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Towards an Environmental Communication Conceptual Model for Enabling Socio-economic Development in Africa

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Abstract

Africa has vast natural and human resources and thus great potential for socio-economic development. Yet, very few countries on the continent have been able to utilise their resources fully and to reap the expected benefits from that potential. Many of the factors for this failure to boost socio-economic development and improve the lives of individuals and groups on the continent have been well documented. However, one factor that is often glossed over is the role of negative environmental behaviour on development. This paper argues that there is a strong relationship between the two and suggests a viable framework for integrating these two issues/areas by providing a theoretical model for incorporating environmental communication, and subsequently environmental consciousness, into socio-economic development programmes.

Key terms: Environmental communication, communication for environmental consciousness, development communication and environment.

Résumé

L'Afrique possède d'énormes ressources naturelles et humaines, et dispose ainsi d'un fort potentiel de développement socio-économique. Pourtant, très peu de pays africains sont parvenus à employer ces ressources de manière efficace, et à tirer les bénéfices escomptés à partir de ce potentiel. La plupart des raisons à cette incapacité à générer le développement socio-économique et améliorer ainsi

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le quotidien des individus et des groupes de populations du continent ont déjà été établies. Cependant, il existe un facteur qui est souvent passé sous silence : l'effet de nos comportements négatifs envers l'environnement sur le développement. Cette communication affirme qu'il existe un fort lien de cause à effet entre ces deux éléments et propose un cadre viable d'intégration de ces éléments dans un modèle conceptuel. Ceci permettra d'inclure la communication environnementale, et de là, la prise de conscience environnementale dans les programmes de développement socio-économique.

Mots clés: communication environnementale, communication pour la sensibilisation à l'environnement, communication et environnement pour le développement

Introduction

Africa is in environmental crisis . . . The continent has overdrawn its environmental accounts and the result for most of Africa south of the Sahara has been environmental bankruptcy. Bankrupt environments lead to bankrupt nations and may lead to a bankrupt continent (Timberlake 1985:18).

Time and again, African governments have drawn up highly optimistic development plans which they hope will move their countries forward and bring about the much desired development or improvement in the socio-economic well-being of their people. Yet, despite such positive plans and the real prospects for this to happen, genuine socio-economic development has become highly elusive to many an African country. Incidentally the few countries, including Libya, Morocco, Tunisia and Egypt in the north, and South Africa in the south, which seem to be succeeding happen to be those that have integrated environmental issues in their development plans.

In the mid-1990s, Amoakohene (1995) observed paltry environmental reporting by Ghanaian newspapers. A wider pervasive negative environmental behaviour on the continent has been attributed to minimal environmental awareness (Nwosu 1993; Timberlake 1985). This is along with a lack of understanding about the benefits of acting otherwise in their pursuit to survive in a generally harsh economic milieu. As a result of these factors, most people have abandoned the traditional African wisdom of holding the environment in awe and respecting it, in return for the life-sustaining merits that it provides for individuals and communities. It is the contention of this paper that the failure of the peoples of the continent to actively promote and maintain an environmentally conscious lifestyle, consequently results in harmful environmental

behaviour, which affects socio-economic development in Africa. The significance of this particular problem arises out of the fact that more often than not, an attitudinal change is required before it can be resolved. In other words, people need to change how they perceive the environment before they can make any effective changes in their behaviour or interaction with it.

In this paper, I argue that there is a direct link between environmental consciousness and socio-economic development, on the basis that negative environmental behaviour is anathema to socio-economic development. I also maintain that communication is a key ingredient in engendering environmental consciousness and trying to get people to act in ways that will not harm the environment, and be encouraging of development-related activities. This is more so because each society constructs its view of environmental problems within the context of its cultural values and its social and political forces (Szagun & Pavlov 1995). Consequently, using the social exchange theory as a basis, I propose a conceptual model aimed at resolving the situation through communicating the message of environmental protection and the benefits of creating or ensuring an enabling environment that will be conducive to socio-economic development. Although, 'toward' in the title suggests that the work presented here is evolving, I am confident that the approach I am suggesting can help African countries to prompt their citizens to engage in responsible environmental behaviour, and ultimately help them to gain the necessary benefits that authentic socio-economic development will bring.

The model can guide governments, environmentalists and interest groups in Africa, working closely with communication specialists, to embark on programmes that will succeed not only in educating the general public about the real dangers of environmental degradation, but also in motivating them to act in environmentally friendly ways and thus pave the way for real socio-economic development on the continent.

Relationship between the environment and development

In more than one way, the opening quote (observation) by Timberlake (1985) provides a basis as well as inspiration for the approach to socio-economic development in Africa that this paper is advocating. What the quote shows is that, there is indeed an inextricable link between environment/environmental behaviour and the socio-economic (development) status of a people, and/or poverty. The United Nations Environmental Program (UNEP 1997) report notes that poverty is a prime

cause of environmental degradation, and also mentions that the problem is, many times over, more prevalent in developing/least developed countries, than it is in the developed countries. Also, the fact that the *World Development Report* of 1992 was based on 'Development and the Environment' is a clear indication of how paramount the relationship between the environment and development is.

Environmental issues are issues of development and these apply to developed, developing or least developed countries. For example, in the developed nations of the world, environmental problems appear to be a result of industrialisation and the enjoyment of other good things of life that come with technological advancement. Thus, acid rain, pollution by exhaust fumes and chlorofluorocarbons (CFCs) are some of the environmental concerns of the developed world. On the other hand, some of the environmental problems that plague the developing or least developed nations are in the form of dwindling forest resources as a result of over-reliance on wood for fuel and export, unclean water resources as a result of human and animal pollution, over-exploitation of the land as a result of over-dependence on agriculture, and a host of other poverty related problems. Tutu (1996: 107), for example, observes that,

While environmental degradation can be viewed globally, it is possible to be more concerned about the ones that are closer home . . . environmental problems in Less Industrialised Countries (LICs), such as unsafe water, inadequate sanitation, soil and forest depletion, indoor and outdoor polluted air are different and more life threatening than those associated with rich countries such as carbon dioxide emissions, depletion of stratospheric ozone, photochemical smogs, acid rain and hazardous wastes in industrialised countries.

A theoretical example of the link between the environment and development can also be found in the definition of development offered by Wang and Dissanayake (1981: 217) who define development as,

The process of social change which has as its goal the improvement in the quality of life of all or the majority of the people without doing violence to the natural and cultural environment in which they exist and which seeks to involve the generality of the people as closely as possible in this enterprise, making them masters of their own destiny.

This definition shows the linkages between development, the environment and communication, which are core concepts in this paper. Tutu (1996: 107) also points out two ways in which environmental problems can undermine development.¹ He argues that (a) good

environmental quality means an improvement in the welfare of people and therefore if the net financial benefits from an activity are outweighed by the costs imposed by it through environmental degradation, then this cannot be development, and (b) environmental degradation can affect the future negatively. For example, degraded soils prevent the opportunities of utilising the soil for higher output in the future.

On a more practical note, an example of this relationship is offered in an article published in the magazine *New African*. In this article, Ghana's President (J.J. Rawlings) is said to have admitted that mining companies in the past operated with scant regard for the environment, health and livelihood of local people, and that the Ashanti Goldfields in Obuasi have a duty to protect the environment in the Obuasi community (Sarpong, 1993). On another occasion, he was reported to have said, after commissioning a new shaft as part of the mine's expansion, that the mine forms part of the country's lifeblood and everything should be done to prevent any disruption of work at the mine (Sarpong 1993). Herein lies the dilemma of the developing African country. Should a country develop at the expense of the environment while playing down the long-term effects of environmental degradation? In this dilemma also one finds an unmistakable link between the environment and development. Vyas and Reddy (1998:48) capture the essence of this dilemma when they observe that,

Though environmental protection and economic development are compatible on a theoretical plain, in practice a trade-off exists between them. This is more so in the context of developing countries which are presently striving to achieve high growth rates in order to attain the standards of living of the industrialised countries.

Elaborating further, Vyas and Reddy (1998) note that for developing countries striving to achieve high growth rates there is always a trade-off between environmental protection and economic development.

In the same light, Bowyer-Bower notes that in Zimbabwe, environmental legislation allows for application to the controlling authorities for exemption from compliance, thus leaving 'a path by which environmental needs may be sacrificed in favour of development projects' (1996:10). He singles out the Mining and Minerals Act of Zimbabwe for criticism on the grounds that it has "provision to override environmental protection measures stipulated in other laws" (Bowyer-Bower 1996: 10).

While the examples cited so far deal with the relationship between development and the environment at the macro level, it is possible to outline a similar relationship at the micro level as well. For instance,

individual behaviour or activities such as littering and improper waste disposal, that harm the environment, can scare away investors and tourists (especially the foreign ones) whose activities create jobs and contribute directly to the socio-economic development of a country. Further, unfriendly environmental acts such as indiscriminate bush burning, misuse and overuse of natural resources, pollution of water bodies through the use of unwholesome fishing methods, all go to impoverish the environment and in the long run destroy some of the basis for socio-economic development. It is such anti-environmental behaviour (at the micro level), that the model proposed in this paper seeks to address. These observations are ample indication that at both the macro and micro levels of society, no meaningful development can occur without environmental implications. In the light of this, it is appropriate that development programmes do not lose sight of the environmental perspective—about awareness and attitudes. All development programmes must necessarily include an environmental awareness component.

Concept of social exchange and socio-economic development

The theoretical concept of social exchange suggests that social life is a series of exchanges and that an individual's voluntary behaviour, will be motivated by the benefits expected (Blau, 1964, Mackey 2004). Thus, they will be driven by their self-interest in the formation of their attitudes and perceptions (Berscheid and Walster 1978). According to the theory, 'the outcome of any form of social or human interaction is the combination of rewards and costs involved in the interaction' (Mackey 2004: 66). As Thibaut and Kelly (1999) note:

People strive to minimize costs and maximize rewards, as with economics, and then base the likeliness of developing a relationship with someone on the perceived possible outcomes. When these outcomes are perceived to be greater, we disclose more and develop a closer relationship with that person.

When applied to socio-economic development programmes, it is suggested that the benefits that individuals seek (e.g. employment opportunities; improved lifestyles) in return for the benefits (e.g. support for socio-economic development) they offer for socio-economic development programmes, will shape their attitudes and perceptions towards the environment. Those desired positive outcomes, as a matter of self-interest, leads to positive attitudes towards socio-economic development (Mowforth and Munt 1998). However, in practice, the expected positive return and thus the desired host attitudes and perceptions that foster socio-economic development, will be subject to a number of

moderators. For example, development programmes may generate jobs, which in principle, is a positive return. Despite this, if a community considers the nature of the jobs generated as being unsatisfactory because of the low wages paid relative to the hours worked, then support for that specific development programme may not be forthcoming. More importantly, the availability of incentives for environmentally conscious behaviour, which supports socio-economic development, will be crucial to the formation of positive attitudes and perception towards development.

Concept of environmental consciousness

Environmental consciousness can be broadly defined as the acquisition of knowledge about environmental problems or issues that translates into attitudinal changes and subsequently results in a tendency to act positively towards the environment. The concept of environmental consciousness defined this way, is similar to what some scholars describe as environmental concern or environmental awareness (see, for example, Suhonen 1993; Grob 1995; Szagun and Pavlov 1995; Wall 1995; Gooch 1996). It comprises both an intellectual and an affective element. This means that the individual who is said to be environmentally conscious would possess a body of knowledge of specific environmental problems. In addition to the intellectual, the individual would demonstrate a desirable way of relating to those problems that crystallises into positive attitudes towards the environment. Following on, the individual would be awoken by that knowledge to act appropriately in concrete situations (Rannikko, 1996). Such appropriate behaviour represents the affective dimension of environmental consciousness.

Proposed model

The model consists of four components: environmental communication; environmental awareness; positive development related environmental attitudes/behaviour; and conducive environment for socio-economic development (Figure 1). Each component consists of a number of core activities, issues and/or sub-components.

- The environmental communication component consists of the gathering and dissemination of important information about environmental issues related to socio-economic development, including actual communication activities and strategies that are aimed at informing people about those issues, the appropriate behaviour expected of individuals and communities and the need to exercise vigilance on behalf of the environment in order to boost socio-economic development.

conomic development. It also includes information about the expected benefits of socio-economic development aimed at inducing people to see the required positive environmental behaviour as a social exchange where benefits accrue to both individuals and the society at large.

- The environmental awareness/consciousness component consists of two sub-components i.e. recognition of environmental problems, including specifically, development-related environmental problems, and factual knowledge about development's relationship with the environment.
- The positive development related environmental attitudes/behaviour component includes a desirable target audience perception of the environment, a tendency to act positively on behalf of the environment, undertaking explicit activities which have a positive bearing on the environment; a tendency to get involved in activities aimed at promoting socio-economic development.
- The enabling environment for socio-economic development component consists of a milieu that is conducive to socio-economic development, all activities that actually boost socio-economic development and real evidence pointing to an improvement in the socio-economic lifestyles/status of people.

Having described each of the components, each component's role in the model will be discussed in turn.

Environmental communication component

The take off point of the proposed model is the understanding that development activities and also environmental protection/awareness activities are information-based or information-related. Environmental communication enables the target audience to be informed about development-related environmental issues, including how they might tackle environmental problems. Such an effort requires the gathering and dissemination of relevant information in order to first create a climate for environmental change through motivation, education and mobilisation (Ansah 1985), all of which need communication to succeed. This component also includes communication aimed at appealing to the self-interest of community members as posited by the social exchange theory. Such communication will place emphasis on the benefits of socio-economic development that individuals could see as incentives. Thus, for target audiences to make the right decisions on behalf of the environment they need some

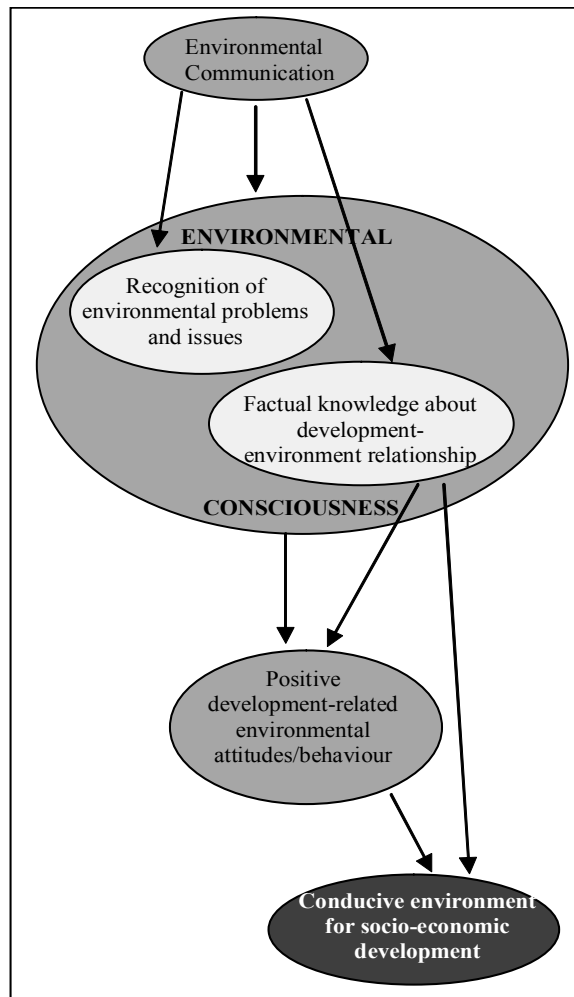


Figure 1: Model of environmental consciousness and socio-economic development

basic information and guidance, the provision of which, the model takes as its starting point. As shown in Figure 1, environmental communication can directly affect each of the sub-components in the environmental awareness component. At the same time, environmental communication is expected to bring about general environmental awareness/consciousness. The ultimate goal of environmental communication is to bring about positive environmental change, which will put a stop to environmental degradation.

Environmental awareness/consciousness component

Environmental awareness, as Vyas and Reddy (1998: 53) note, '... is the prerequisite for effective tackling of environmental degradation.' Without awareness of the enormity of environmental problems, individuals and other stakeholders may not even recognise environmental problems let alone take steps to tackle them. The model proposes that the more aware people are of the state of their environment, the more appropriately they will behave (Grob 1995). The environmental awareness component in the model consists of environmental knowledge, including specific knowledge about development's relationship with the environment, and the ability to recognise environmental problems. In terms of knowledge about the environment, it is suggested that the more people know about their environment, the more aptly they will behave (Borden & Schettino 1979; Katzev & Johnson 1984; Grob 1995). It is also said that the more an individual recognises environmental problems the more appropriately he or she will act (Grob 1995), a view, which is widely supported (see, for example, Schahn & Johnson 1990; Kwansah-Aidoo 2003). It is also expected that, because the ultimate goal of the model is socio-economic development, this part of the model will also entail factual knowledge about the relationship between the environment and socio-economic development. This is to be brought about largely through environmental communication aimed at drawing attention to the not-so-obvious relationship between environmental behaviour and socio-economic development. It is expected that, when individuals know about both the positive and adverse effects that their interaction with the environment can have on development and development programmes, they will be prepared to behave appropriately. This expectation holds particularly true, when considered in the light of social exchange theory, as discussed earlier.

Positive development-related environmental attitudes/behaviour component

It suggests that when people have acquired factual knowledge about the

environment and can also recognise environmental problems and issues, they will be inclined to see the environment in a positive light and ultimately adopt pro-environmental behaviour. In addition to suggesting that general environmental awareness will encourage positive attitudes and behaviour towards the environment, it is also suggested that recognition of environmental problems and issues, especially those related specifically to development, may be enough to engender positive environmental attitudes and behaviour from individuals. The above view is partly supported by Grob (1995), who argues that recognition of environmental problems and issues might be enough to engender pro-environmental behaviour. It is also expected that out of an understanding of the relationship between the environment, individual behaviour and development, people will be more inclined to perceive the environment and also socio-economic development in a different light. In addition, an expectation of benefits from socio-economic development as proposed in the social exchange theory, should help bring about the expected change in perception. A positive change in perception in this regard, should make individuals want to participate in activities that, in their view will enhance socio-economic development. Involvement in such activities could be both at the micro and macro levels of society.

Enabling environment for socio-economic development component

The ultimate aim of the model is to create a milieu that will be conducive to socio-economic development. This component suggests a direct linkage between environmental consciousness and an environment that will enable development activities to flourish. This is on the basis that when individuals within societies are environmentally conscious and consequently do not engage in negative environmental behaviour, they do not only avoid harm to the environment and enhance the viability of the environment, but also they help create a milieu that is highly favourable to socio-economic development. Thus, for African countries to utilise their potential for development and reap the benefits thereof, they must make a deliberate effort to include the promotion of environmental consciousness in their socio-economic development programmes.

Discussion

In the attempt to boost socio-economic development, the specific environmental problems encountered are diverse. They include bush burning, misuse and overuse of natural resources, pollution of water bodies, and the acceptance of the concept of sustainability (Ayres 2000). In many instances, they are fundamental to socio-economic development

and thus critical to success if not adequately resolved. The development of environmental consciousness is a necessary step for the resolution of these challenges for '... out of increased environmental consciousness, micro and macro levels of social organisation would, more or less of their own volition, start to make the changes necessary to solve environmental problems' (Morrison 1986: 187).

The link to socio-economic development is obvious in the sense that development programmes designed at a macro level of social organisation incorporates the relationship between specific developmental activities and the state of the environment, which is by and large influenced by human activities or human interaction with the environment. At the micro level, the actions of individuals either affect the environment positively or negatively. What individual societal members do therefore has a direct link to the environment. These linkages and relationships can either work to produce an environment that enhances or works against development programmes. It is clear then that socio-economic development cannot be devolved from the environment and the behaviour that goes on within this environment. Thus, if the environmental challenges are to be minimised in order to boost socio-economic development, then individuals, communities and other stakeholders should move beyond just being aware of development-related environmental problems. They should prepare and put themselves in positions where they are willing and able to participate in environmental reform (Morrison 1986) and focus more intently on positive environmental behaviour. In communication terms, people should be made aware of the consequences of their negative environmental behaviour on socio-economic development and hopefully that will influence them to behave positively towards the environment. In addition, people should be made aware of the expected benefits of socio-economic development so that they can feel incentivised to put up the expected behaviour. In other words, communicators must harp on the would-be positive outcomes in order to appeal to the self-interest of individuals and communities. This appeal to self-interest will hopefully yield the fruit of positive attitudes towards development programmes thereby creating a veritable situation of social exchange.

In any attempt at engendering environmental consciousness, I propose that due regard be given to the continent's indigenous body of knowledge and beliefs. I refer specifically, to a particular African traditional view of the environment that encourages people to behave positively towards the environment. As Quarm (1995: 99) has rightly noted, traditional African

wisdom holds the environment sacred and sees it as having the 'actual and potential ability to give birth and sustain human beings adequately if they pay her reciprocal duties of awe and care'. The environment in this sense is seen as continuously bearing the vital gifts of the earth. The incorporation of such themes in any environmental communication effort, particularly at the micro levels of African society, can provide a basis for the much-needed environmental consciousness that will ultimately prove beneficial to enabling an environment that is conducive for socio-economic development.

Conclusion

The principal position in this paper has been that there is a direct and undeniable link between the state of the environment, individuals' behaviour within this environment, and socio-economic development. This is because negative environmental behaviour is anathema to the creation of a milieu that encourages or enables socio-economic development. When people engage in undesirable environmental behaviour such as littering and bush burning, such behaviour can be seen as conceptually and practically damaging to the development agenda and therefore discouraging to overall socio-economic development.

I have also noted that people's awareness of this relationship is vital for their participation in activities aimed at boosting socio-economic development. As a result, I have argued that there is the need for African countries to incorporate environmental consciousness into socio-economic development plans and programmes. Specifically, I have suggested a model that seeks to integrate the two areas of endeavour so that the right conditions can be created for a general improvement in the lives and lifestyles of people in the various countries that make up the continent. The model's viability hinges on the fact that social exchange theory provides a feasible basis for making such a proposal. It is based on my belief that in addition to all the other factors discussed, an appeal to individual self-interest by way of the expected benefits from socio-economic development will encourage the expected positive behaviour that will then help engender an enabling environment for socio-economic development on the continent. In all this, communication is expected to, and rightly plays a central role. It is only when the right messages have been communicated to people, who are mostly ignorant of these issues/linkages, that they can begin to understand, and perhaps contemplate behavioural change.

Although, as discussed earlier, I recognise that there are moderating

factors that can intervene either positively or negatively in the process/ model of socio-economic development I have suggested here, I believe that such an approach will yield useful results and help African countries to reap the expected benefits of socio-economic development that has so far proved elusive for most countries on the continent. In view of this I propose that long-term communication plans should be put in place aimed at ensuring that the general populace in African countries recognises the intricate relationship between the lives of human beings and their environment, and the necessity of adopting the positive attitude of environmental responsibility to enhance socio-economic development.

Notes

1. Tutu (1996: 107), in this regard, refers to development as implying 'the existence of opportunities that enable people to exploit their potentials'.

References

- Amoakohene, M.I. (1995) 'The environment: How much media reporting?' *Media Monitor*, 1:17, 18, 25.
- Ansah, P. A.V. (1985) *GBC Golden Jubilee Lectures*. Tema: Ghana Publishing Corporation.
- Aryes, R. (2000) 'Tourism as a passport to development in small states: reflections on Cyprus'. *International Journal of Social Economics*, 27, 2, 114-133.
- Blau, P.M. (1964) *Exchange and power in social life*. New York: John Wiley and Sons, Inc.
- Berscheid, E. and Walster, E. H. (1978). *Interpersonal attraction*. (2nd edition), Reading, MA.: Addison-Wesley.
- Boateng, A.B. (1993) 'Moderating the interface: Media role in environmental management in Ghana'. In S.T.K. Boafo (ed.), *Media and environment in Africa—Challenges for the future*. Nairobi: ACCE (pp. 45–51).
- Borden, R.J. and A. P. Schettino (1979) 'Determinants of environmentally responsible behaviour'. *The Journal of Environmental Education*, 10, 35–39.
- Gooch, G.D. (1996) 'Environmental concern and the Swedish Press: A case study of the effects of newspaper reporting, personal experience and social interaction on the public's perception of environmental risks'. *European Journal of Communication*, 11 (1), 107–127.
- Grob, A. (1995) 'A structural model for environmental attitudes and behaviour'. *Journal of Environmental Psychology*, 15, 209–220.
- Katzev, R.D. and T.R. Johnson (1984) 'Comparing the effects of monetary incentives and foot-in-the-door strategies in promoting residential electricity conservation'. *Journal of Applied Social Psychology*, 14, 12–27.
- Kwansah-Aidoo, K. (2003) 'Environmentalism and cultural change: The role of the mass media'. In W. J. Tettey, K. Pupilampu, & B. Berman (eds) *Critical*

- perspectives on politics and socio-economic development in Ghana*. Leiden: Brill Publishers (pp. 389–411).
- Mackey, S. (2004) 'Theoretical perspectives'. In J. Johnstone and C. Zawawi (eds) *Public relations theory and practice*. Sydney: Allen & Unwin (pp. 43–71).
- Morrison, D. E. (1986) 'How and why environmental consciousness has trickled down'. In A. Schnaiberg, N. Watts and K. Zimmerman (eds.), *Distributional conflicts in environmental resource policy*. NY: St. Martin's Press (pp. 187–220).
- Mowforth, M. and Munt, L. (1998) *Tourism and sustainability: New tourism in the third world*. London: Routledge.
- Nwosu, I.E. (1993) 'Disseminating information on environmental issues and problems in rural Africa: Towards an integrated model'. In Boafo, S.T.K. (ed.) *Media and environment in Africa: Challenges for the future*. Nairobi: ACCE (pp. 11–21).
- Quarm, D. K. (1995) 'Environmental dynamism in the promotion of Ghana's cultural heritage: The communication medium'. In M. Atchia and S. Tropp (eds), *Environmental management, issues and solutions*. Brisbane: John Wiley & Sons (pp. 99–101).
- Rannikko, P. (1996) 'Local environmental conflicts and the change in environmental consciousness'. *Acta Sociologica*, 39, 57–72.
- Sarpong, S. (1993) 'Ghana: All that glitters is not gold'. *New African*, October 20.
- Schahn, J. & E. Johnson (1990). 'Studies of individual environmental concern: The role of knowledge, gender and background variables'. *Environment and Behaviour*, 22, 767–786.
- Suhonen, P. (1993) 'Environmental issues, the Finnish major press, and public opinion'. *Gazette*, 51, 91–112.
- Szagan, G., and V. Pavlov (1995) 'Environmental awareness: A comparative study of German and Russian adolescents'. *Youth and Society*, 27 (1), 93–112.
- Thibaut, and Kelly, (1999) *Social Exchange Theory*. <<http://oak.cats.ohio.edu/~a1891396/exchange.htm>>.
- Timberlake, L. (1985) *Africa in crisis – the causes, the cures of environmental bankruptcy*. Earthscan. UK: Russel Press.
- United Nations Development Program (1997) *Human Development Report*. New York: Oxford University Press.
- Vyas, V. S. and R. V. Reddy (1998) 'Assessment of environmental policies and policy implementation in India'. *Economic and Political Weekly*, 33 (1–2), 48–54.
- Wall, G. (1995). 'General versus specific environmental concern—A Western Canadian case'. *Environment and Behaviour*, 27 (3), 294–316.
- Wang, G. and Dissanayake, W. (1984). 'Culture, development and change: some explorative observations'. In Wang and Dissanayake (eds), *Continuity and change in communication systems*. New Jersey: Lawrence Elbaum Associates.

