Public Sector Accounting and Financial Management Systems in the Context of Socioeconomic Development: An Empirical Study of the Volta River Authority in Ghana

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Abstract

The role of accounting in socioeconomic development has been significantly documented in the international accounting literature. However, a majority of these prior studies represent accounting as a technical neutral craft which plays (or can play) an enabling role in national socioeconomic development. This study contends that in some situations conventional accounting with its emphasis on the entity concept can play a constraining role in national socioeconomic development efforts. This is illustrated by an empirical study of the Volta River Authority, a major public sector organisation in Ghana. The paper is informed by the Brundtland Commission's notion of sustainable development.

Introduction

This paper seeks to provide an empirical illustration of how accounting fails to function as a "social and institutional practice" within a third world organisational context (Hopwood and Miller, 1994). The paper shows how accounting is severely limited because of its over-emphasis of the conventional entity concept. By drawing upon the Brundtland Commission's notion of "sustainable development" the paper illustrates how conventional accounting, which has its origins in the advanced Western capitalist countries, is unable to deal with social and environmental aspects of socioeconomic development in a third world country, Ghana. While this limitation of conventional accounting might be perceived as universal, the paper argues that it is more critical in the case of today's developing countries where tensions between the entity concept and social and environmental considerations in the drive for national development are much greater. The objectives of the paper are achieved through a case study of the accounting and financial management systems of Volta River Authority (VRA[1]), a major power corporation which supplies electricity to Ghana and neighbouring countries, from the largest human-made lake in the world.

[1] Also referred to in the paper as "the Authority"

The rest of the paper is organised as follows: To provide a setting for the 'critical/interpretive' analysis in this paper, the first part profiles the Volta River Authority highlighting its historical background and the institutional framework within which it functions. It also reviews the divergent postwar conceptualisations of socioeconomic development emphasizing the limitations of the dominant economistic view (of development) which currently underscores conventional accounting. The Brundtland Commission's notion of sustainable development is also explicated as an alternative conceptualisation of development drawn upon in this exposition. The second part of the paper then discusses how VRA's accounting and financial management systems are unable to reflect the people-centred dimension of sustainable development through an illustration of the rural/national electrification programme currently pursued by the Ghana Government. Further evidence of how VRA is unable to integrate the environmental dimension of sustainable development into the routine decision making mechanism is also provided. This is followed by a summary and conclusions of the paper.

PART ONE

Background of the Volta River Authority

Volta River Authority is a public corporation established by the Ghana Government in 1961 to generate electricity from the largest human-made lake in the world. Under the Volta River Development Act, the establishing document for the VRA, the organisation is required to supply electricity in bulk to other Ghanaian corporations (including the Electricity Corporation of Ghana, ECG, which until recently was solely responsible for power distribution in Ghana) and power utilities in neighbouring countries. In recent times however, the Authority has also been charged with the responsibility of distributing electricity in the northern half of the country[2].

While the establishing document of the VRA requires it to run its "operations on sound commercial lines", historical circumstances of the organisation have made this objective difficult to achieve and have caused significant problems. Most important in the history of the VRA is the 1962 agreements with the World Bank and Valco[3] which requires the Authority to supply guaranteed amount of power to Valco at a rate that has been a major source of contention since the mid 1970s. Such an agreement was necessary from the perspective of the Ghana Government because, to

[2] Such a role is required because of the current Government's policy which seeks to promote rural/national electrification.

[3] An aluminium smelter which was established as a major consumer of the electricity to be generated from the Volta Project. This is further discussed shortly.

secure financial assistance (in the form of concessionary loans) from the World Bank for the Volta River Project[4], the Ghana Government was required to assure the Bank that not only would there be sufficient demand for power generated from the project but also enough revenue for debt servicing. Since the Ghana Government saw the availability of cheap electricity supply as an important ingredient in the country's desire for rapid industrialisation, it commissioned experts to advise on the possibility of establishing an aluminium smelter as the major consumer of electricity generated from the Volta Project especially during the early years after the completion of the project. Following the recommendation of the experts, the Ghana Government signed a contract with Kaiser Aluminium and Chemicals Corporation and Reynolds Metal Company (two giants American companies in the aluminum industry) to establish a smelter (Valco) with various concessions[5] granted by the Ghana Government. In addition, the VRA has relied on the World Bank Group and other international financial institutions for funding of various projects. Each of these financial institutions has certain requirements in terms of what it perceives as strong accounting and financial management procedures necessary to justify loans to the Authority (see Toye, 1991).

These agreements which preceded the establishment of the VRA and subsequent contracts have been major sources of contention in VRA's operations over the years. An important issue which has not only remained puzzling but unexplored is how the Authority's accounting and financial management systems have been able to satisfy these diverse constituencies or interest groups. How is the Authority able to pursue the objective of promoting socioeconomic development in Ghana and also satisfy the needs of these international financial institutions, through the design of accounting and financial management systems? This paper demonstrates that in its efforts to legitimise its operations to external constituencies and gain their support, VRA has until fairly recently not seriously reflected the social and environmental aspects of socioeconomic development in its financial management systems and practices. Such has been the case partly because of the institutional setting within which the Authority operates and the overwhelming influence of the entity concept of conventional accounting. Before delving into greater detail, the next section provides a synopsis of the methods employed to collect empirical evidence for the paper.

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[4] The initial project for the construction of the Lake was known as the Volta River Project and VRA evolved from this.

[5] The concessions included a power rate of 2.625/kwh charged to the smelter with no provision for escalation. This rate was later perceived as one of the lowest power cost to a smelter in the non-communist bloc (see Graham, 1982).

Data Collection Procedures

Multiple methods of data collection were employed to gather the necessary evidence for this paper. Like most case studies, the most important issue in data collection was gaining access to the organisation (see Lawrence, 1990; Yin, 1989). We had to employ a strategy which involved influential members of the Ghanaian public and overseas academics to "open the gates" of the VRA for this study. Once access was gained, organisational members were sufficiently open in their approach to the study. Three important methods including interviews, document analysis, and non-participant observation were used to gather empirical evidence. The interviews involved what has been described by Kvale (1983) as "qualitative research interview". Qualitative research interviews, according to Kvale, are those interviews which seek to "gather descriptions of the lifeworld of the interviewee with respect to the interpretation of the meaning of the described phenomenon" (p. 174). Such interviews do not seek to obtain quantifiable evidence but rather to gain an understanding of the research topic from the perspective of the interviewee. One of the researchers also stayed at the VRA for two and a half months as a non-participant observer. The experience in this role further enriched much of the evidence collected since questions were often asked for clarifications during this period. Occasionally, organisational participants substantiated their perspectives with evidence from documents including memoranda, reports and letters. All these form the basis of the 'critical/ interpretive' analysis in this paper.

The Concept of Development: Beyond Economic Reductionism

This section provides a framework for the analysis of the empirical evidence. It reviews the various conceptualisations of development and explicates the concept of sustainable development which guides the discussions in the paper. Such a clarifying section is necessary because 'development' is an umbrella concept whose meaning, scope and understanding depend to a very large extent on the lens through which it is viewed. With the proliferation of postwar theoretical 'paradigms' in development studies, diverging interpretations and conceptualisations of development currently exist in the literature (see Auty, 1995; Hettne, 1990; Kay, 1989; Larrain, 1989). Auty (1995, p. 3) observes that a broad distinction can be made between orthodox and structuralist perspectives of development. An important commonality between both perspectives, Auty argues, is their emphasis (or reliance) on economic and quantifiable indicators such as Gross Domestic Product, real per capita income, etc. as standards for measuring development (Auty, 1995, p. 3; see also Rostow, 1990). These conceptualisations (i.e. structuralist and orthodox perspectives) of development which became widespread in the early postwar period, project development as "a rapid and sustained rise in real output per head and attendant shift in the technological,

economic, and demographic characteristics of society" (Mabogunje, 1980, p. 36)[6]. While such a view has remained the dominant postwar perspective of development (see Mabogunje, 1980; Munasinghe, 1993), recent writings indicate that it is also possible to understand development from "sociological" (see Cernea, 1993) and "ecological" (see Rees, 1993) perspectives. This view is captured by Brandt (1980, p. 48) when he observes that:

> development never will be and can never be defined to universal satisfaction. It refers to broadly speaking, social and economic progress, and people will always have different views about what is desirable. Certainly development must mean improvement in living conditions, for which economic growth and industrialisation are essential. But if there is no attention to the quality of growth and to social change one cannot speak of development.

Brandt (1980) not only goes on to argue that development is a socially constructed phenomenon but also suggests that historical factors in the immediate postwar years have tended to grossly favour the economistic view (see also Cernea, 1993; Rees, 1993). However, in the last quarter of this century, the dominant economistic view has come under serious attack from the Marxist, Neo-Marxist, poststructuralist and post-modernist (i.e. radical) theorisations of development (see Booth, 1985; Cernea, 1993; Corbridge, 1990; Hettne, 1990; Munasinghe, 1993; Rees, 1993; Serageldin, 1993). For instance, arguing from an ecological standpoint, Rees (1993) suggests that the once-held economic view of natural resources as free goods is partially responsible for such ecological problems as the depletion of the ozone layer and the "green house effect". In a similar fashion, Cernea (1993) contends that, as a socially constructed phenomenon, development should be "people-centred" by reflecting on the way people conduct their lives (e.g. "enrichment" of their culture) and concludes that the dominant economistic perspective is inadequate in that regard.

With the proliferation of diverse conceptualisations of development, Landell-Mills (1993) argues that one of the most important problems facing contemporary third

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[6] Steer and Lutz (1993, p. 21) argue that an important reason for "an excessive focus on the economic aspects of development is because it is easier to measure what is transacted in the market place than what is not ... What to measure and where to measure it is intuitive, and the numeraire (the common unit of account) enabling such aggregation is straightforward - money". Steer and Lutz concluded that such "easy calculations are not available for many other aspects of development, especially social and environmental issues".

world leaders is the choice of 'appropriate' development perspectives[7]. As though responding to Landell-Mills (1993) in his review of the major issues constraining socioeconomic development efforts in the third world, Serageldin (1993) proposes that for contemporary developing countries to break the trap of underdevelopment, they would need to understand the concept in terms of "sustainable development", a conceptualisation introduced by the Brundtland Commission in 1987. The Commission defined "sustainable development" as 'change' in socioeconomic living conditions which "meets the need of the present generation without compromising the needs of future generations" (Serageldin, 1993, p. 7). Various interpretations of the Commission's definition have given rise to different dimensions of the concept of "sustainable development" (see World Resources, 1992-93, p. 1-15). For instance, in his presentation at the Fourth Pacific Islands Conference of Leaders, Halapua (1993, p. 60) observed that "sustainable development":

> is used with a range of interpretations by policy makers, planners, and opinion makers. But there appear to be two common interpretations of the concept. The first one is a concernwith environmentally responsible development, especially with the management of the environmental resources and their interactions with population and economic activity in any given time. The other major interpretation is a concern with economic growth that can be sustained over time at a given level of population and environmental quality.

It could be argued that the Commission's conceptualisation is predicated on the notion that decisions regarding welfare maximisation of the present generation must not constrain the prospects for maintaining or improving the living standards of future generations. This further "implies that our economic systems should be managed so that we live off the dividends of our resources, while maintaining and improving the asset base" (Repetto, 1986, p. 15-16). To ensure this, organisational and national decision making mechanisms such as accounting must play a leading role. It is for this reason that in seeking to gain an appreciation of VRA's accounting and financial management systems in this paper, a conceptual understanding of development consistent with the Brundtland Commission's notion of "sustainable development" is drawn upon. Such a framework provides an unchartered terrain for investigating the extent to which the Authority's social and environmental obligations are dis/served by the existing accounting and financial management systems. The choice of "sustainable development" as the conceptual base for the investigation in this paper is also partly informed by Kennedy (1968, in Steer and Lutz, 1993, p. 20) when he points out the

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[7] See Killick (1978) for a detailed discussion of the divergent economic policies (and notions of development) which Ghana attempted to pursue during the immediate post-colonial years.

major criticism of the dominant economistic view in the following illuminating passage:

> The gross domestic national product does not allow for the health of our children, the quality of their eduction, or the joy of their play. It does not include the beauty of our poetry or the strength of our marriages; the intelligence of our public debate or the integrity of our public officials. It measures neither our wit nor our courage; neither our wisdom nor our learning; neither our compassion nor our devotion to our country; *it measures everything, in short, except that which makes life worthwhile* (emphasis added).

Kennedy is arguing, in the above quote, that life is too complex an entity to be understood solely in terms of economic measurements or numbers[8]. Vital issues concerning political, spiritual, and social aspects of humanity are not captured by the dominant economistic perspective simply because they are apparently not quantifiable (see Waring, 1989; 1995). However, there is evidence in the literature that contemporary developing countries cannot get over the "harsh" conditions of (socioeconomic) underdevelopment without strong politico-sociocultural advancement (see Halapua, 1992; Leftwich, 1994; Serageldin, 1993). For instance, "Agenda 21", the "major policy document of the June 1992 Rio Earth Summit called for expansion of existing systems of national accounts in order to integrate environmental and social dimensions in the accounting framework..." (Steer and Lutz, 1993, p. 22). The Rio Earth Summit was promoting the concept of "sustainable development" on grounds that it has a promising potential of integrating the social and environmental aspects of development into the existing systems of organisational and national accounting. Thus by drawing upon the notion of "sustainable development" as a framework for the critical/interpretive analysis of the Authority's accounting and financial management systems, this paper provides a 'broader' understanding of the effectiveness of these systems. By so doing, the paper avoids the danger of naïvely drawing 'firm' conclusions based solely on the simplistic technical procedures and descriptions as obtains in the extant literature (see Lowe, Puxty, and Laughlin, 1983).

Taking the above discussion as the platform, the next section examines the Authority's accounting and financial management systems in the context of the rural and national electrification programmes which are currently major priorities of the Ghana Government delegated to the VRA and ECG. The section provides a discussion

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[8] While this paper agrees with Kennedy's argument, it nonetheless maintains that the mechanisms which are responsible for producing the "numbers" (including accounting systems) are human artifacts and can therefore be (re)designed to reflect these important issues about humanity, albeit in an inexhaustive sense.

of the justifications (i.e. social and economic) for rural electrification in Ghana and attempts to find the extent to which the Authority's current accounting and financial management systems have changed to accommodate these new developments in its operations.

PART TWO

Rural/National Electrification and Socioeconomic Development

Rural electrification is a major issue which most countries have faced (and others are still facing[9]) at some stage in their drive for advancement in socioeconomic development. In the United States for example, although the quest for electrification in rural America began at the turn of the century, it was not until the creation of the Rural Electrification Administration (REA) in 1935 that rural electrification was accepted as a public responsibility (Brown, 1980, p. ix). But the establishment of the REA did not immediately lead to electrification for the rural folk in America until after the second world war. In most developing countries, rural electrification became a matter of public concern in the early 1970's. In fact the World Bank estimated that by 1971, the cumulative investment in rural electrification by developing countries in the Bank's operations area amounted to US$ 10,000 million (World Bank, 1975, p. 5)[10]. The Bank further projected that over the next ten years (i.e. from 1975 through to 1985), US$ 10,000 million to US$ 15,000 million was to be invested in rural electrification and this would be sufficient to provide up to a total of 300 million rural folks in third world countries with electricity.

Various national governments have different reasons for embarking on rural electrification programmes. Notwithstanding the diversity of objectives, Saunders, Davis, Moses and Ross (1978, p. 3-4) make an attempt to summarise the major expectations of national governments for promoting rural electrification in the following passage:

1. Increasing agricultural productivity resulting from the use of labor-saving electrical equipment

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[9] Indeed, a majority of those countries which are still facing the quest for rural electrification are the so-called developing countries (see World Bank, 1975).

[10] The World Bank also estimated that this investment provided 23% of the village-rural population in Latin America, 15% in Asia, and 4% in Africa south of the Sahara or about 23% of the total rural population in poor countries with electricity by the early 1970s (see Cecelski, et al. 1979, p. 73).

2. Changing crop patterns resulting from the use of seasonal labor-saving equipment and/or the use of electric pumps to provide irrigation water.
3. Development of rural industries; especially those related to the processing of agricultural commodities in rural areas.
4. Increasing per capita income resulting from increased agricultural productivity and the development of industrial opportunities.
5. Reduction in household labor through the use of electrical appliances.
6. Reduction in rural-urban migration of families and young people as rural living conditions improve and employment opportunities are created through industrial development and expansion.
7. Improvement in the household sanitary conditions and family health resulting from the use of electricity for water systems, refrigeration, ventilation and lighting
8. Relating to rural electric cooperatives; improved sense of community participation and involvement resulting from work on self-help project; development of community leadership training.
9. Reduction in household energy expenditures with the substitution of electricity for candles, kerosene, gas and wood.
10. Increased satisfaction with life resulting from amenities available following electrification.

In Ghana, various Governments have, over the years, shown significant concern about the need for electrification of the entire country by the year 2020. Indeed, national/rural electrification was one of the major issues on the current Government's campaign trail during the 1992 and 1996 presidential and parliamentary elections (see Public Agenda, March 3-9, 1997). The importance of national/rural electrification to the people of Ghana is evidenced by the following quote from a report issued by the Ministry of Fuel and Power in September 1988:

> current estimates suggest that only about 15% of the country's population, largely concentrated in the southern urban centres of the country, is provided with electricity. Even this relatively fortunate few have not been able to rely on reliable and "clean" supply of this vital energy resource because of frequent disruptions of power outages and fluctuating voltages; attributable mainly to the neglect and sub-standard maintenance of existing generation and distribution equipment.

The above quote illustrates the importance of electrification in any part of the country not only the so-called rural areas. Indeed, it could be argued that electrification of any part of the country except for the few urban areas in southern Ghana could be termed rural electrification. Notwithstanding the 'convincing' nature of such an argument, in Ghana, a distinction is often made between *National Electrification*

Project (NEP) and *Rural, Lower Volta and the Self-Help Electrification Projects*. The former specifically relates to the electrification of District capitals in the North including Brong Ahafo, Northern, Upper Eastern, and Upper Western regions. This was first initiated in 1994 "under which electricity was to be extended to 3654 localities nation-wide by [the year] 2020" (Voltascope, Jan.-Feb. 1996, p. 4). Under the Rural, Self-Help Project, communities within a distance of 20 km from the grid could be connected by the year 2020. Whilst the VRA has the responsibility for electrifying the Northern sector (i.e. the four regions indicated above), ECG is charged with a similar responsibility for the southern sector (i.e. the remaining six regions). Funding for the Authority's component of the National Electrification Project is provided by a consortium of international and local bodies including, International Development Agency, DANIDA, Ministry of Mines and Energy, and VRA itself. Since the Government has consistently provided the same justifications for rural and national electrification (see the next sub-section), the interpretive construction of the accounting systems against the backdrop of these projects does not find the distinction important, especially in the North where there is hardly any difference in socioeconomic living conditions between the District capitals and other remote villages.

Justification for National/Rural Electrification and VRA's Accounting and Financial Management Systems

In its September 1988 report on the energy sector, the Ministry of Fuel and Power stated that the principal rationale for the national/rural electrification project in Ghana was "to accelerate the pace of industrial and economic development of the targeted areas". From such a 'broad' rationale, the investment in national/rural electrification can be justified on two main grounds: viz socio-political and economic. While some commentators (e.g. Saunders et al., 1978) imply that these grounds for justifying rural electricity can only be mutually exclusive, we take a view that there is the possibility for a "middle-range" justification[11]. For instance, the Government might justify the large investments in rural electrification by perceiving it as a social good or service which rural people are entitled to, along with education and health services (see Saunders et al., 1978, p. 170). However, as in the case of education and health (especially with the global restructuring of the traditional public sector), the Government might design a system (of accounting and finance) which aims at recouping either part or the whole of the investment in the project over a long period of time[12].

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[11] A justification that incorporates both the socio-political and economic aspects.

[12] Perhaps, a period which might not be economically acceptable to the private profit-driven entrepreneur.

Following the contention in interpretive accounting research that accounting is not a neutral craft because of its ability to render particular patterns more visible than others (see Burchell, et. al., 1980), it could be argued that the organisation which is delegated the responsibility for executing the rural/national electrification project will have to (re)design its accounting systems to conform with (or meet) the (new) requirements emanating from the justifying rationales of the project(s).

Social Versus Economic Justifications and Accounting Systems.

Under the social benefits approach for justifying rural electrification, the project is considered to be entirely in the social realm (see Saunders et al., 1978). From such a perspective, rural electrification could be likened to other traditional social services such as education, health, adequate pure water, roads and communication facilities, and waste disposal projects. Since the Ghana Government holds itself out as not seeking any economic gains from the national/rural electrification project, there will be no need for computing rates of returns and other accounting/economic ratios to justify the need for the project. The posture adopted by the Ghana Government is evidenced by the following quote:

> The national electrification project is regarded as a priority to provide cheap and reliable electricity by extending the national grid to the northern half of the country (Ministry of Fuel and Power, 1988).

The above quote further buttresses the contention that economic justification for the rural/national electrification project is unnecessary from the perspective of the Ghana Government. However, since the project is not wholly funded by the Government, other financiers of the project might seek some form of economic justifications, at least, assurance of future cash flows which will be sufficient for debt servicing. This is evidenced by the IDA's (the major lender for the national/rural electrification programme) conditionality that for the Ghana Government to justify its national/rural electrification programme, an 'investment' plan should be drawn and clearly establish:

> uniform standards, identify priority programs for the extension of the grid to unelectrified areas of Ghana in accordance with satisfactory economic/financial criteria (World Bank Report, No. 8207, 1990, p.7).

Certainly, private investors will not be attracted by such an economically marginal project[13] and therefore the most suitable accounting method in such a scenario

[13] The project would be perceived as economically marginal largely because of its social dimension. Consistent with the Government's stance and the absence of private

might be a combination of "social accounting" in its narrow sense (see Agyei, 1977; Enthoven, 1979; Mobley, 1970; Sarpong, and Gray, 1989) with aspects of "private enterprise accounting" (see Enthoven, 1979). Since the VRA is an organisation which is expected to conduct its "operations on sound commercial lines", by delegating the responsibility of national/rural electrification in the North to the VRA, the Government has left the Authority in a situation where its operational objectives are increasingly becoming blurred (i.e. whether economic or social pursuits should be emphasized). Indeed, the situation which the Authority is currently faced with could be likened to what Bromilley and Euske (1986, p. 311) described in the managerial accounting literature as the "use of rational systems in a bounded rationality organisation". This argument derives from the contention in scores of studies that, as a human artefact[14], when society's demand changes, accounting systems must also change if they are to continue to be in the (dis)service of society (see Briston, 1978; Littleton, 1968; Perera, 1989). By adding the responsibility of national/rural electrification (which is perceived as a social service by the people of Ghana[15]) to its objectives, it could be argued that the VRA is currently experiencing significant changes in demand from society. As a consequence, the Authority's accounting and financial management systems would also be expected to change to continue in the (dis)service of society.

While a wide array of possibilities of change(s) in accounting systems is available to the Authority, two main modes of change are suggested in this paper and were discussed with organisational actors. First, the Authority might decide to maintain its existing accounting systems intact on the grounds that they accord with "operations on sound commercial lines". But in addition, it will design another set of accounting systems which incorporates both the social desirability and economic requirements of rural/national electrification, to juxtapose the existing accounting and financial management systems. In this case, the accounting systems for the rural/national electrification are designed as though they were for a separate entity (see Dean, 1989, for project accounting procedures). Such an option might however, involve a drain on organisational scarce resources, especially in third world countries where the expected contributions of human and financial resources are much higher than in their advanced Western counterparts[16] (see Craner and Jones, 1990). The second possibility will involve an attempt to incorporate or integrate the requirements

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capitalist investors in such a project, therefore, one would not expect profit maximisation to dominate the accounting practices of an organisation charged with executing such a project.

[14] And indeed, a servant of society (see Littleton, 1968).

[15] Partly because of the Government's promises in political fora.

[16] Because of relative scarcities.

of the socially desirable rural/national electrification projects into the existing accounting and financial management systems. Although such an alternative might have the advantage of not over-stretching organisational scarce resources, it nevertheless, will involve a complete overhaul of the existing accounting systems.

While the changes in society's demands of VRA might have implications for a wide range of accounting and financial management issues such as planning, budgeting and control, and financial reporting, for illustrative purposes, the paper identified the power rate structure as the most important and visible[17] element of the existing accounting and financial management systems which would be significantly affected by the rural/national electrification project. This was therefore discussed with organisational members. We initiated the discussion with an argument that if the rural/national electrification project could be viewed in the same perspective as health, educational services, and roads and communications (see Saunders et al., 1978, p. 171), then 'full' cost recovering should not become a central consideration in the project and for that matter should not be reflected in the Authority's accounting system. For such a project to be beneficial to a majority of rural Ghanaians[18], two options regarding the pricing structure were raised by the researcher. As a first option, it was argued that the most obvious and perhaps common mode of promoting rural/national electrification would be through Government subsidy of rural electrification. Indeed, this strategy has historically proved effective in most of today's advanced countries including the United States, United Kingdom, and Australia[19]. The second option involves designing the rate structure in such a way that urban electricity consumers cross subsidise electricity in rural areas. The motive for such cross-subsidisation is equity. As Reed (1996) observes:

> Equity is the fundamental concern of sustainability's social dimension. The Standard used in assessing social sustainability is whether society is providing all citizens the opportunity to have access to minimum

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[17] Most important and visible to all parties concerned including; the Ghana Government and VRA management, other financiers, and the rural (potential) electricity consumer, because of its direct impact on revenues, returns on investments, and net personal incomes respectively.

[18] Who are also relatively low income earners compared to their urban counterparts.

[19] It should be noted, however, that the successful implementation of this strategy in the advanced Western countries is no guarantee that this would work equally for today's developing countries. This is the basis of cultural imperialism (or ethnocentricism) which has been significantly criticised in the literature (see Said, 1993; Perera, 1989).

> standards of security, human rights, and social benefits, including food, health, and education... (p. 434).

In the case of the Authority, the power rate charged to both the rural and urban dwellers is the same[20] (i.e. uniform non-subsidised power rates), and does leave a greater number of rural Ghanaians who have already connected electricity under the national/rural electrification project with huge unpaid bills, especially in the N.E.D[21] operating area. In an interview with staff members at N.E.D it was echoed that the Authority had little influence in designing its pricing structure. This is evidenced by the following quote:

> ...I agree with you that the accounting procedures should change to reflect these Government policies, especially the rate structure, but the fact is, whatever we propose to charge to the ordinary consumer of electricity must be determined together with ECG which is responsible for power distribution in the south...This in turn is subject to approval by parliament...Yes, currently our rate structure is such that there is cross subsidisation between residential, non-residential and industrial consumers... On the average, a household in Tamale incurs a power bill of C5,000 - C10,000 per month. But residential consumers still think the power cost is high ... To show its commitments to the national electrification project, I agree with you that the Government should have subsidised rural electricity.
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> In that case how our pricing system is designed wouldn't have been a problem as you and I can see. Unfortunately this is not so.

Thus, the Government's rural/national electrification project becomes a matter of concern because with the current pricing structure, most rural folks are not going to be able to connect to the national grid despite the fact that transmission lines might run

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[20] As at first January 1995 the Authority charged N.E.D and ECG a wholesale rate of C23 per kwh. Organisational actors were, however unwilling to discuss the actual rate charged to the individual households per unit of electricity since this was perceived as very confidential proposals made to the government and strongly guarded at the time of empirical evidence collection. Some organisational actors speculated that an ostensible reason for the Government's silence on the rates proposed was the impending political elections. There might be some substance in such speculations because barely three months after the Government was ushered in (i.e. re-elected), an announcement of a proposed 300% increase in domestic power rates was made.

[21] N.E.D. is a branch of VRA responsible for electricity distribution in the North.

directly above the roofs of their homes[22]. If such becomes the case, then the purpose of the rural/national electrification would have been defeated. There are scores of empirical studies on rural electrification projects whose purpose(s) have been defeated because they were perceived as not economically accessible to the poor majority[23] (see Cecelski, Dunkerley, and Ramsay, 1979). For instance, there is evidence that, a 1978 survey in Comilla, Bangladesh, where rural electrification began in 1963, showed that even 15 years after the introduction of electricity, less than 5% of the rural population used electricity because of high power rates vis a vis rural income levels.

Thus as far as the Authority's accounting systems are concerned, there have not been any changes to reflect the social desirability of national/rural electrification. Indeed, the Authority is currently experiencing a situation where the government on its political platforms assures the people of "cheap power for all by the year 2020" but the systems of pricing electricity do not only contradict such promises but are also closely monitored and controlled by the government. For instance, the proposed 300% increase in power rates charged to the Ghanaian electricity consumer is perceived by the Government as part of a strategy which seeks to move the Authority towards "commercial competitiveness"[24]. Such a strategy, however, is quite inconsistent with the social desirability of "electricity for all by the year 2020" which is emphasized in the Government's political fora (indeed, a replica of the situation reported by Bromilley and Euske, 1986). With such inconsistent demands from the Government, the management of the Authority does not have any motivation to reflect "social considerations" in its existing accounting and financial management systems[25], especially the rate structure.

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[22] This view was also shared by organisational actors. They maintained that the large number of customers whose accounts are due for disconnection under the Authority's policies (i.e. for long overdue bills) supports this view.

[23] The emphasis in this argument is on 'poverty' in relative terms since there is a tendency to overlook income disparities in third world countries especially by ethnocentric researchers as evidenced in Rostow's (1960) stages model.

[24] It should be noted that there is currently a lack of consensus among organisational actors on what constitutes "commercial competitiveness". On its part, the Government's interpretation is centred on the need to earn "reasonable" returns on its investment. An interpretation which is very much in conflict with its social desirability justification of rural/national electrification.

[25] We found this defence which was put up by the Authority's management convincing and indeed, it supported the substantial institutional theorisations of accounting systems design and change process in the extant managerial accounting literature (see, Alam

By insisting that the Authority should maintain the existing pricing structure (i.e. a system which does not provide subsidies for rural electricity consumers), the Ghana Government is failing to recognise that maximum utilisation and therefore maximum benefits of the rural/national electrification will only be realised if actual electricity use equals potential use (see Saunders et al., 1978). To reach such a goal, the government will have to institute policies which will seek to operationalise the social desirability of the rural/national electrification programme. Consistent with such a change will be the need for the Authority's accounting systems, with particular reference to the pricing structure, to incorporate these social justifications of rural/national electrification projects. Until then, the Authority's accounting and financial management systems will continue not to reflect the "people-centred" dimension of sustainable development.

Accounting Systems and Environmental Obligations of the VRA

One of the most pervasive and topical issues in academic and professional research is consideration of integrating the environment into 'traditional' research agendas. The overwhelming concern for environmental awareness is evidenced by the emergence of such sub-disciplines as environmental accounting (see Gray, 1992; Gray, Kouly, and Lavers, 1995) and environmental or ecological economics (see Mikesell, 1992) among others. As indicated earlier, environmental issues are also an important dimension of the notion of "sustainable development". In this section we seek to examine the extent to which the environmental obligations of the VRA have been integrated into its accounting and financial management systems over the years. The discussion in this section is based principally on the interviews with various staff members of the Authority.

Like most electric supply utilities, the VRA has its environmental obligations which management has always sought to carry out (Senior officer, Real Estate and Environment Department). One of the major environmental concerns of VRA is the resettlement of the people who were displaced for the construction of the Akosombo and Akuse dams[26]. Although the responsibility for the maintenance of the resettlement townships built for persons displaced by the formation of the Volta Lake has been, at the request of the Government, transferred to appropriate departments and agencies of Government since 1971, residual problems affecting the settlers are still referred to the

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and Lawrence, 1994; Ansari and Euske, 1987; Hoque and Hopper, 1994; Scapens; 1994; Covaleski, et al, 1996).

[26] Those communities which were displaced as a result of the construction of the two dams include Torgome, Natriku, West Kpong, South Senchi, Fadzoku, and Old Akrade.

Authority for advice and necessary action (VRA Annual Report, 1991, p. 5). While the Authority has made this one of its major priorities since its establishment, there is ample evidence that it still continues to dominate the Authority's environmental concerns (Senior officer, Real Estate and Environment Department).

Despite the fact that VRA has over the last thirty years "taken measures to control the environmental problems arising from the construction of the Akosombo and Akuse dams and has tried to help develop communities along the lake area", recent trends show that, the Authority's operations have come under serious scrutiny for environmental friendliness (Vittor-Quao, 1996, p. 8). Such pressures are partly induced by international trends, health related problems (particularly Bilharzia) resulting from the construction of the dam, and other environmental problems caused by the people resettled along the lake area. For instance, extensive 'crude' fishing and farming are undertaken by the lake side settlers who also depend on fuel wood for domestic and commercial purposes. Such 'unfriendly' and uncontrolled activities along the lake side not only mar the natural beauty of the valley but also threaten the life span of the Volta Lake, the main source of electrical power generation for Ghana (Vittor-Quao, 1996).

In response to these recent pressures, the Authority, in 1994, redesignated its Real Estate Department as Real Estate and Environment Department charged with the responsibility of effectively tackling and resolving the environmental issues arising out of the Authority's operations (VRA Annual Report, 1994, p. 10)[27]. The new role of the department also includes focusing on developing and implementing measures to mitigate effects of the Authority's operations on the environment. The Authority's commitment to these policies are demonstrated by the creation of a Trust Fund of US$ 500,000 (or approximately C525.5 million) a year to assist settlements affected by its activities. In 1994, the Authority also started:

> measures to check the adverse effects of land degradation along the Volta Lake by reafforesting about 430 hectares of degraded areas on the slopes of the Adjena Gorge.. We plan to extend this programme to similar areas along the lake in the coming years.... we are [also] educating and involving the people living in the towns and villages along the shores of the Lake in the fight against environmental degradation (VRA Annual Report, 1994, p. 10).

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[27] The Authority also runs a well equipped Hospital which provides proximity and excellent services for staff members and the people living in these areas. The general attitude of the Authority towards this Hospital is summarised in the words of the Surgical Specialists and Superintendent of the Akosombo Hospital in the following words: "There is no limit on medical expenditure [for employees].... No matter how much it costs we'll always ensure that our patients are given the best treatment" (cf. Owu, 1996, p. 5).

Vittor-Quao (1996, p. 17) observes that every Ghanaian has a duty to protect the life span of the two dams as evidenced by the following quote:

> it is imperative that as the Authority in fairness reconsiders the responsibility to bear the costs of those problems associated with the construction of the two dams, we all join hands to help appreciate and contribute to save and prolong the life span of the lake.

While the Authority has demonstrated significant commitments to alleviating the environmental effects of its operations, the activities of the relatively new Department of Real Estate and Environment have not yet been integrated into other Departments of the Authority. For instance, there is ample evidence that traditional accounting methods do not often provide adequate information on environmental costs, and thus result in ill-informed and costly management decisions (see Quellette, 1996). Recent research also shows that there are signs that "management control systems" can provide a framework for an integrated environmentally friendly organisation, especially in the hydroelectric industry (see Evans, 1996; Cavanaugh, 1996). At the VRA not only are environmental issues unintegrated into mainstream cost determination, but organisational participants do not envisage this as happening in the next few years.

Although recent events show that VRA is significantly committed to environmental friendliness, the organisation is currently faced with a shortage of technical expertise in the areas of assessment, recognition, and costing of environmental impacts of its operations. These difficulties are not peculiar to the Authority as evidenced by the situations in the United States (see Ali, 1994; Carson, 1994; Quellette, 1996; Williams and Phillips, 1996), New Zealand (Hooks, 1996; Orr, 1994), United Kingdom (Baker, 1996; Evans, 1996), Canada (Glenn, 1995; Plackett, 1995; Selg, 1994), Australia (Frost and Wilmshurst, 1996; Keys, 1995) and Asia (Jarret, 1996). For instance, it was found that organisational participants did not have knowledge of such relatively new environmental costing techniques as "Life Cycle Costing" (see Epstein, 1996) and "environmental management accounting" (see Baker, 1996) which is currently experimented in some Western nations, notably Canada which is perceived as being at the leading edge in environmental accounting (see Anonymous, 1994)[28]. Perhaps the lack of technical expertise is resulting from the fact that

[28] It is important to mention, though, that the technique of "full costing" might not be known to most organisations in the so-called advanced countries. Therefore, the lack of knowledge of this technique should not significantly influence judgements of the competence of the Authority's accounting staff. By mentioning "full costing" to organisational participants, the researcher's secondary objective was to bring this to their notice as a contribution towards the efforts to design costing procedures for environmental impacts of the Authority's operations.

assessments, recognition and costing of environmental impact requires a combination of highly skilled engineers, legal and accounting personnel. This lack of technical expertise in quantifying the Authority's environmental issues is noted by Vittor-Quao (1996, p. 8) as follows;

> to enable the section [Real Estate and Environment Department] to fulfill its responsibility effectively, management is still considering proposals presented on the effective manpower and equipment needs of the section.... It is very important that such a section has some minimal number of experts to look at specific areas especially supervision and assessment of strategies being initiated...

Although the Authority consistently maintains that it prides it self with the competent army of staff, senior management pointed out that the requirements of environmental accounting call for further training of existing staff or recruitment of "new" staff with expertise in this area[29]. Management saw this as an urgent requirement if the "new" department is to thrive and get integrated with other departments particularly Costing and Management Accounting Division and the Finance Department as a whole. At the time of empirical evidence collection, there was an impending seminar under the theme *The Present Environmental Thinking and its Effect on VRA*, to be organised for certain categories of VRA staff. The main objective of this seminar was to encourage staff members of other departments (particularly accounting and finance[30]) to understand the integrative role of the new Real Estate and Environment Department within the broader organisational spectrum. It was the expectation of management that with a clear understanding of how their roles interact with the functions of the "new" Department, organisational actors will be able to work together towards overcoming its initial difficulties, including devising techniques for quantifying, costing, and evaluating the impact of the Authority's operations on the environment. The Director of Real Estate and Environment was quite optimistic that if organisational members worked together, solutions for the VRA's environmental problems will not be hard to find. As the Director noted in an interview with Vittor-Quao (1996, p. 17), "the environmental problems do not demand [only] new solutions but rather very tactical approach to promote human health and economic benefits to all parties involved".

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[29] The Authority intends to pursue both options because of the paucity of Ghanaians who can effectively design, implement, and monitor environmental costing systems to a considerable standard.

[30] Because of the urgent need to design techniques or procedures for costing environmental impacts of the Authority's operations.

In discussing the problems of the new Real Estate and Environment Department, a senior officer indicated that one of the major problems it has with the Finance Department is the strict budgetary control procedures. He observed that:

> anything that is not provided for in the annual budget requires special approval from the Director of Finance and appropriate Deputy Chief Executive. But this process is so rigid. Sometimes, the Finance Department does not have a good knowledge of what is requested and therefore they rely on the Deputy Chief Executive responsible for the particular area for advice.... It is true that this is necessary for financial control purposes, but the delays are sometimes unacceptable.

In addition, while the Authority has established a Trust Fund specifically for environmental issues, the most important concern is how to quantify the environmental impact of its operations. For instance, to withdraw any money from this Trust Fund, which is "admin istered by a body including Parliamentarians of all the affected settlements", appropriate costing procedures are required (VRA Annual Report, 1994, p. 10). These procedures are currently arbitrary, though subject to reasonable justification and the scrutiny of the Director of Finance and appropriate Deputy Chief Executive. There is a need to standardise procedures for accessing this fund because the delays are currently perceived as unacceptable. However, standardisation can only be possible if the Authority is able to design ways of costing the environmental impact of its operations and integrate these into mainstream managerial accounting.

To gain an understanding of the forces driving the Authority to pursue these environmental policies with such renewed vigour, organisational participants were asked whether the Authority was under pressure from some 'external' power such as the government or financiers to pursue such policies. It was realised (by the researcher) that both the Ghana Government and the Authority's financiers insist on the environmental friendliness of its operations. Thus disclosure of environmental issues in its annual reports is required to assure the Ghana Government, which has delegated some aspects of the responsibility for resettlement of the people displaced as a result of the construction of the Akosombo and Akuse dams to the VRA, that these people and indeed the dams are properly looked after. In the case of the financiers, the Authority is required to state the environmental impact of any project for which it is seeking funding from these institutions, particularly the World Bank Group which remains the Authority's major external source of funding for its projects. For instance, organisational actors indicated that while a recent decision to justify capital investment did not directly include the environmental impact of such a project in the costing or economic evaluations, it nonetheless, emphasized environmental issues as significant 'qualitative' factors. Similarly, in its 1991 proposal for funding (for power extension to Wa in the Upper Western region) from the International Development Association, a

member of the World Bank Group, the VRA disclosed environmental impacts as follows:

> The proposed project is not expected to have any major adverse environmental effects. An important component of the project (17% of the project costs) is to supply Wa in the Upper West Region. The shortest route to supply Wa is the extension of 161 kV systems from Daboya to Wa (approximately 150 km). However, the line would need to go through the Mole National Game Reserve. Cognizant of the environmental needs of the project and of the African Convention for Conservation of Nature and Natural Resources Agreement, signed by Ghana in 1969, VRA has decided to build the transmission line to Wa by circumventing the Mole game reserve and thereby protecting it. This has increased the distance to be covered by about 280 km and has therefore, substantially added to the cost of this component. The transmission line in the north will provide grid supply to an area presently supplied by diesel generators and would, therefore, eliminate air pollution caused by diesel generation... (World Bank, Report No. 8207-GH, p. 23).

The discussion in this section shows that the Authority is currently pursuing environmental policies which are quite important to the people of Ghana. However, these efforts are still at initial stages and explain the lack of integration of environmental policies in mainstream accounting and financial management procedures. It is worth emphasizing that in terms of disclosing environmental policies and impacts in annual reports, significant efforts have been made by the Authority in the past especially when compared to results of surveys in such advanced Western countries as Australia, New Zealand, and the United Kingdom, although the Ghanaian public still remains skeptical. This partly explains one senior officer's (of Real Estate and Environment Department) comment that "as far as environmental awareness and disclosures are concerned, VRA is doing better than any other Ghanaian corporation. ...that is why I mentioned earlier on that our systems can not be described as deficient if they become known to whoever is making that assertion".

Conclusions

This paper has sought to illustrate empirically how the view of accounting as a neutral technical practice has failed to address significant national socioeconomic development policies in a developing country organisational context. The paper demonstrates how the failure to perceive accounting as a social and institutional practice has resulted in the neglect of vital issues in socioeconomic development of Ghana. The specific case study of the Volta River Authority, an organisation that was established as a major vehicle for rapid socioeconomic development in Ghana, provides

evidence of how social and environmental considerations (two important aspects of the notion of sustainable development) have either been sidetracked or given very little emphasis in the organisational routine decision making mechanism.

By drawing upon the notion of "sustainable development" as a terrain for investigating the effectiveness of the Authority's accounting and financial management systems, it was observed that the people-centred dimension of the concept was not reflected in the Authority's present accounting and financial management systems. It was however, realised that management of the Authority had very little control over the design of the system, especially with regards to the pricing structure. In fact, a major contradiction was observed between the pricing structure and the Government's current policy of promoting rural/national electrification. On the environmental dimension of sustainable development, it was found that VRA is currently making significant efforts to incorporate environmental impacts of its operations into the traditional accounting systems. In terms of disclosure in annual reports, significant progress, in recent years, was observed. It was however, found that these environmental policies were pursued with renewed vigour because of external pressures from the Ghana Government and international financial institutions, such as the World Bank Group.

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