is promoted by unemployed migrants from rural areas who cannot find jobs in the formal sectors in the cities.

Results

The purpose was to investigate the association between educational disparities, gender and type of place of residence. The analysis leads to two major findings:

Disparities in levels of education attained by adults

There exists a female disadvantage in educational level attained (Table 1).

Table 1. Gender based disparities in educational level attainment in Ghana.

Educational level	Male (%)	Female (%)
No education	36.6	49.4
Primary	13.0	18.0
Secondary (elementary and high school)	44.3	30.8
Tertiary	6.1	1.8

Total	100	100
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The extent of this disadvantage varies enormously between males and females (Table 1) and between rural and urban areas (Table 2) with males and people living in urban areas clearly at advantage than females and those living in rural areas. Between rural and urban areas in Ghana, the gaps are significant in all education disparities for women and for men (Table 2).

Table 2.. Disparities in educational level attained by gender and type of place of residence.

Educational level attained	Male (%)			Female (%)		
	Type of place of residence			Type of place of residence		
	Urban	Rural	Total	Urban	Rural	Total
No Education	4.1 (14.6)	32.5 (45.3)	36.6	7.3 (25.7)	42.1 (58.8)	49.4
Primary and above	24.1 (85.4)	39.2 (54.7)	63.4	21.0 (74.3)	29.6 (41.2)	50.6
Total (N = 2133)	28.3 (100)	71.7 (100)	100	28.3 (100)	71.7 (100)	100
	Pearson Chi-Square (χ^2) = 175.6, P < 0.05			χ^2 = 189.05, P < 0.05		
	Cramer's V 0.287, P < 0.05			Cramer's V 0.298, P < 0.05		

Values in bracket indicate % within type of place of residence

While gender gaps appear large between men and women living in rural or urban areas, variations brought about by the type of place of residence seems to be a major factor influencing educational disparities affecting adult men living in rural and urban areas. Adult men living in urban areas clearly have advantage over those who live in rural areas. It appears also that the type of place of residence of women interacts with gender to exacerbate gaps in the levels of educational attainment between men and women in Ghana. This is particularly disturbing in light of the fact that, levels of adults education attainment especially that of women have significant impact on children's own education, nutrition, health and general well-being

Disparities in health knowledge and access for women

Significant disparities exist in health knowledge and health access for women. Women who live in urban areas clearly have advantage over those who live in rural areas (Table 3).

Table 3a. Getting medical help for self, know where to go.

Extent of Problem	Urban (%)	Rural (%)	Total (%)
Big	1.8 (6.5)	9.2 (12.8)	11
Small	26.4 (93.5)	62.5 (87.2)	89
Total	28.3 (100)	71.7 (100)	100

$\chi^2 = 17.75$, P < 0.05, Cramer's V 0.091, P < 0.05. Values in bracket indicate % within type of place of residence

Table 3b. Getting medical help for self; getting money needed.

Extent of Problem	Urban (%)	Rural (%)	Total (%)
Big	11.5 (40.8)	49.5 (69)	61
Small	16.7 (59.2)	22.2 (31)	39

Total	28.3 (100)	71.7 (100)	100
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$\chi^2 = 144.89$, $P < 0.05$, Cramer's V 0.261, $P < 0.05$. Values in bracket indicate % within type of place of residence

3c. Getting medical help for self; distance to health facility.

Extent of Problem	Urban (%)	Rural (%)	Total (%)
Big	4.8 (17.1)	39.3 (54.8)	44.2
Small	23.4 (82.9)	32.4 (45.2)	55.8
Total	28.3 (100)	71.7 (100)	100

$\chi^2 = 250.03$, $P < 0.05$, Cramer's V 0.342, $P < 0.05$. Values in bracket indicate % within type of place of residence

Disparities brought about by the type of place of residence of women appear to be a major factor influencing women's access and knowledge about health.

Addressing social disparities in Ghana

One way to address Ghana's current social disparities is to look back in time to see how disparities in health provision, nutrition and education were addressed. In Ghana's past, integration of agriculture, health and education programs have been used to successfully eliminate some health and nutrition disparities. A well-balanced and planned complementation between agriculture, health and education may help to resolve current and future disparities.

Case studies

The strategy is to develop an effectively integrated, agriculture, health and education system. A model of such framework in the past consisted of two sub-units of health and nutrition on one hand, and agriculture and related field (such as extension education) on the other. The health sub-unit was defined by child and maternal care, health services and health status. Child and maternal care included hygiene, food preparation, breastfeeding practices, etc. Health services included health and sanitation. The agricultural based and related field was defined by production of food crops, vegetables, livestock, tree crops, fish, food processing, and various income generating activities. The income-generation activities included home production, cash earnings from crops, livestock, food for work and income earned from agriculture-related activities. Agricultural interventions affected the nutritional status of families through the support of production for household consumption and improving income-generation. Agricultural research and education reinforced the system through researching and extending information about improved seed and knowledge about health, farming and post harvest practices.

Protein enrichment of traditional foods

Protein Energy Malnutrition (PEM) also known as Kwashiorkor and Marasmus were diseases that were very prevalent among children from low income families. The problem was addressed by the protein enrichment of traditional foods with legumes such as soy beans or cowpea. Since cereal foods such as corn, sorghum and millet played a major role in the diets of families, enriching with legumes improved diet which helped to address most malnutrition related disease especially in children during weaning (Sefa-Dedeh and Plange, 1989, Sefa-Dedeh, 1984). Other successful cases where protein enrichment of traditional foods helped to minimize the effects of diseases related to malnutrition have been shown below:

- Two weaning foods were produced in 1975 (Hiwot 1975; Kopp, in Goodman 1976, cited by Shurtleff & Aoyagi, 2004). The blended weaning food was given the name Lisha.

- The nutritional quality and acceptability of weaning foods incorporating amaranth and corn (*Zea mays*) were distributed from the Ghana Food Distribution Corporation.

They helped to significantly reduce PEM and Kwashiorkor health conditions that afflicted children from low income families.

The Volta Basin Research Project

The Akosombo Dam on the River Volta was built in 1963 to provide hydroelectric power, fishing and water transportation as well as improved opportunities for irrigated agriculture. The impoundment of the Volta River, however, brought many hardships and problems. These included slowing down of the flow of the river in both downstream and upstream and flooding of cultivated fields. Some of the health related problems that emerged with the flooding and the building of the dam included:

- Malaria affecting populations living within one mile radius of the lakes or one of the numerous mini-lakes created as a result of the flooding that ensued.
- Invasion of aquatic weeds giving rise to increased density of aquatic snails that facilitated transmission of water borne diseases like bilharzias (*Schistosomiasis*).
- Flooding gave rise in some places especially in the lower reaches fast flowing water or streams that promoted the breeding of the black flies that transmitted the river blindness (*Onchocerciasis*) disease that cause blindness in those affected.
- Siltation and proliferation of water weeds in the lake reduced navigation and fish harvest. In some lake communities, the prevalence rates of both urinary and intestinal bilharzias rose significantly and ranged between 70% and 75%. And in some cases rates of nearly 100% were recorded among school children (Volta Basin Case Study, (Diaw and Schmid, 1990).

Remediation efforts

The Volta Basin Research Project (VBRP) was set up as a multidisciplinary research organization by the University of Ghana in 1963 to maximize the benefits and minimize the negative impacts on health of the lake communities and on the environment of the Basin catchments area. The implementation process involved various components with entirely different methodologies that reflected the multi-faceted nature of the impacts of the dam on the environment. The methods employed to address the public health problems included the following:

- Chemotherapy (praziquantel)
- Biological methods (e.g. to control the snails which serve as biological host for the *Schistosoma* sp parasite)
- Ecological methods (destruction of habitats)
- Health and agricultural education (e.g. teaching how to avoid contracting water borne diseases and shrimp farming methodologies)
- Income generating projects (e.g. shrimp and fish farming)
- Environmental restoration projects such as re-afforestation, soil erosion control etc

Current challenges

Major challenges currently facing Ghana include, HIV/AIDS, malaria and food security.

HIV/AIDS

According to Boafo (2002), HIV/AIDS in Ghana is not just a health issue. It is also a social, developmental and economical issue (in other words a governance issue). The impact has a huge repercussion for development in the whole of Africa. Boafo reveals that, HIV/AIDS was first identified in Ghana in March 1986; the National rate of infection was 1.5% then. In 2002, the prevalent rate was 3.6%. Since then, more than 52, 961 HIV/AIDS cases have been reported in the health institutions in Ghana. The reported cases, according to Boafo, represent 30% of all cases in the country. He notes that majority of the victims patronize the traditional health care systems, prayer camps and others do not report their illnesses due to the fear of stigma and discrimination. Therefore, non-reported cases of HIV/AIDS are more than the reported ones. This means the prevalent rate of 3.6% in the country is misleading because majority of carriers of HIV infections are not identified. Furthermore, Boafo reveals that about 130 people in Ghana contract AIDS daily and it is estimated that 125 people would die from the dreadful disease daily by the year 2009 if the rate of infection continues at 3.6% (Boafo, 2002).

Malaria

Malaria continues to be a major Challenge for Ghana in her efforts to provide equitable health care for the populations. Like many sub-Saharan African (SSA) countries, Ghana is faced with increasing resistance to the first line anti-malaria drugs and is switching to Artemisinin based combination therapies (Klinkenberg et al, 2005). Malaria used to be predominantly a rural disease; however, in recent time's communities in urban areas especially those near lagoons and urban agricultural sites have experienced increased incidence and prevalence of malaria. In the urban areas, lack of adequate controls and regulation has lead to proliferation of unauthorized building structures in certain locations which have encouraged flooding and formation of ponds in the urban settlements.

Urban agriculture is a recent phenomenon in most cities in Africa. It has developed to address needs associated with urban poverty such as malnutrition and unemployment. Different types of urban agriculture exist: basic backyard farming in or around the house, cultivation of stable crops such as maize on (temporary) fallow land, and cultivation of ornamental plants, mostly along roadsides. An important part of agriculture in the city is commercial cultivation of vegetables, such as lettuce, onion, and cabbage. These crops are irrigated from wells or streams with watering cans, and crops are sometimes cultivated on raised beds with water-filled furrows. Irrigated farming has the greatest potential to create additional breeding sites, and irrigated, open-spaced vegetable farming has been linked to higher anopheline densities in the country's cities of Kumasi and Accra. (Klinkenberg et al, 2005). Klinkenberg et al. put the overall malaria parasite prevalence at 15%. Given that urban population grows about three times the rural population, it is important to address the prevalence of the malaria parasites to avoid a catastrophe in the future.

Agriculture, food security and nutrition

Among the most pressing agriculture related problems facing Ghana are rapid population growth, insufficient food production, deforestation, soil erosion and environmental degradation. Food security has not been attained and malnutrition still abounds among certain groups of

people. Understanding the nature of these problems and how they affect Ghana's productive capability is a major step to enable Ghanaian citizens to help reverse the circumstances and provide good nutrition for future generations.

Adequate food availability at the national, regional and household levels obtained through markets and other channels is the cornerstone of nutritional well-being. At the level of the household, food security implies both physical and economic access of food that are adequate in terms of quantity, nutritional quality, safety and cultural acceptability to meet each individual's need. Household food security would depend on adequate income and assets, including land and other productive resources owned. Food security at the household level is important and may be the major step to translate into good nutritional status if household members have security in nutrition.

To have a nutrition security, there must first be the access to nutritionally adequate and safe food at all times. Then, there must be sufficient knowledge and skills to acquire, prepare and consume a nutritionally adequate diet, including those required to meet the special needs of children. Nutritional well-being would be determined by a number of environmental and related factors besides food and nutrition security. Factors such as health and sanitation, adequate supplies of safe water, parents' education, time to prepare food, and care of vulnerable individuals within the household are also important to help achieve food security. Since household food security is required to achieve good nutritional status, it follows that the lack of household food security across sections of Ghanaian society leaves the nutritional status of such communities or affected individuals in doubt.

Impact of the HIV/AIDS, malnutrition and malaria complex

The impact of HIV/AIDS on food production is not clear, however, the current prevalence, morbidity and mortality rates (Boafo, 2002) show that in Ghana, AIDS is likely to have a significant impact on the ability of people to produce, transport and sell or buy food. The percentage of Ghana's labor force engaged in agriculture and fishing according to the 2000 census is 55%. The rest are in Industry- 18.7%; Sales and Clerical- 15.2%; Services, transportation, and communications- 7.7% Professional 3.7%; 48% of population are of working ; 82% of 15-64 years are in some gainful employment (2000 Census). The fact that AIDS affects people who are in their productive years, the impacts of AIDS on Agriculture and the rest of Ghana's economy could be very serious. Also for those not affected by the disease, their time would be taken from meaningful productive work because they might need to stay home to take care of their loved ones affected by the epidemic. This will escalate the impacts on HIV on agricultural and economic development.

Carbohydrate (energy), protein and nutrient deficiencies mainly afflicts children, however, energy and nutrient deficiencies coupled with infections and parasitic diseases such as malaria affect an increasing number of adults. For example, in a hypothetical rural area where women play active roles in agricultural production, where 25% of women who attend antenatal clinics show positive for HIV, a significant decline in the number of adults in the workforce will be inevitable. In addition to the direct impact on farms, the serious indirect socio-economic consequences include disappearance of traditional family welfare structures and support systems, loss of trained workforce and reduced family income.

As a result of increasing HIV/AIDS morbidity and mortality, the number of orphans is gradually going up with the consequence that, traditional coping strategies where they still exist may soon be overwhelmed. Besides PEM, vitamin A deficiency and anemia caused by iron-

deficiency are the major nutrition problems that occur among preschool children. These deficiencies are caused by diets inadequate in calories and especially limited in their content of foods rich in vitamin A and Iron. According to a study by Klinkenberg et al, (2005), the urban poor in Ghana and elsewhere in Africa are seriously affected by malaria and that irrigated agriculture may increase this risk.

In their study in Accra Ghana, they find that parasitoid children were more likely to be anemic, have a lower socioeconomic status and live in a community close to areas of urban agriculture. Klinkenberg et al, (2005), note that the urban population in Africa grows three times as much as that in rural areas, and may particularly be vulnerable to malaria infection as a result of the lack of immunity to malaria that rural folks naturally build up. This will make the impact of malaria in the urban settlements really gruesome.

Addressing the Challenges

Efforts to address the challenges posed by HIV/AIDS, malnutrition and malaria in Ghana must confront the problems from the problematic linkages among food insecurity, disease, poor sanitation, inadequate education and malnutrition and work through bottom up. A mere singular efforts and progress through specific agricultural or health measures alone will only have a limited national outcome. There is the need to increase the efficiency of the present resource utilization while at the same time conserving and enhancing the resource base and the productive capacity.

Growth in the food and agriculture sector is necessary to end poverty and ensure adequate and sustainable food production for the populations in both rural and urban areas of Ghana. To sustain food production means that the labor force and manpower to drive these productions is stable and sustained through time. It implies that negative effects of HIV/AIDS, malaria and malnutrition must be curbed down. To achieve these, programs in agriculture and health should be complimented by public measures such as income generation and employment creation. Other measures that could help rebuff the challenges posed by HIV/AIDS, malnutrition and malaria include:

- Improving food quality and safety
- Addressing micronutrient deficiencies
- Promoting healthy lifestyles, and behavior trough education
- Integrate nutrition, health and agriculture problems and programming
- Initiate community and civic participation.

Ghana's HIV/AIDS, agriculture, nutrition and health strategy should focus on behavior change among vulnerable groups, youth, faith-based organizations and formal and informal workplace programs. Integration of the activities of municipal and local authorities, agriculturalists, health professionals and communities is essential to reduce the existing impacts of HIV/AIDS, malaria and malnutrition as well as prevent future increases.

Ultimately, applying principles and practices from successful programs to address large health challenges should promote the well being and security of the people and, ultimately, the stability of democratic governance.

Educational importance, implications and application

This paper has shed some light on the links between HIV/AIDS and other endemic diseases affecting farm families and their livelihood systems, agricultural production, natural resource utilization, food and nutrition security and social structures. It will help communicate

these issues through the publication of the material to a wide range of decision makers in Ghana and elsewhere. The paper will also serve as a medium to disseminate policy ideas and strategies aimed at strengthening agricultural based livelihood systems as well as ideas for research and interventions by research and development institutions that face current or future threats of farm related diseases such as HIV/AIDS. The goal is to share ideas and information, to improve capacity building in Extension, and to facilitate disease and hunger response readiness.

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