









## ABSTRACT

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Perceptions of Health: Water and Sanitation Problems in Rural and Urban Communities in Nigeria

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Finnish summary

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In international development discourse, more emphasis has been given to locality during the recent years. Local dwellers and stakeholders should be more wholly involved in the environmental protection programmes based on the principles of sustainable development. This thesis is part of the HEPECO (Environmental Health: Perceptions on Healthy and Health Care Services in a Nigerian Community) research project and the ENHICA (Environment, Health and Information Activities for Communities in Africa) research network. Rising from the Douglas (1985) theory of risks as a result of a cultural and social negotiation process, the thesis focuses on the process of formulating an environmental health risk. This is based on a community development risk cycle (ref. Clausen 1989), originally defined by the ENHICA research network and benefiting from the idea of 'cyclic causality' (ref. Morin & Kern 1993). In this study, the cyclic social transformation model is applied with the aim of theoretically interpreting community risk perception and community action to reduce risk. The qualitative data is from three fieldwork periods (1998, 1999 and 2001) to rural communities in the Ile-Ife region, and an urban shantytown of Lagos, among the Yoruba ethnic group of south-western Nigeria. The thesis consists of an introduction and five articles, each documenting a particular theme: local definitions given to practices and beliefs in rural and urban Nigeria, experiences of traditional healers in water and healing in rural communities, and constraints in water availability and environmental health in rural and urban settings. The results highlight the importance of community involvement, including the sub-communities of different stakeholders, instead of an individual approach, in order to increase environmental health activity and the environmental security aspect at the local level and in the larger frames of development.

Keywords: culture, environmental health, Nigeria, participatory action research, sanitation, water, Yoruba

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- Article I** Rinne, E.-M. 2001. Environmental Health Risks – Perceptions of Household Water Practices in Rural Nigeria. African Flows. Interim Report of the Research Network Environment, Health and Information Activities for Communities in Africa (ENHICA). M. Järvelä; M. Korpela and K. Kuvaja (eds.) University of Jyväskylä, Department of Social Sciences and Philosophy Working Papers no. 107. Jyväskylä: University Printing House, p. 113-132
- Article II** Rinne, E.-M. 2001. Water and healing – Experiences from the traditional healers in Ile-Ife, Nigeria. Nordic Journal of African Studies 2001:10(1), p. 41-65
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# 1 ENVIRONMENTAL HEALTH AND SUSTAINABLE DEVELOPMENT IN DEVELOPING COUNTRIES – THE CASE OF NIGERIA

This study concerns environmental health, particularly water and sanitation problems in selected rural and urban communities in south-western Nigeria among the Yoruba<sup>1</sup>. From the point of view of sustainable development, Nigeria presents a very challenging example of a country with a multitude and complexity of problems. Its fast population growth, rich nature and difficult economical, social and political problems all characterise the multiplicity of everyday constraints in both rural and urban areas. (NEST 1991.) The case of the Ogoni people and the environmentally damaging oil production of Shell in the eastern part of Nigeria has gained much international recognition and involved NGOs and individuals in protecting the environment and patterns of local livelihood (Ihonvbere & Shaw 1998; Sahil 1999; Wunmi 2002). Less publicity has been given to other environmental problems of the country: rapid deforestation, desertification, poor waste management, overcrowding of the living environment and pollution of natural resources, such as water and soil (NEST 1991; CountryWatch 2003).

The World Commission on Environment and Development (WCED) defined *sustainable development* as a process which 'meet[s] the needs of the present without compromising the ability of future generations to meet their own needs' in 1987, based on the report of the Brundtland Commission (Our Common Future 1988). This included a notion that the two terms 'sustainable' and 'development' are completely compatible and should be dealt with in conjunction (Young 1995). In Rio (1992), aspects of ecological, social and cultural dimensions were handled, and Agenda 21 was formulated to guide

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<sup>1</sup> Throughout the study I will use the concept of the Yoruba and the Yoruba culture in a descriptive sense, but not excluding the fact that there are evident regional differences when it comes to ethnic, religious and cultural variations among the numerous Yoruba sub-groups (for further details see, e.g. Peel, J.D.Y (2001) *Religious Encounter and the Making of Yoruba*, Indiana University Press). However, within the limits and the purpose of this study, I have used the common definition of the Yorubaland as an entity unit for the ethnic group of the Yoruba.

regional, national and international political actions for sustainable development (Lafferty & Eckenbert 1998; Young 1995; Järvelä & Kuvaja-Puumalainen 1998). The concept has also faced a lot of criticisms, with many authors questioning its precision and usefulness, e.g. in identifying it as a 'contested concept' (Lafferty 1996), or by defining it as a type of 'socio-economic advancement' (Yearley 1996, 96; 131) which can be continued indefinitely without exhausting natural resources and impairing the capacity of natural systems to absorb pollution (Young 1995). However, as Strydom (2002) points out, sustainability or sustainable development is above all a cultural form, which consists of words, concepts, propositions, theories, explanations, justifications, meanings and symbols that legitimises a range of actors and agents to engage in certain kinds of actions and to create certain kinds of institutions. Therefore, it cannot be considered to be a pure ideology, but rather a cultural form with practical efficacy. This cultural form is generated by a process of social construction, where a number of actors or agents compete and conflict with one another over different interpretations, claims and decisions. Therefore it is very difficult to search for a harmonious concept. (Strydom 2002, 127–128.) At the Rio +10 Conference in Johannesburg (2002), the need for a comprehensive approach was once again highlighted. The conference agreed that poverty eradication has become the major challenge for sustainable development, a task where all the three dimensions culminate and where environmental protection has a central role (United Nations 2002).

Most of the developing countries<sup>2</sup> have by now ratified international agreements on environmental protection. However, they have not actually been able to fulfil the international standards and environmental regulations, but have even been accused of increasing environmental degradation, e.g. in industrial waste management or land and natural resources degradation. For example, many African countries have been unable to benefit from the full potential offered by the global Multilateral Environmental Agreements (MEAs), and have even found themselves unable to implement the necessary provision of the MEAs they have ratified (UNEP 2002). One reason for this is because the developing countries have not been able to get their share of the economic development in the world, they have been forced to adapt more consuming practices, and due to this, are now facing many developmental, economical and political problems. Thus, their resources for environmental actions have been limited and secondary in relation to the fundamental problems of war and peace, migration flows and national instability. Environmental changes became

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<sup>2</sup> The terms *developing countries* and *Third World* are used here to indicate parts of the world including Africa, Asia, Latin America and the Middle East. These countries have had a common history of exclusion from the power status in the world, generating a set of common, historically determined socio-economic characteristics. (Martin & O'Meara 1995; Amin 1997; Castells 1998; Teivainen 2002.) Many times the terms of developing or undeveloped country have been recognised as not being sufficient enough to describe the complex situation between such countries and the world balance, but they form a basis to discuss the present contents of development and sustainable development in a broader sense, and in the case of a particular country, such as Nigeria.

a global problem in the 1970's, when people started observing the signs of prolonged environmental damages and the worsened environmental situation in the world. Also the situation in many Sub-Saharan countries became extremely severe due to droughts and famines and was reported more widely. These increased common interests in becoming more aware of the condition of natural sources and the management of natural resources to prevent the ecosystem compared to previous decades. (Martin & O'Meara 1995; Stryker & Ndegwa 1995; Woube 1996.)

Manuell Castells (1998) has argued that the process of social exclusion may even deepen the division between the developed and developing world and cause new dimensions of segregation in the world such as rural – urban division, increased poverty and inequality, and polarization in the distribution of wealth. Consequently, this may lead to evolvment of a 'Fourth World', referring to an increasing segregation of indigenous nations, which at the same time may become established as a part of the 'world order' (Seton 1999). This would then increase evolvment of new forms of dependency besides the existing ones. Therefore, it is interesting to consider what is the role of the informal sector including that of the local communities to respond to the growing needs of the 'Fourth World' (Castells 1998, 95), and who are actually the actors operating, e.g. in the environmental health sector.

Based on the WHO's definition, environmental health comprises of aspects of human health and diseases that are determined by factors in the living environment. However, the concept also refers to theories and practices of assessing and controlling factors in the environment that can potentially affect health (WHO 1990). During recent years, the role of environmental health, in international development cooperation, has been emphasised and it has become an important part of sustainable development and the general developmental debate (Redclift & Benton 1994; Elliott 1998; World Bank 1999). On the operational level, the issue of environmental health itself has not been well acknowledged in the developing world. In 1989 WHO reported that in a sample of 36 countries undergoing moderate to rapid industrial development, 26 had enacted only minimal or partial anti-pollution legislation, 8 had assessment capability such as adequate laboratory facilities, and 9 enough staffing to monitor environmental health influences, and the situation seems to continue much the same (Elliott 1998).

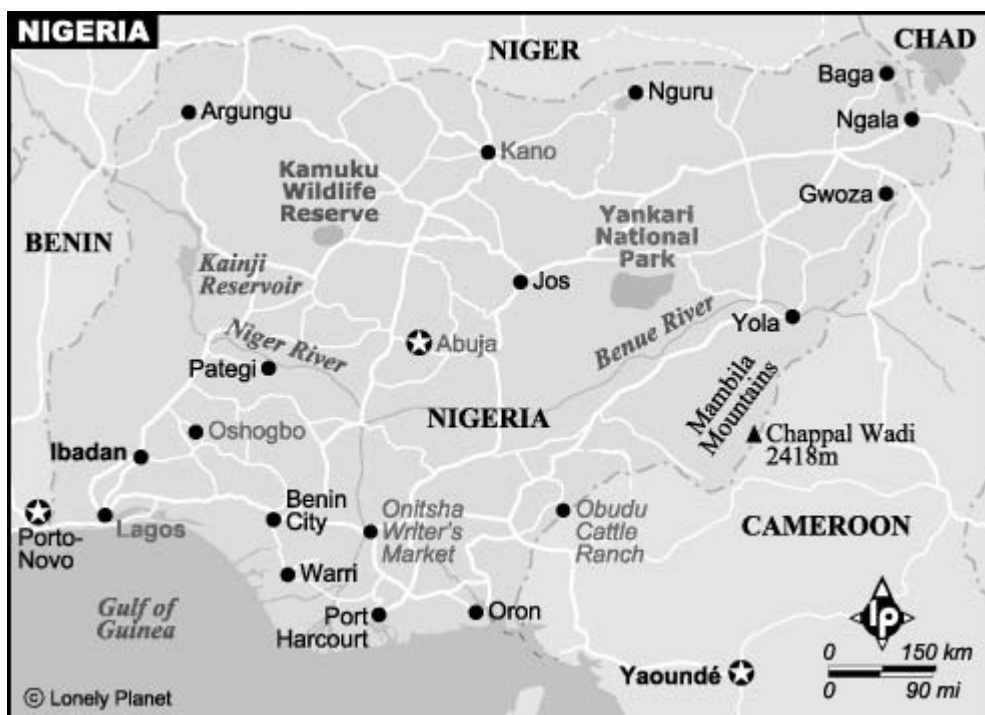
It is widely agreed that the responsibility for environmental health cannot remain only on the industrialised countries, but that also the developing countries should increase their involvement in environmental protection (Hjortaf-Ordnäs & Lundqvist 1999; Satterthwaite 2001). In addition, more emphasis is now given to *locality* (Escobar 1995), i.e. that the local dwellers and stakeholders<sup>3</sup> should be more involved in environmental protection. International agencies agree that environmental policy should be adjusted to

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<sup>3</sup> With actors and stakeholders I refer to local people and communities, but also environmental non-governmental organisations, grass-roots movements, indigenous people, industry, financial institutions, scientific bodies and intergovernmental organisations such as states and governments (c.f. Elliott 1998, 96).



the special contexts of the particular developing country or region according to local requirements, instead of trying to adapt mainly western-based systems and practices (Weidner 1991). It is also recognised that it is the nature of the problems and the ways of managing and protecting the environment, which differ between countries, not the concern for environmental protection. However, the level of awareness and importance given to environmental issues varies, and as Dunlap & Jones (2002) point out, there are a number of difficulties when measuring attitudes towards 'environment', or 'environmental concern'. This is because when taking environment as an 'attitude object', one is faced with the complex and evolving nature of the environment leading to a basic question of how, to ultimately define environment. (Dunlap & Jones 2002; see also Serres 1990.) It is also acknowledged that the extent of environmental problems can be conceptualised very differently – the focus can be on local, national or international contexts, which makes most of the challenges among various actors and stakeholders (Hjort-af-Ordnäs & Lundqvist 1999). This affects the way that social and cultural factors are emphasised also in environmental health (Harrison & Huntington 2000).



(Source: <http://www.lonelyplanet.com/mapshells/africa/nigeria/nigeria.htm>)

FIGURE 1 Nigeria: Ile-Ife (located between Oshogbo and Ibadan) and Lagos

The study sites for this research project come from south-western Nigeria, from Ile-Ife and its environs where the population is generally identified as a fundamentally rural people who have witnessed the gradual evolution of the city from a historical settlement to a thriving township. In spite of the urbanisation process, the city still retains many rural elements, manifested by the absence of a processed water supply system, planned refuse and sewage

disposal systems and general lack of environmental control. Another site is a shantytown<sup>4</sup> area of Lagos, where the urban pace is all the time present, even though the majority live in the low-income and shantytown areas, where the living conditions do not actually differ much from rural living conditions.

The study is based on environment sociology<sup>5</sup> and medical anthropology<sup>6</sup> approaches. My aim is to investigate local people's identification of risk factors and their experiences of an issue that is of primary importance and also represents a huge workload every day in rural villages and in the heat of city life of urban shantytowns – that is tackling with an unsafe water supply and sanitation. This is an area where universal concern of the present population and future generations is shared by developed and less developed countries – but with a very different emphasis, resources and involvement of actors and stakeholders (Falkenmark & Lundqvist 1995). People's perceptions about what elements make up a healthy life, and what makes household water safe and how they can prevent diseases, i.e. *the perceptions of health* become a critical starting point of this study.

Research confirms that Nigeria's situation regarding the availability of safe water and sanitation does not differ much from an international comparison of water and sanitation studies in Sub-Saharan countries and in the developing world (Katko 1991 and 1993; Lankinen et al. 1994; Hardoy et al. 1997; Varis & Somlyódy 1997; Hukka 1998; Varis 1999). The Global Water and Sanitation Assessment in 2000 showed that the percentage of people served with some form of improved water supply rose from 79 per cent to 82 per cent between 1990 and 2000. However, still one sixth of the world's population was without access to improved water supply and two-fifth lacked access to improved sanitation. The majority of these people live in the developing world. (WHO/UNICEF 2000b.)

In Nigeria, tropical climate, rivers and streams in the south-western part of the country, and the location near the seashore in Lagos, normally provide some water availability throughout the year, but the availability does not

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<sup>4</sup> In this study 'shantytown' is actually used as a synonym for a slum or a squatter settlement area, and hence distinguishes it from the term low-income housing area. This is done to indicate the very low level of housing and infrastructure in shantytowns. Many low-income housing areas may also belong to that group, but they may also have some amenities that are totally lacking in a shantytown. The term slum is normally used in a broad sense, encompassing squatter settlements, but excluding low-income areas. (Hardoy et al. 1997; Hesselberg 1997; see also Obudho & Mhlanga (1988).)

<sup>5</sup> Researchers in the field of environment and sociology have made a distinction between sociology of environmental issues and environmental sociology, in which the former tackles mainly issues of public attitudes towards environmental issues and the environmental movement, whereas the latter focuses more on the interaction between environmental and social phenomena (Dunlap et al. 2002).

<sup>6</sup> According to Lambert (1996) medical anthropology tackles issues of social and cultural dimensions of health, ill health and medicine. Here I refer particularly to the aspects of medical pluralism and applied anthropology, which aim at elucidating practical problems in the field of public health, such as environmental health is, and at identifying possible cultural barriers, issues of cultural sensitivity and the prospect of community development (Lambert 1996).

ensure the safety of water sources for human consumption, because access to water sources and the quality of water have been and still are very unstable. In the early 1980's, when the Water and Sanitation Decade (1980-1990) started, the Federal Department of Water Resources estimated about 20 per cent coverage of water supply, and about 5 per cent of sanitation in the rural areas in Nigeria. This was far from the national target of 80 per cent (Black 1990, 91).

Today, the situation of water supply and sanitation is much the same. Current figures show the median distribution of safe drinking water and sanitation in the whole country and a rough comparison between urban and rural areas. However, wide regional differences exist, e.g. the availability of safe water may be about 10 per cent in northern areas and sanitation facilities nearly non-existent in rural villages. In fact, the various surveys that have been used in the most recent reports all indicate that the situation has not really improved, but has rather remained at the same level, or even decreased<sup>7</sup>, as can be seen in the following table:

TABLE 1 Water and sanitation situation in Nigeria

	Drinking water		Sanitation	
	Urban	Rural	Urban	Rural
1990	83	37	69	44
2000	78	49	66	45

(WHO/UNICEF 2001)

Most of the household water is fetched from a variety of unstable, unprotected and dangerous water sources depending on seasonal variation, conditions of the water sources and household economy if water needs to be bought. There are many water-related diseases prevalent throughout the country, and besides diarrhoeal diseases, river blindness disease (onchocerciasis), guinea worm disease (dracunculiasis) and schistosomiasis (bilharzia) are common (Tsalikis 1993; WHO 1997), and are also prevalent in the study sites of this study.

It has been agreed that in order to involve the local dwellers in improving the water and sanitation facilities, there is a great need to study more in-depth the variety and modes of local understanding of water practices as well as the socio-cultural effects of different water-related diseases. This requires an in-depth analysis of socio-cultural information about how the local people perceive the state of environment and its health risk, and forms the focus of this study. How people understand the relationship between environment and health, and how they perceive their role in environmental health actions and

<sup>7</sup> The recent reports consist of Global Water Supply and Sanitation Assessment 2000; Nigeria, Demographic and Health Survey 1999, National Population Commission; and Multiple Indicator Cluster Survey 1999 (WHO/UNICEF 2001).

practices is of importance, as well as to discover the local resources that can be used to face the constraints and the solutions on a community level or in smaller units of groupings of the community members such as sub-communities. In this work I argue that it is the relationship between the rural and urban way of life, the system of dual residence and the strong ties to the Yoruba culture that all contribute to the conceptualisation of what makes up a safe environment in present Nigeria, and to the level of awareness of such constraints experienced in life by the local people.

### **Structure of the study**

In this chapter I have introduced the relevance of my study to the current debate on sustainable development, which international organisations have agreed forms a basis to promote more just environmental health situation at the local level as well as in the larger frames of development. What follows is a short introduction to sociological research on the concept of risk, and to the research tradition of water and sanitation research in developing countries and Nigeria. My research question and objectives of this study will be presented in Chapter 2, and the theoretical framework where this study operates. Central concepts relevant to the study will be outlined and discussed in the light of present development and modernisation discourse, however the scope of this study is beyond going into the critics of the modernisation theory *per se*<sup>8</sup>. The concepts discussed here include community participation, social reproduction and the cultural risk perception, and the question of local knowledge and hybridisation of culture.

In Chapter 3, I will offer some basic societal facts on Nigeria and the local government areas of the study sites. Public health care and the role of local government areas are discussed with an emphasis on environment and health issues. In Chapter 4, I will present some factors affecting the level of development in Nigeria, particularly the effects from the past World Bank funded Structural Adjustment Programme (SAP), and current trends in migration to big cities, particularly to Lagos. Also some characteristics of the contemporary Yoruba culture will be given to form a basis to discuss current modes of cultural hybridisation, for example, how rural and urban ways of lives are currently being intertwined together and new modes of cultural practices are being produced.

Chapter 5 presents the methodological settings of the study and Participatory Action research tradition and its rapid applications. The design of the research and the research settings from three fieldwork phases will be outlined. I will present the main results in Chapter 6, based on the objectives of the research project. These concern the current environmental health situation, particularly water supply and sanitation facilities, observations about local knowledge for detecting environmental health problems, particularly the

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<sup>8</sup> E.g. Järvelä et al. (2001) presents a short review of the criticisms of modernisation theory during the past decades.

perceptions of safe water, health and illness; and outcomes about testing rapid data collecting methods of the Participatory Action Research methodology. In Chapter 7, the results will be set to the risk cycle model and I will discuss the risk identification process in different phases of the cycle. In the concluding part (Chapter 8), notions of space, cultural hybridisation and the concept of risk will be discussed.

## 1.1 Sociological research on the concept of risk

Strydom (2002) provides an in-depth review of the level of knowledge about risk, environment and society on current risk discourse and present the evolution of risk research in four phases starting from the 1950's (Strydom 2002, 12), which is not possible to examine in-depth here. What is of relevance here is the complex relationship between local knowledge, environment and society – particularly the vulnerability of risk discourse depending on the sites taken: westernisation, modernisation or biotechnology. Boholm (1996) has also discussed the development of current scientific approaches to the concept of risk. According to her, early research was guided by an analytical distinction between 'objective risk' (defined according to statistical calculations of the probabilities of 'adverse' events), and 'perceived risk' (how people understood the likelihood of such adverse events) (Boholm 1996). For a long time, sociological qualitative research on risk-related matters was given little emphasis, even though risk analysts were aware that the most profound problems regarding risks associated with advances in science and technology were social in nature. Thus, the social and behavioural disciplines paid little attention to uncertainty and risk as being integral to the human condition. Instead, the focus was on particular hazards and their consequences and on putative causal conditions. As a result, risk as a social phenomenon was left relatively unnoticed (Short 1990).

A change occurred in the 1980's, when a new tendency to search for commonalities across problems and disciplines evolved, implemented by researchers such as Wildavsky (1988), Douglas & Wildavsky (1982), Douglas (1985), Jasanoff (1986), and Short (1990). Besides this sociological turn that evolved in the 1980s, cognitive psychologists showed convincing evidence of the sociological aspects of risk (Slovic et al. 1980). A number of studies measured ordinary people's perception of a wide range of hazards, and showed that when people reason and make decisions about hazards, they do so by paying attention to social context, tacit knowledge and the entitlement of ideas and actions.

In the early 1990's, sociologists such as Giddens (1990; 1991) and Beck (1992) addressed risk as a crucial feature of late modern society, with the central thought that modern society has entered a new phase in its historical development using concepts such as "information society" and "risk society".

According to them, industrial production and the market assume novel structural features emerging from the mobility of capital, people and technology over the globe, whereas traditional social relationships, groupings and identities erode with the progression of late modernity. Consequently, new concerns emerge that reframe the relationship between Man and environment, questioning the assumptions of industrial society regarding ecology and nature (see also Lash's et al. 1996). (Boholm 2003.) Particularly Beck's approach to risk has been one of the 'modern world', focusing on the industrialised and post-modern thinking of societal risks. According to him, in advanced modernity the production of wealth is systemically followed by the production of risk. Consequently, risk societies are no longer concerned exclusively with making nature useful, or with releasing mankind from traditional constraints, but more with "problems resulting from techno-economic development". (Beck 1992, 19.) These ideas of risk will occupy an interesting position when considering the concept of risk in the context of such a country as Nigeria, which is struggling between the continuum of a number of developmental problems and demands of economic growth towards an industrialised country.

According to Strydom (2002) today's risk discourse is dominated by biotechnology, but where themes of sustainable development, ecological modernisation versus reflective modernisation, and collective responsibility and ecological citizenship also emerge (Strydom 2002). The way people think about and respond to hazards depends on whether the hazards are forced upon them or are voluntarily undertaken, whether the hazards are known or unknown, controlled or beyond personal agency and influence, and whether they are understood to apply 'in general' or at an individual level. (Boholm 1996, 65.) Similarly, as Weidner (1991) points out, if changes in the environment or health status are attributed to sources other than pollution, such as witchcraft, taboos and local beliefs, or are known to result from pollution, but are perceived as less harmful than they are, hazard-related information will have little effect on disease or any other constraint prevention. Consequently, risk communication becomes critical in this process. Therefore, as Weidner argues, there is a need to study risk perception and communication in cultures which do not have such long-term experience in environmental hazards and which are in the process of developing concepts related to explaining the relationship between disease aetiologies and symptoms.

## **1.2 Sociological research on water and sanitation in developing countries and in Nigeria**

According to Amanor (1994) there are two conflicting paradigms connected to the present concept of environment that are relevant to the sociological research. The first is concerned with the limits that nature poses to *human growth*, a concept, which has been characterised by the term of an ecological

footstep or other commonly agreed measurement (Serres 1990; Dunlap & Michelson 2002), and is characterised by environmental determinism, Malthusianism and debates on population growth of the world. The second focuses on the potential of human labour to transform nature, and the capacity of people to create new systems in material production, which transcend contemporary economic constraints and environmental problems due to the economical situation. The latter approach sees the major economic and environmental constraints as emanating from the world capitalist system and the economic structures of the world commodity markets, which concerns also the worldwide globalisation debate (ref. Castells 1998; Väyrynen 1998). In addition to the economical perspective, the latter approach includes the extent to which local people can and will create new systems and rise to new occasions such as risks in changing their environmental situation, e.g. when faced with the growing pressure of waste management or an inadequate supply of water. (Amanor 1994.)

A fair amount of research has been undertaken to study the prevailing water supply and sanitation systems and the risks attached to it, about water-related diseases and their health implications in developing countries during recent decades. These were inspired at least partly by the United Nation's International Water Supply and Sanitation Decade (1980–1990) when serious attempts were undertaken to ease the water and sanitation situation in the world (Lindskog 1987; Black 1990; Weidner 1991; Drangert 1993; Kjellen et al. 1996; Pitts et al. 1996; Porter et al. 1997; WHO 1998; Watts 1998). As one example of a water and sanitation programme implemented as a part of the Water Decade, results of a project implemented in Bangladesh, India and Nigeria indicated five key stages for future programmes: 1) the identification of appropriated technology; 2) the building of capacity; 3) the transfer of technology; 4) the development of mechanisms for community participation; and 5) the growth of a consumer-driven service (Black 1990, 124–125.) A very important result of the programme was the increased emphasis on social and cultural factors related to water and sanitation problems (Vaa 1993; World Bank 1993), but also the urgent need to focus more on the gender issues and the roles of women and men in the water sector, community involvement in health education, and local management of water and sanitation issues to reduce the risks posed by contaminated water (e.g. Yacoob et al. 1989; Black 1990; Jordan & Wagner 1993; Green & Baden 1995; Akuoko-Asibey 1997).

Studies prior to the Water and Sanitation Decade in Nigeria were rather limited in number. In 1981, a group of environmental researchers (Jauro; Ogbole; and Saddio) published findings on the situation of water and sanitation sector in different parts of Nigeria. Jauro (1981) focused on Bauchi State, and particularly Gambi town, emphasising the inadequacy of environmental sanitation facilities pointing out the lack of cooperation from the general public, and how the situation at LGA level was difficult without any means to improve the situation. He emphasised the need to put the focus on the support at the LGA level. In Plateau State, Ogbole (1981) collected information on similar

harsh environmental health conditions. He provided a deeper look on the focal points in health policy reform and emphasised the need to focus more on a need-oriented, endogenous, self-reliant, ecologically sound and participating approach in decision-making. Saggio (1981) studied similar facilities in Kano city, pointing out equally the need for cooperation between local people to join hands with the government to provide health services and particularly, accurate health education to the local dwellers.

After the decade, a number of regional evaluations followed, including The Imo State Evaluation Team (1989), Huttly et al. (1990); Black (1990) and Sangodoyin (1993) highlighting the importance to improve water accessibility and availability rather than only focusing on water quality. Particularly, in the Imo State project, it was observed that sanitation had a greater impact on diarrhoea morbidity than water supply. Probably the increase in water supply provided some alternatives in otherwise very harsh conditions of everyday life.

In 1995, FOS/UNICEF (1995) conducted a country survey about the water and sanitation situation, which provided similar results of the availability of water presented in Table 1 (page 6). In the survey, nine out of every ten households indicated a distance of less than one kilometre from home to the source of drinking water. Women were mainly responsible (39 per cent) for fetching water, but in 23 per cent of the households it was mainly children (boys and girls), whereas in another 23 per cent it was men. These were mainly Muslim communities where women live in seclusion, as elsewhere in Nigeria it is not common that grown men normally participate in acquiring household water. Concerning sanitary facilities, 57 per cent of all households had satisfactory excreta disposal facilities, with a covered pit toilet as the most common type of toilet. About 27 per cent of all households reported that they did not have any toilet facilities at all, or used a ground hole in the nearby wasteland. There was a great difference between urban (82 per cent) and rural areas (48 per cent) of access to sanitary toilet facilities. Most of the toilets were located less than 50 metres away from the dwelling unit, but only one in eight toilets were located inside dwelling units. (FOS/UNICEF 1995, 7-8.)

UNICEF's (1995) survey on the Knowledge, Attitudes and Practices (KAP) of water supply and sanitation provided information on how rural communities perceived the prevailing situation and what kinds of constraints they considered the most alarming ones in water supply and sanitation. Communities involved in the survey came from Edo, Lagos and Oyo States in Nigeria. People ranked lack of potable water (40 per cent) as their major problem, followed by lack of electricity (20 per cent), poor condition of roads (19 per cent) and latrine facilities (10 per cent). When evaluating the quality of water, more than half of the respondents agreed that they have to consume contaminated water (52 per cent), and about 17 per cent of them complained of inadequacy of the water supply. Water sources were also considered to be too far and non-perennial. Good and potable water was recognised as being visually clear from any suspended matter, free from germs, odourless and sweet (normal) in taste. Similarly, perceptions of bad water referred to muddy



and dirty water, visible germs or particles found in the water, salty and bad taste, water used both by humans and animals, and other types of water usage (e.g. bathing, washing, home-based artefact production). The most common sanitation practices included regular sweeping of house and yard, proper disposal of waste, use of latrine, clean kitchen and disposal of solid waste. (UNICEF 1995.)

A similar line of results of the water and sanitation situation on rural and urban areas has been reported by a number of recent researchers, such as Iyun (2000) on the impact of water and sanitation on the situation of women and child mortality in two small rural Yoruba towns in south-western Nigeria. She found that the domestic environmental conditions were stronger predictors of child mortality in a more developed study town, Ota, than in a more traditional town, Iseyin. Her results showed a strong connection between waste management practices and disease transmission as well as how and where household water was fetched. Observations also revealed differences in understanding how to protect water being "safe" according to gender and social status. Moloye's (1996) study on rural water and sanitation practices from Nassarawa state (1996) found out that the pattern of household use clearly reflects the well-being of household members. For example, in a household with access to well water, healthy sanitation habits were more easily maintained compared to households without such an asset. Dabi et al. (1999) on water use in the production sector and domestic sector in northern Nigeria, found out that groundwater was a critical resource for rural villages, particularly in the semi-arid Sahel zone, which relies much on irrigation usage in the cultivation of vegetables and grains, as well as for household everyday needs for human consumption. Okojie (1994) studied environmental hazards and the health status of women and children in the Edo State of eastern Nigeria, particularly the interrelations between the environment and health status of women and children. Her results suggest that the bio-physical environment has a significant impact on the women's and children's health as well as their health care practices. Because of the geographical isolation of her study sites, women first utilised traditional therapies and methods and only later turned to modern health care facilities because they were very difficult to reach. Nyong's & Kanarogloy's (1999) results on domestic water use in semi-arid areas of north-eastern Nigeria, indicate that most households in their study area preferred to use water of poor quality that is to be found closer to their homes, rather than travelling long distances or spending extra time to obtain good quality water. Iyun & Oke (2000) emphasised the need to focus on culturally specific health education in their study about combining ecological and cultural aspects related to the treatment of diarrhoea. Mothers involved in their study did not actually understand the reasons and practices of how to treat diarrhoea, instead they were misusing sugar and salt solution (SSS) or oral rehydration therapy (ORT), both methods commonly used for treating children with diarrhoea. Results showed that the health education received by health personnel had not really

been paying attention to the needs of the local people, but merely leaving them in confusion and with a lack of proper guidance.

Urban research has mainly focused on Lagos or other major cities because the rural nature of small Yoruba towns (ref. Eades 1980). Sridhar's (2000) recent findings on the quality of ground water in several cities (Lagos, Warri, Benin, Aba, Kano and Jos) indicated that the quality of waters was far below the WHO recommended levels for some of the quality parameters, e.g. nitrate, lead and *Coliform Bacillus* and some had higher levels of iron with low pH values. Other studies focusing on similar constraints in water and sanitation situation in Lagos include Aina (1990) and Aina et al. (1994), Nwangwu (1998); and Olanrewaju (2001). Studies focused on Ibadan (Enabor et al. 1998; Adelekan 2001), and Kaduna, Umuahia and Ibadan (Uduku 1994) in Nigeria have each pointed out the need of participation and community development, and have also highlighted the characteristic problems of urban agglomerations, extensity of popular density and lack of basic infrastructure, as well as constraints faced when relying on commercial water vendors.

River blindness disease constitutes a major public health problem in rural Nigeria, causing blindness and skin infections due to infection from a black fly carrying the microbe. It is common in riverine areas, and breeds in the flowing water. Studies on river blindness disease have focused on local knowledge about the disease by Awolola et al. (2000) in south-western Nigeria, on the relationship between gender and people's perceptions of the stigma of onchocercal skin disease (a type of river blindness disease) by Brieger et al. (1998) and Vlassoff et al. (2000), and on the effects of this disease on peasant farmers by Oladepo et al. (1997). Onwujekwe et al. (2002) focused on community-directed treatment programmes and the outcomes of such an approach in Ivermectin<sup>9</sup> distribution strategies and communities' capacity to handle the programme in the long-term. Results from two south-east towns of Nigeria show that there is a need for long-term technical as well as emotional support in the communities and they highlight the significance of cooperation of governments and sponsors with the local communities. Continuity is considered important because the communities need to be reminded of the benefits of long-term treatment and prevention of the disease. Akogun's et al. (2000) results on community-perceived benefits of Ivermectin treatment in north-eastern Nigeria, showed that the lack of the local government's coordination and distribution of Ivermectin leads to major and long-term problems in communities. In the studied communities only about 27 per cent of the interviewed persons had received treatment, and reasons for non-treatment were mainly due to the under-estimation of the district's Ivermectin needs by the health officials. Those benefited listed worm expulsion, blindness prevention as well as an increase in vitality and sexual performance as major positive outcomes. The relief from a heavy and long lasting burden of worms increased appetite and general health. It even led to an animating experience in

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<sup>9</sup> Ivermectin is a medicine used to treat and prevent river blindness disease (Onwujekwe et al. 2002).

many communities, which may sometimes connect the spiritual healing practices to particular diseases, becoming a challenge to health planners and for long-term community programmes. (Akogun et al. 2000.)

Guinea worm disease is a disabling water-borne helminthic disease caused by drinking contaminated water from ponds and streams. The worms cause a swelling in the skin leading even to permanent disability and incapacitation. It has been a major water-related disease in Sub-Saharan Africa, causing much morbidity in West Africa and Nigeria, particularly in rural areas (Watts et al. 1989; Brieger et al. 1991; Watts 1994; Bierlich 1995; Watts 1998). Based on their results, Brieger et al (1991) pointed out that a multi-strategy approach was required, in order to account for differences in geographical settlement patterns, local culture and beliefs, geology as well as economy and the political clout of the local leaders. Studies on the support for rural communities, such as sanitary wells (Akinsola 1995; Hunter 1997) show that the involvement of communities requires long-term commitment and recognition of the immediate benefits of adapting new methods of water treatments. The meaning of local knowledge and involvement of key persons of the community is most important, as was shown in Brieger & Kendall's (1996) study of the suitability of the Yoruba market as a communication channel in guinea worm disease surveillance. Their results support the idea of utilising these local institutions more in the health education and primary health care programmes as they form a natural arena for communication and exchange of ideas of both 'scientific' and 'lay knowledge'. (Brieger & Kendall 1996.)

Schistosomiasis (bilharzias) has a considerable effect on farming and rural wealth because of the inflammatory and visual effects causing blood in urine, weakness, diarrhoea, nausea, loss of weight, and difficulty in urinating and liver and spleen enlargement. It is caused by skin contact with polluted water from ponds or streams. It is common among the riverine farmers and the infection also causes a socio-economic "shadow effect", where a person has to switch from his or her customary activity to another one because of the loss of farming activities and reduction in income. (Umeh et al. 2001). Uchoa's et al. (2000) results of local identification of infection symptoms and involvement of treatment in selected Brazilian communities pointed out that people tended to distinguish between minor symptoms and associated them with water contact. The severity of the perceived symptoms related to the attribution of the lack of medical treatment, referring to quite similar findings presented by Robert et al. (1989) from Cameroon.

The presented research emphasises the growing need to understand the existing patterns of water use and the socio-demographic and cultural factors that influence such patterns. Researchers have argued that at least 25 per cent of rural water projects fail, since they do not take into consideration the cultural and social inclinations towards water use of the local populations (c.f. Nyong & Kanaroglou 1999). For example, the water planners may assume that households and other social groups in rural communities will change their habits of interaction to take advantage of the new, and presumably improved,

water supply immediately after the new facilities have been constructed. However, they may fail to recognise that such a resource will not be used optimally, if the supply system does not conform to the existing norms of the social groups. Other factors include religion, ethnicity, cultural belief systems<sup>10</sup> and practices including attitudes, behavioural patterns and the relationship between community and individuality approaches to issues of health and illness as well as the relationship between scientific and local knowledge and the prospective of utilising information and resources.

Falkenmark & Lundqvist (1995) present *water rights* as one of the major challenges in efforts to improve water resource management. The issue of water rights is evidently one of the very basic questions, including moral connotations to primary issues of human rights and basic human needs. However, rights come with the responsibility of maintaining and preserving the quality of water sources and equality of the availability. Therefore, as Falkenmark & Lundqvist argue, respect for water's life-giving qualities becomes a basic precondition in efforts to also achieve sustainable development. (Falkenmark & Lundqvist 1995.)

Often people regard water issues as being at the top of their priorities when asked about their needs of prospective developmental objects in their village (e.g. Chauhan 1983, 52; Emah 1995; FOS/UNICEF 1995). Usually the first thing people would express is a need for good water. After that come other needs such as constructed latrines, refuse disposal, housing improvements and a steady supply of electricity. On the other hand, as was already pointed out by Nyong & Kanaroglou (1999), people involved in their research preferred to use water of poor quality, if it would save them time and energy than to obtain good quality water. This is quite obvious with limited time and other resources but there might also be other priorities than clean water for everyday management beside the practical limitations. Could this be linked with the idea of 'the order of things' and local knowledge determining the relationship between water and health, or are there other criteria that matter more? As the presented research show, the area of water and sanitation is a controversial and complex field of study, where it is very difficult to foresee the focal points of the local communities.

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<sup>10</sup> Mary B. Black presents an extensive review of different definitions given to belief systems (1973), in which beliefs and knowledge systems of different cultures are perceived as equally applicable terms.

## 2 THEORETICAL FRAMEWORK OF THE STUDY

### 2.1 Research questions

The main question of the study is *how the local communities perceive their state of environment*, particularly the water and sanitation situation and *how do they define a risk concept* related to the environmental health situation. Furthermore, it is examined *who are the actors* on a communal level and *how can they operate* with the institutional actors, such as the local government agencies in order to promote environmental health.

### 2.2 Research objectives

This study examines the process of formulating perceptions of environmental health risks from the community's viewpoint. It is assumed that by understanding more about the process of *the local risk perception*, it may be possible to find tools for strengthening the knowledge basis of environmental health in the particular communities and, maybe even in the more general developmental debate. According to Lieban (1973), health and disease are measures of the effectiveness with which human groups, combining biological and cultural resources, adapt to their environments. Because health and disease are strongly related to cultural as well as biological factors (Lieban 1973, 1031), this also underlies the convergence of medical anthropological interests to focus on *perceptions* of a healthy environment.

The research objectives have been defined based on the knowledge of the multitude of environmental and health problems in the water and sanitation sector in Nigeria. In addition to the economic, political and social factors affecting the availability of water and sanitation facilities, earlier studies have shown that there are cultural perceptions that define how people deal with

household water management and how the sanitation practices and waste handling are managed as presented in the previous chapter.

The specific objectives of the study are:

- To describe the environmental health situation at the community level in the Ile-Ife, Osun State, particularly *Abagbooro*, *Oke-Ake* and *Elefon* villages (Ife Central LGA) and *Ifewara* town (Atakumosa West LGA), and in *Amukoko shantytown* of the metropolitan Lagos (Ajeromi/ Ifelodun LGA)
- To study local knowledge, especially the practices and tools, as well as beliefs and taboos defining environmental health problems, especially those concerning water and sanitation facilities
- To analyse how perceptions of safe water, health and illness vary between professional, popular and traditional medical systems, especially concerning water-related health problems
- To test various PAR (Participatory Action Research) methods by collecting comparative information on the prevailing culture of the communities concerned in rural and urban areas

I argue that highlighting the perceptions, needs and values of the local people in their everyday life is an essential part of communities' resources for modernisation and development, and a step towards a balanced sustainable development. Furthermore, the role of the local government becomes critical. In order to achieve more sustainable practices and services in the water and sanitation sector it is important to include both social innovations and the needs of all partners at different levels in the process. Earlier studies in this field have confirmed that this is the interest of most people who have realised the growing demand of environmental health predicaments, because problems in managing the water cycle also increase problems in development. As result, the more consequential water cycle management problems grow, the more these problems become a growing risk to the aimed development process and, later on, to balanced modernisation. (Järvelä et al. 2001, 27–28.)

### 2.3 The study as a part of the research project HEPECO

In the beginning, it was the research network ENHICA<sup>11</sup> (Environment, Health, and Information Activities for Communities in Africa) that offered me the starting entry to West African studies in Finland. During the first year of the ENHICA pilot phase in 1996, I conducted a pilot study together with other

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<sup>11</sup> ENHICA research network has been a joint programme of the Universities of Jyväskylä and Kuopio, in Finland, and Lagos State University, Obafemi Awolowo University, Ile-Ife, in Nigeria and University of Cape Coast, in Ghana. The project received Academy of Finland funding for the years 1995–1996.

ENHICA researchers from Finland, Nigeria and Ghana at some coastal fishing communities in the Lagos State, Nigeria. The objectives of this study have been based on the outcomes of this pilot exercise and its results are mainly presented in the first article of this study.

This study has been a part of a research project '*Environmental Health: Perceptions of Healthy and Health Care Services in a Nigerian Community*' (HEPECO<sup>12</sup>), The main objective of the HEPECO project has been to strengthen *the knowledge basis* of the environmental health services in West African rural and urban communities, and to develop sustainable practices of everyday life management in the communities involved in the project and in the larger frames of development. The aim is to promote cultural consciousness of various stakeholders operating in the sector of water and sanitation, and those who are involved in regulating the use of the natural resources at the community level (Järvelä et al. 2001). Furthermore, the research network ENHICA has provided background for supervision and special expertise. The INDEHELA-Methods<sup>13</sup> project of the ENHICA network was implemented simultaneously with the HEPECO project in Ile-Ife and Lagos, and was operated in parallel, in sharing common fieldwork periods and reflecting common experiences in West Africa.

The study benefits from a broad understanding of conceptualising on professional expertise, which is based on the results of the earlier works of the research network ENHICA (see Järvelä et al. 2001). This conceptualisation refers in this study to 'Western' professionals as well as 'indigenous' professionals of the local people specialised in environmental health (c.f. Wynne 1996). The experts' specialisation range from water delivery systems, sanitation and wastewater management practices to health care services of modern and traditional delivery. The identified key elements of a community include the way of life, culture, composition, organisation and needs as well as strengths and weaknesses, shared in the communal life of the particular community. Starting in 1996, the research network ENHICA outlined a general model (Figure 1) that describes the complexity of the social role performed by experts in the community. This positioning of the experts' role aims at clarifying both essential social relations and the cultural perception of the physical environment.

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<sup>12</sup> The project was co-ordinated by the Universities of Jyväskylä and Kuopio in Finland and Obafemi Awolowo University, Ile-Ife, Nigeria and funded by the Academy of Finland for three years (1997–2000). Additional funding has been received from independent research foundations in Finland and from the Nordic Africa Institute, Sweden.

<sup>13</sup> Methods for Informatics Development for Health in Africa.

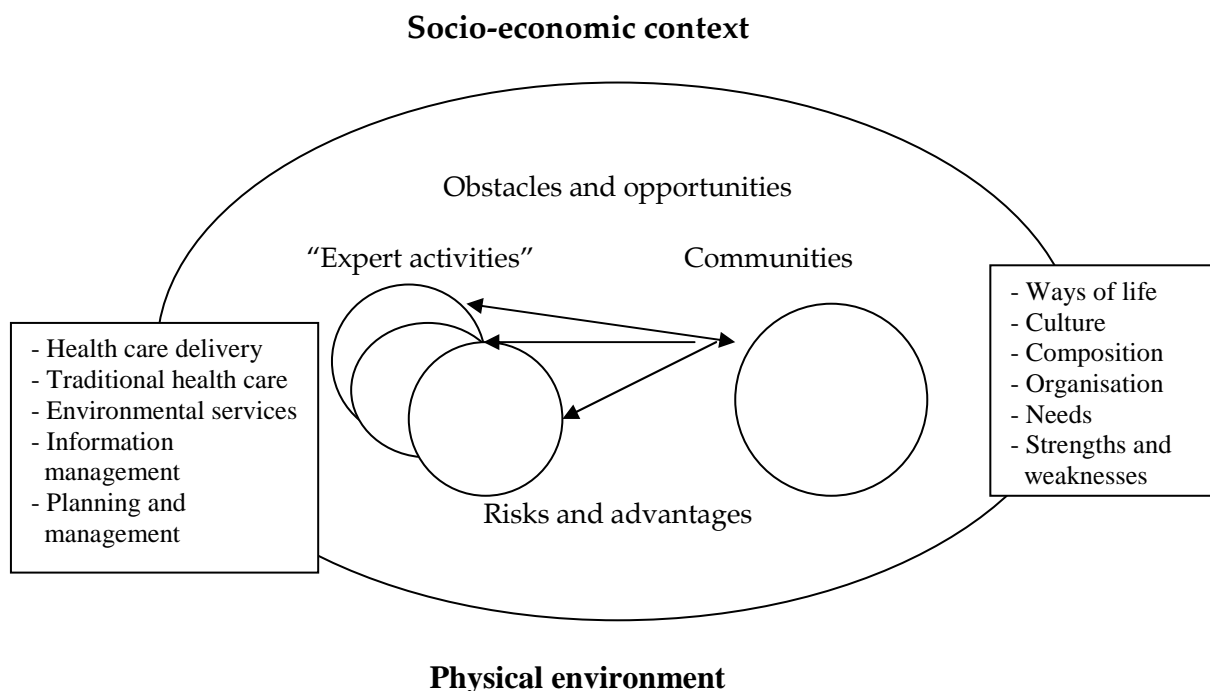


FIGURE 2 The framework of the study and the ENHICA research network (Järvelä et al. 2001, 8)

As presented in the above figure, both the expert activities initiated by outside stakeholders as well as local practitioners are regarded as social resources that may operate for the mutual benefit of a community (Järvelä et al. 2001). In practice, however, all the actors face not only opportunities, but also obstacles. Therefore, in this study, these two central 'activity centres', experts and local community, will be perceived from the point of view of obstacles and opportunities as well as risks and advantages within the given premises of socio-economic and physical environments.

### The concept of community

The concept of *community* has been one of the widest and most frequently used in social sciences and its examination has been a focus of attention for the last centuries (Rapport 1996). The concept can be defined by various factors, such as geography, culture and ethnic background, religion, gender and profession – depending on the context and the viewpoint of the researcher. In the late 1940's, Robert Redfield identified four key qualities that a community possesses: a smallness in social scale; a homogeneity of activities and states of mind of members; a consciousness of distinctiveness; and a self-sufficiency across a broad range of needs and through time (c.f. Rapport 1996). However, it is evident that the concept cuts across and incorporates class as an additional basis for determining what people share, together with ties of kinship, neighbourhood, work, and normally refers to a group of people defined as a unit based on shared criteria of unity. Often community is identified as synonymous with the concept of a village, especially when thinking about



small-scale, physically side by side located household units sharing some form of administration or governance, such as a village head. (Good 1987; Lehtonen 1990; Lieber 1990; Sadiku 1996.)

According to Graham Tipple (1994), a dwelling is the most useful definition for a household unit, whereas a compound is a more broad definition, forming in fact the basic criteria, for example, for a community. Among the Yoruba, a compound normally contains several dwellings occupied by many separate families or households, who follow a familiar lineage, livelihood, or other common elements. (Fadipe 1991; 1994.) This study benefits from the general definition of a housing unit in West Africa, covering different modes of a house, a dwelling and a compound. In this study, I use living conditions as a primary definition for a community but also take into account various forms of *sub-communities*, defined by, e.g. gender, age, and profession among the Yoruba.

## 2.4 Community development risk cycle

This study benefits from Mary Douglas's theory of risks as a result of cultural and social negotiation process (1985), because my interest is in the process of the formulation of the environmental health risk concept on a community level. To respond to the need, I will use a community development risk cycle (Figure 2). My aim in using the model is based on an ambition to redevelop the model to become more applicable to different stages of research and within different research contexts. Furthermore, my interest has been in applying it in action research ethnography<sup>14</sup>.

The cyclic model presents how communities and individuals can become aware of and reduce their environmental risk levels, and it proposes possibilities for a change of actions based on the idea of reproduction. The reproductive cycle of risk was originally defined by the ENHICA research team, and it is based on Lars Clausen's (1989) catastrophic cycle. Clausen aimed to analyse the changes of social reproduction, such as a division of labour, with the logic of a community 'disaster cycle', transforming essentially the local social order. Another inspirer has been Edgar Morin (Morin & Kern 1993) whose idea of a system as a continuing process of causality seems to fit into the model. He pointed out that a social phenomenon can be seen as a cyclic chain of causality. Moreover, one of Clausen's central ideas was to study even eventual

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<sup>14</sup> Within the ENHICA network, we have named this approach as an action research ethnography (ARETNO) This is a methodological strategy aiming at integrated ethnographic research on field with accruing sustainability program policy relevance. ARETNO tries to bring about a reconciliation between realism and social constructionism by observing closely every day life in action, in the pursuit of livelihood and in cultural tradition and meaning. ARETNO is essentially a qualitative strategy based on dialogical inquiries; yet, multiple documentary material is collected including statistics to replace local case studies into a general framework of global and regional embeddedness. (Järvelä et al. 2003.)

short cuts and returns between 'stopped phases' of the causal chain of action. In this study the cyclic social transformation model is applied with the aim of interpreting theoretically community risk perception and community action to reduce risk. According to the ENHICA model, any critical stage between the different phases of the risk cycle can become even more relevant than originally assumed in the beginning of the risk cycle. My study follows the original stream of causality of phases, as the formulation of a risk perception seems to be developed according to the natural cyclic process. However, in order to create a fruitful situation for negotiation between different stakeholders, a return to an earlier stage might become necessary before there is a possibility to progress to the next stage of action, leading even to spiralling forms when there are many risk levels perceived. In addition, each step of the development can be evaluated by methods of participatory action research. (See HEPECO 1997; Järvelä et al. 2001; Rinne 2002.)

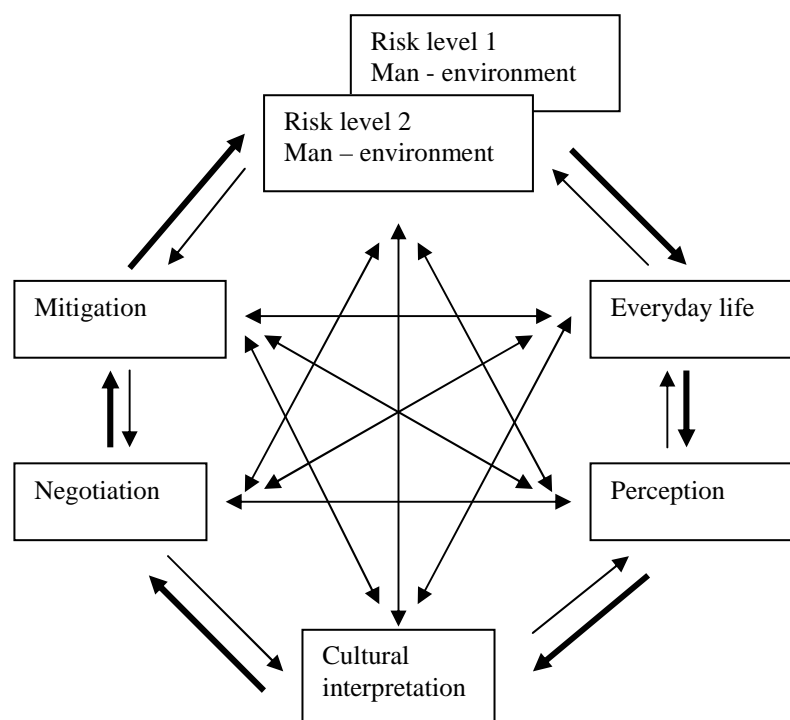


FIGURE 3 Community development risk cycle (modified from Järvelä et al. 2001, 26)

The sequences of the risk cycle are:

1. Original risk level of the relationship between man and environment
2. Everyday life
3. Perception
4. Cultural interpretation
5. Negotiation
6. Mitigation
7. A new risk level of the relationship between man and environment

According to the model, each sequence of the whole course of the reproductive cycle (Risk Level<sub>1</sub> → Everyday life → Perception → Cultural Interpretation → Negotiation → Mitigation → Risk Level<sub>2</sub>) results in a reformed state of the environment (RL<sub>1</sub>, RL<sub>2</sub>, RL<sub>3</sub>,...). The reformed new state RL<sub>x</sub> can be considered and assessed again as an initial stage for the next course of the cycle. The intervention by particular outside actors (such as experts and researchers) is of primary importance when starting a dialogue with the local community. Yet, according to the model the capacities for self-correction by the community should be increased during each course of the cycle. Consequently, the intervention of external experts will be, in due course, less necessary in developing new sustainable practices. (HEPECO 1997; Järvelä et al. 2001; Rinne 2002.)

Experiences from the ENHICA research network prove that the model has been considered applicable when studying the relationships between man and environment, as well as the community development process, as in the particular case of Nigeria. Anja Tuomisto (2001) argues that man's relationship to the environment plays a crucial part in constructing local culture because the meanings of environment are a part of the prevailing tradition and locality itself. Thus, it is by creating local culture that the relationship between man and environment is mutually created and maintained. (Tuomisto 2001.) Tim Ingold (2000) goes much deeper in considering the perceptual relativism and how nature really works. He defines environment as a relative term, defined by whose it is, and who it refers to, as it is never a complete entity but can be perceived as being continually under construction. In addition, the concept should not be confused with the concept of nature. Thus, the distinction between environment and nature corresponds to the difference in perspectives between seeing ourselves as being *within* a world and as being *without* it. (Ingold 2000, 20.)

However, there may be different kinds of meanings given to local culture, but maybe what is most common in this connection can be defined as *learned behaviour*, which refers to skills and habits acquired by a human being as a member of a society or a cultural group. The local culture supports the maintenance of a harmonious relationship between man and the surrounding environment consisting of physical, biological and social environments. (Omambia 1990, 129.)

### **The sequences of the risk cycle of this study**

The starting point of my study is the risk concept of environmental health and the relationship between the concept of risk and the environment. It can be assumed that perception of a risk and risk level is dependent on the prevailing relationship between man and environment. There are cultural as well as social and economic factors that determine the relationship, e.g. due to the type of livelihood and ways of life of the particular community or society. A central question at this point is how individuals and the community perceive its living environment, i.e. is the environment considered as static or varying in nature.

Beginning with the everyday level, the concept of risk needs to be evaluated by a) patterns of livelihood, b) modes of reproduction, and c) cultural context. Individuals, families and communities formulate a perception of a risk and they will further a) define harmful effects, b) define the causes, and c) define the mode(s) of cultural protection. In the phase of cultural interpretation, the identified causes of harms and risks are processes on the level of collective consciousness by the same criteria than in the second phase of formulating the perception of a risk. In the negotiation phase, these definitions of possible risk causes have to be determined before any negotiation process can be launched. Equally important is to identify the prospective partners in the negotiation process. Who has actually the right to take part, and who are excluded, or are there different groups at different stages involved in the negotiation process. It can be assumed that there is a variety of different stakeholders of the negotiation process, including local key persons (men and women), outside experts and institutions among many others. In addition, there are regulations, strategies of intervention and a variety of definitions of risks, which form the key factors in the process. At the final phase of the mitigation level, actions of development process will be launched. In addition, there is the possibility to form a priority of actions, set new aims for the next stage of the risk level, as well as launch new projects. Finally, at the end of the cycle, a new risk level has been achieved, which preferably will be lower than the former one. (HEPECO 1997; Rinne 2002.)

## 2.5 Development and modernisation

Since the early years of developmental discussion in the 1960s, there have been a lot of arguments among the development researchers and practitioners of what development actually consists of. Hugo Slim (1996) emphasises that genuine development is much more than a matter of economics and economic growth, and that development is a universal goal for *all* societies, not only a matter concerning the Third World countries. Furthermore, development depends on equal interaction between different groups and different nations. Therefore, the heart of the struggle for development is the struggle between relationships of different stakeholders, actors and operators in development work. (Slim 1996.)

As many studies have shown, modernisation and development have an ambiguous correlation of promoting well-being and prosperity in developing countries (Sonntag 1994; Kuvaja-Puumalainen 1995). Marshall Aid, the first of its kind for a development policy, was formulated after the Second World War creating the basis for the next generations' development policies (Järvelä & Kuvaja 2001). In the 1970's, a group of development experts tried to set a new agenda of 'alternative development', because of the experienced failure of the past decades. A basic distinction between priorities relating to the 'inner limits'

and 'outer limits' was defined. The inner limits were said to cover 'fundamental human needs' such as food, shelter, health and human rights. The outer limits related to aspects of 'the planet's physical integrity' such as the environment and population. (Slim 1996.) Since then, development has become closely related to modernisation of all society including economic, social and political structures. Economic growth became the most constituent factor in attempts to become more developed, and further modernised. It has been the major tool in attempts to narrow the gap between developed and underdeveloped countries, e.g. by strengthening the industrial sectors and export incomes of developing countries. One of the most comprehensive policies to modernise the structure of the economics in the developing countries has been the Structural Adjustment Programmes (SAPs), implemented during the 1980s, particularly in the Sub-Saharan countries (e.g. Husain 1994; Olukoshi & Wohlgemuth 1995; Olukoshi 1996; Olukoshi & Laakso 1996). Concerning the case of Nigeria, criticisms against SAP have been heavy due to bad experiences of the deterioration of Nigeria's economy, setbacks in public services and an increase in living costs (e.g. Vickers 1991; Egwu 1998; Jega 2000).

Development is always about change, preferably about improvements and towards a change for the better, but also about continuity. If any change is to take root, it must always have something in common with the community or society in question, by making sense to the people and being in line with their values and their capacity. It should also be culturally, socially, economically, technologically and environmentally appropriate for the community. (Slim 1996, 63.) As was agreed in the ENHICA research team, modernisation and development are both societal change processes, but they have to be separated analytically (Järvelä et al. 2001). This is because modernisation theory is not a theory about the development, but about the logic behind the societal changes (Uurtimo 1994; see also Sonntag 1994). Considered as such, it does not take sides in evaluating the nature of societal changes. It represents change, which can be either positive or negative. Therefore, societal change exists in every society, but its nature varies according to the outcome of the change, i.e. the situation of the society. (Rostow 1960; Järvelä et al. 2001, 20.)

Secondly, the concept of development is more normative (Myrdal 1963; Forbes 1984; Elliott 1998; Lafferty 1996). It always includes the notion of a positive economical and social change even though the emphasis of critical factors for development has changed depending on the decade. Since the heavy emphasis on Structural Adjustment Programmes and macro-economical measures, the focus of development activities has turned more towards communities, and the communities have now been seen as central actors who define the contents of development. (Escobar 1995; Järvelä et al. 2001.) Today, the role of community is quite widely recognised at each level of development and attempts have been made to minimise the roles of outside actors in development actions.

Recognising these various elements in development has clearly indicated that ultimately there is more to contribute to human development than economic development. Real human development concerns factors that relate to the quality of change in people's lives as well as to the quantity of change (Slim 1996). These two aspects should be taken equally seriously and as John Clarke has suggested (1991) development is a process of change that enables people to take charge of their destinies and realise their full potential. It requires building up in people the confidence, skills, assets and freedoms necessary to achieve this goal. (Slim 1996, 65, c.f. Clarke 1991.)

In the ENHICA network, we have agreed that development should always involve an active part put forth by the local culture. In development projects, the main challenge but also the most disregarded aspect has been to find elements of local traditions that can be applied as driving forces of development. Consequently, perceiving elements of local tradition as a part of social resources for development is a matter inherent to the essence of human nature and a primary precondition for all developmental action from the point of view of sustainable development (Järvelä et al. 2001.)

### **2.5.1 Community participation**

Participation has become a key word in international development discourse. However, there have been a variety of meanings in use, depending on which objective the term has been employed for: political administration, paradigm for different technological processes, or as a concept in examining policy and institutional frameworks for developmental co-operation (Amanor 1994, 13). Participatory development implies to development, which involves all people, especially those whose basic needs and aspirations are affected by the decisions concerning the availability of resources and entitlement to such needs (Anacleto 1996, 71).

Odhiambo Anacleto (1996) starts his article about participatory development and local culture by raising the question, when have people in Africa actually been asked what kind of development they want and how they want it to be implemented. The Africans have merely been the *objects* of various models, though these have rarely increased their supplies of basic infrastructure or improved their well-being or status of health. He argues that if a more equitable order is to be realised, attitudes towards local people need to undergo radical changes. The needs of rural people, who still form the majority of African dwellers, as well as the urban poor, especially those living in peri-urban areas or in the fringes of urban shantytowns and low-income housing areas, are at the centre of this change. This sector must be recognised as having a dynamics of its own and a concept of the use of development. Many of those people have always been engaged in some kind of exchange of material goods and ideas with the outside, giving them a perception of the merits and demerits of such an exchange. Therefore, such perceptions do not depend on how the world is perceived and how the concept of development is defined – but

instead on how those concepts actually affect them, generally and locally. (Anacleiti 1996.)

Participation in development work evolved already in the late 1960's, but at first it was given a limited role in developmental projects. During the 1970's, large-scale development projects were launched, which were many times overly extensive attempts to achieve real development. Instead, they sometimes alienated local people from developmental initiatives and even caused set backs in political, social and economical development. During the 1980's, community participation developed in relation to decentralisation of the nation and its apparatus associated with the crisis of the country and the need to cut public sector investments with the uptake of Structural Adjustment Programmes. The new approach entailed shifting the burden of the provision of the basic infrastructure from the nation to the local communities. From this point of view, participation of local communities was limited to the provision of labour for specific projects. Some have even argued that it only followed the old pattern of the colonial conceptions of forced or communal labour instead of real participation. Examples from some African countries indicate that sometimes the local chiefs experienced a new resurgence by enforcing local participation in public works programmes. Their status was thus enforced and the possibilities for local dwellers to influence actions did not actually change. (Amanor 1994, 13–14.)

Today, community is much seen as a central actor and potential resource that can define the contents of development, and thus forms a natural starting point in attempts to increase sustainable development. This approach emphasises the role of local actors in the development process, referring to local communities and local government agencies, which actually play a pivotal role in promoting or discouraging self-help or communal actions for common benefit (Hay et al. 1990). However, ideas of local institutions are sometimes based on problematic notions of community; as in participatory approaches to development, the 'community' is often seen as a 'natural' social entity characterised by relations of solidarity and, therefore it is assumed that these can be represented and channelled in simple organisational terms (Clever 2001, 44). According to Cleaver (2001), there is a need to be aware of this limitation: it is actually very rarely in development that there is one identifiable community in any location and that there is co-terminosity between natural (resource), social and administrative boundaries. Furthermore, participatory approaches stress solidarity within communities; processes of conflict and negotiation, inclusion and exclusion are occasionally acknowledged but little investigated. The 'solidarity' models of community, upon which much development interest is based, may acknowledge social stratification, but also assume some underlying commonality of interest at the same time. (Clever 2001, 44-45.) As a recognition of this limitation, I have used the term sub-community in order to pay attention to the social stratification within a community in question. In the community development risk cycle model also the stages of negotiation and mitigation aim to recognise the particular need of

not only seeing the whole community as such, but paying attention to inner differences and tension between community members and different sub-communities.

Egwu (1996) suggests that community participation should be understood as an organised means of empowering the community and developing collective capacity for management and implementation. Anacleiti (1996) emphasises the meaning of a process in all developmental action. According to this, people will avail themselves of an opportunity to upgrade their way of life, moving from mere strategies for survival to challenge the physical and social environment in which they find themselves. The process enables them to become aware of and to analyse the constraints to which they are subject. In addition, the process gives them access to resources required for removing such constraints, and which acknowledges their right to plan and control their present and future changes for development. (Anacleiti 1996, 69–70.)

A trend in recent decades has emphasised participatory approaches to development as a tool to enable those individuals and groups previously excluded by more top-down planning processes, and who are often marginalised by their separation and isolation from the production of knowledge and the formulation of policies and practices, to be included in decisions that affect their lives. Arguments that have supported this trend include a notion that development policies and practices based on research with intended beneficiaries of development are more likely to meet the interests and needs of primary stakeholders, and that those development interventions based on local knowledge and experience are more likely to be more focused on the needs of the people, promote sustainability, but also encourage the process of empowerment. (Kothari 2001.)

However, as Kothari (2001) points out, there have been numerous critics towards populist participatory approaches, either focusing on technical limitation of such an approach or, paying attention to the theoretical and conceptual limitations of participation. As participatory research aims at knowing particular kinds of subjects, careful attention has to be paid to the validity of the data collected and how well does it represent 'true' local knowledge. Acquiring 'true' knowledge and empowering participants through their involvement of the process has often led to the overwhelming adoption of participatory techniques within development policy and practice. The dichotomies used in this connection include oppositions such as 'uppers' and 'lowers', north and south, professional knowledge and local knowledge, etc., which are continuously evoked and rehearsed as popular slogans or participation and empowerment and even attached to moral connotations between 'good' and 'bad' approaches. These dichotomies actually will even strengthen the assumption that people who wield power are located at institutional centres, while those who are subjugated and subjected to power are to be found at the local or regional level – thus limiting the ultimate aim of participation. (Kothari 2002, 140.)



In his study on the Nigerian health care system, Egwu (1996) formulated a Social Action Model of Community Involvement in order to study the prospect of community participation and involvement at the community level. According to his model, in order to increase community development, e.g. in the health care sector, there is a starting point at the level of *awareness*, leading to *understanding* the change of action and the perceived benefits of a programme. This produces *motivation*, which further facilitates *mobilisation* as a sub-process of articulating the internal mechanisms or properties such as socio-cultural factors. This enables community members to act collectively as a unit, before they will put their material and social resources together for a collective action. (Egwu 1996.)

Following his model, Egwu (1996, 161) argues that in 'traditional' as well as in other societies following different patterns of action than the Western ones, cultural influences such as mutuality, self-help and kinship are activated by culturally and socially in-built '*internalisation*' processes. Through an indirect channel, these factors interact to produce community involvement, e.g. in health and community development programmes. Consequently, internalisation is a part of the internal mechanisms that brings continuity to the community and even to the society. As a result, continuity becomes a critical factor differentiating also former stages of participation from the final stage. This means '*involvement*', and represents the ultimate stage of a societal development change process.

The relevance of this kind of model in comparison of the community risk cycle model is that it emphasises the religious factors in the process of social action. Concerning the particular case of Nigeria and the Yoruba, this aspect is very important as religion forms one of the key elements in the societies' life, and in attempts to achieve better health and well-being. As Egwu (1996) points out, many Nigerian communities have actually demonstrated this in-built or internalised process of transformation in the various forms of participation and self-help groups in the communities' life.

Experiences from the field level, particularly health workers and households from south-eastern Nigeria with reference to the Bamako Initiative (BI) programme (a strategy to strengthen primary health care, launched in 1988), show key areas in enhancing community participation. The findings of one study (Uzochukwu et al. in press) reveal that the communities were not involved in core areas of community participation, and that the health workers seemed to resist their participation fully even though in general, community participation had increased since the launching of BI. Identified problem areas included co-management of user fees and drug-revolving funds, and decision-making on health matters. Most of the problems were connected to financial issues, or recruitment and motivation of health workers, as well as non-participation for religious, political and other reasons. Results imply that the adoption of community participation had not changed the traditional order on financial management. On the other hand, community members opined that by participating in identifying their needs and decision making on health matters,

community mobilisation, health education and environmental sanitation, they could contribute in the BI programme, as they really felt they could do something to improve health care in the community for their own and future benefit. (Uzochukwu et al. in press.)

### **2.5.2 Social reproduction and the perception of risks**

According to Cecile Jackson (1997), the concept of reproduction captures the combination of structure and action of human life, and therefore has multiple levels and meanings. She identifies three dimensions of reproduction: biological, daily reproduction and social reproduction. Biological reproduction refers to the process of child-bearing and rearing; daily reproduction to the maintenance of the domestic group such as water collection, sanitation practices and food; and social reproduction which involves a range of wider processes whereby societies are reproduced such as the formulation and reformulation of norms and values, questions of accumulation and the ebb and flow of local and state policies and interventions. (Momsen 1991; Jackson 1997.) In ENHICA we have agreed that society produces knowledge, beliefs and traditions as well as a particular type of social order which are then transferred – though daily practices – into the modes of reproduction (Järvelä et al. 2001). In the case of environmental reproduction, it is interesting to consider what kind of environment individuals and communities can and will reproduce for themselves in everyday life choices where individuals and communities take positions.

Mary Douglas (1985) defines risks as culturally created and maintained and they can be considered as being born within social institutions of a society such as traditional leadership systems, religious rules, healing traditions, ways of life, as well as general beliefs and customs of everyday life. The acceptance of a risk, such as health risks related to contaminated water can thus be directly dependent on the prevailing institutional thinking of the community. Along this line is the assumption that community leaders, such as religious leaders, elders and traditional healers, formulate and maintain the acceptability of particular risks and that this process is done consciously or subconsciously (Douglas 1987) as a part of the reproduction of everyday life. The early ideas of purity and danger in Mary Douglas's writings came from her research among the Lele of the Kasai, where also the early recognition of the qualitative aspects of human/environmental relations and their social embeddedness originated (James 1999).

Douglas (1985; 1987) argues that because of this close connection between the institutional thinking of the community and perceptions of risk of an individual, the acceptance of certain risks may even lead to negative consequences on the balance of these people's everyday life. Therefore, some of the immediate risks are not recognised and accepted as risks. This is an explanation given to ideas of purity and pollution on a communal level. According to Douglas (1994), the rules of hygiene are closely related to religious and cosmological ideas of accepted and non-accepted elements of everyday life,

as well as broader views of health, well-being and the ultimate meaning of life. When they make sense they reproduce the 'order of things' in a society and do not break the institutional order between the communal members, behavioural patterns and practices and hierarchical systems (Spikard 1990).

Following this reasoning, any sign of disruptions such as 'dirt' and 'pollution' are seen as negative elements of order, threatening to disrupt or break the communal and social systems. Notions of dirt and pollution become offences against a social order when breaking 'the order of things'. Thus, eliminating an offence is not a negative movement, but a positive effort to organise the environment and the everyday life of a community. This is done to support the existing institutions of the community, which maintain the community unity and the existing patterns of behaviour, such as rituals and taboos. In addition, it is assumed that the rituals of purity create unity in experiences shared by the whole community. They can be hidden behind symbolic patterns of practices of everyday life or be more recognised forms of normative practices. The disparate elements of such behaviour are related to each other, which are given meanings by the commonly shared moral rules and codes of a community. (Douglas 1994.)

Douglas (1994) identifies ideas of pollution at two levels in a society. The first consists of instrumental ideas, when beliefs are actively used as an influence towards the others through social pressure. Whenever one is found breaking the commonly accepted rules, he or she is harshly punished. Concerning the second level of expressive ideas, the moral codes are used more unconsciously and the laws of nature are dragged into the sanction of the moral codes. Following this line of conceptualisation, these two levels of pollution offer tools for discussion on the eco-social relationship between water and sanitation and its relation to environmental health and health situation (Järvelä & Kuvaja 1998). My study relies on the assumption that before formulating perceptions of contaminated water, people have to have some ideal belief related to dirt and contamination in general to form a basis for a formulation of an environmental health risk. This study seeks to find perceptions that refer to the idea of selection of risks – why some risks are noticed while others remain unidentified or hidden behind some other meanings.

### **2.5.3 Local knowledge and hybridisation of culture**

Recent research has stressed the ways that 'traditional' and 'indigenous' societies produce and use their existing local knowledge to create systems of production to ensure and maintain the present state of the environment (Agrawal 1995; Nader 1996; Young 1995; Nygren 1999). As Wendy James (1999) points out, there has been a growing interest in taking indigenous herders, hunters and farmers' own understanding of the natural environment into consideration in the development projects and in the larger frames of sustainable development. Aspects of indigenous or local knowledge or cultural landscape have been given more emphasis in trying to understand the way in which human relations with the natural environment, and patterns of economic

activity, are shaped by vernacular categories and the values of social life. (James 1999.)

Theories such as post-modernism, globalisation and hybridisation have emerged as attempts to respond to the crisis of understanding recent phenomena in development discourse. Concepts have emerged such as *hybridity*, which refers to the relationship between modern and traditional forms of way of life and transitional phases in the continuum between the two premises (Murdoch & Clark 1994; Craig 2000). The concept of hybridity aims at dealing with the interpretation of global processes and local situations, e.g. the relationship between the modern and traditional, and the urban and the rural. Tucker (1996) points out that hybridity and multiculturalism are shaped by economic premises and by power relations, but where cultural analysis forms a central element.

In these premises, the indigenous associations and forms of administration are facing many kinds of challenges and threats as the traditional rulership, authority and values, especially among the youth, are mingling between the two forms of 'the way of life' (Olowu & Erero 1996). Thus, in this study I refer by the concept of *cultural hybridisation* to questions of what modernisation actually means at different levels of society, and what kind of new modes evolve when moving between the continuum of 'tradition' and 'modern'. If this can be viewed as a 'development process', what then is the difference between rural and urban communities or can they rather be perceived as a rural-urban continuum, because of the Yoruba characteristic of urban way of living and the pattern of dual residence (see page 60)? Is it so that at some point communities, or sub-communities of the community, apply the 'traditional' cultural way of life to the new situations, and actually reproduce cultural hybridies of their prevailing cultural attitudes, practices and approaches to everyday life management? Does this also lead to new modes of water and sanitation practices and behaviour patterns adapted from the former practices? These are the questions I will consider after presenting the research settings and methodology of this study in more detail.

### 3 NIGERIA AS A LIVING ENVIRONMENT

#### 3.1 Basic facts about the ecology and socio-economic standards in Nigeria

Nigeria is situated on the shore of the Gulf of Guinea and covers an area of 923,770 sq. km. Neighbouring countries are Benin, Niger, Cameroon and Chad. In the south, the landscape is quite flat and covered by rainforests. In the south-west, rocky outcrops characterise the highlands of the Yorubaland<sup>15</sup>. Rivers and their tributaries run through the country making the soil rich and fertile. The climate is equatorial<sup>16</sup> and has high humidity and substantial rainfall with rains lasting normally from April to October. Towards November, the rains end and the dry season begins (NEST 1991; Africa 1997; 724; FOS 1998b).

The Federal Republic of Nigeria<sup>17</sup> was founded in 1960 and has 36 states with a Federal Capital Territory, Abuja. Each state is subdivided into Local Government Areas (LGAs). Presently, there are a total of 774 LGAs in the country<sup>18</sup>, which function semi- independently and are responsible for providing the basic infrastructure and services for the people in the area. Lagos State has 20 LGAs and Osun State, 30 LGAs. **Ife Central LGA** is the largest

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<sup>15</sup> The south-western part of Nigeria has been named Yorubaland, based on the ethnic majority of the Yoruba in the region. This area consists of Kwara, Lagos, Ogun, Ondo, Osun and Oyo States of Nigeria.

<sup>16</sup> The mean daily maximum temperature is between January and February when the temperature reaches about 35 degrees centigrade and the lowest is between August and September when the temperature is about 22 degrees C. However, during the peak of the dry season, the temperature may fall to 10 degrees C at nights (FOS 1998b). In the Lagos and Osun States, rainfall varies between 4.8 millimetres (January) to 599.5 (June) (NEST 1991).

<sup>17</sup> The history of the populated area now belonging to Nigeria goes back as far as the Stone Age and the kingdoms of Benin, Oyo (Yoruba) and Hausa States were founded 1000–1500 A.D. The area was a British colony, which established a consulate in 1861 in Lagos, from where the present evolution of Nigeria as a political state has originated (see Davidson 19; Africa 1997; Ikime 1999 for historical details).

<sup>18</sup> The number of LGAs has been increasing, because some of the former LGAs have been divided into different LGAs due to changes in the local administration.

urban agglomeration in the Osun State and covers an area of 110.910 sq. km. with its headquarter in Ile-Ife. **The Atakumota West LGA** covers an area of 576->971 sq. km., and has its headquarter in Osu, which is about 35 kilometres from Ile-Ife and 40 kilometres from Ifewara. **The Ajeromi/Ifelodun LGA**<sup>19</sup> is located in the heart of Lagos with its headquarter in Ajeromi/Ifelodun. It covers an area of 12.3319 sq. km., of which Amukoko area has about 2.25 sq. kilometres (Demographic 1994; USAID 1994; Africa 1997; MSF 1998; Ikime 1999; IDEA 2001; Mursu 2002; The Nigeria Congress 2002).

Nigeria is the most populous country in the African continent and has more than 250 different ethnic groups. The Yoruba, who inhabit most of the southern and south-western parts of Nigeria, belong to one of the major groups, others are Hausa (north) and Igbo (east). These are also the most common languages of the average 200 languages. However the official language is English. According to international estimates, Nigeria's current population is between 120 and 130 million, but the last official census from 1991 presents a figure of 88.5 million<sup>20</sup>. The table below presents the population profile and shows the problem of current population counting. It is a well-known fact that even the metropolitan area of Lagos is occupied by more than 12 million inhabitants (World Bank 1999), but the figure here gives the population of the whole Lagos State as 5.7 million people in 1991. (FOS 1998a.)

TABLE 2 Population profile of the LGAs and the two States

	Census 1991	Ife Central LGA	Atakumosa LGA	Osun State	Badagry (A/I)* LGA	Lagos State
<b>Total population</b>	88,500,000	186,000 <sup>21</sup>	98,142	2,158,143	593,561	5,725,116
Males	44,500,000	92,417	48,941	1,043,126	313,344	3,010,604
Females	44,400,000	94,439	49,201	1,115,017	280,217	2,714,512

(FOS 1997; FOS 1998a; FOS 1998b)

<sup>19</sup> The LGA belongs to Badagry Division, based on the administrative division made in 1968. The division is sometimes used as a reference in documents, when the LGA system is not used, e.g. in FOS 1997.

<sup>20</sup> There is a complex question related to the reliability of statistics concerning the population census in Nigeria. The last official census is actually from 1963, when the population was estimated at 55.7 million. The last census in 1991 was interrupted and the head count was put at 88.5 million (Akinkugbe & Salako 1995, 137). **The house numbering** population counting, started in the early 1990's has given a somewhat more realistic number of the current population, but it has only been implemented regionally, and the process is still ongoing in some areas (Field Diary 1998; 1999; 2001). There is a plan to conduct a new census in the near future (Information from the Local Government officials, Ife Central LGA, Osun State, 1999 and 2001).

<sup>21</sup> According to the house numbering exercise (1993) the population of Ife Central was 230,000 people in 1993 (Demographic 1994).

In Nigeria, polygamy<sup>22</sup> is common also today and is found in all regions and among all socio-economic groups. In the early 1990s, about 41 per cent of married women lived in a polygamous union. These women were most often less educated and came from rural areas or from the northern part of the country. Life expectancy for women has been 52 years and for men 49 years. About 48 per cent of women have some level of education, 67 per cent of men, and children about 89 % have received primary level education. Today, about 50 per cent of the total population are Muslims concentrated in the north and partly in the south-west, about 40 per cent are Christians in the south and south-west and the rest of about 10 per cent belong to the group of traditional religions. (Babalola 1991; FOS 1992; Korpela 1994a; Africa 1997; FOS 1998a; IDEA 2001; CountryWatch 2003.) Table 3 presents a comparison about basic demographic data on Nigeria and Sub-Saharan African countries in general.

TABLE 3 Basic demographic data on Nigeria and Sub-Saharan Africa

	<b>Nigeria</b>	<b>Sub-Saharan Africa</b>
Annual population growth rate <sup>23</sup>	2.8 %	3.0 %
Percentage of population under 15 years	48 %	20 %
Life expectancy at birth (years) <sup>24</sup>	52	50
Average births per woman	6.1	6.5
Maternal deaths per 100,000 live births	980	1000
Infant deaths per 1,000 live births	105	114
Under-5 mortality rate per 1,000 <sup>25</sup>	122	147
Access to safe water (1995)	50 %	47 %
Access to sanitation (1995)	57 %	47 %

Of the whole population, about 71 per cent of Nigerians are considered poor, out of which 36 per cent belong to a group of core poor and about 35 per cent to a group of moderately poor (FOS/UNICEF 1995). More than three-quarters of the population reside in and earn their living from the rural areas (Federal 1996) and about 61 per cent are engaged in household-based agriculture (FOS 1997, 7). The majority then lives in small towns and village settlements, which are connected to a dilapidated road network leading to a bigger town. Income is gained<sup>26</sup> from cash crops of cocoa, yams, maize, cassava and vegetables and through petty trading, artefacts or small-scale technical works. In coastal areas and lagoons fishing is an important source of income, but has been increasingly at stake due to various forms of environmental degradation such as the growth

<sup>22</sup> Based on a FOS/UNICEF (1995, 3) survey, of all male-headed households, about a quarter had no spouses living with them, 58 per cent had one wife, 13 per cent had two wives, 2 per cent had three wives while 3 per cent had four or more wives.

<sup>23</sup> Source for the two first data: Rosen & Conly: Africa's Population Challenge, 1998, 78-79.

<sup>24</sup> Source for the four following data: Federal Republic of Nigeria 1996, 195

<sup>25</sup> Source for the three following data: World Bank 1999.

<sup>26</sup> In late 1990, the mean income in Osun State was about 3,200 nairas and in Lagos State about 7,500 nairas. At that time, 7,500 nairas was about 88 USD, depending on the exchange rate (1 USD=85 nairas)

of water hyacinth and oil spillage in waters, especially in the south-eastern part of the country (Salo 2001; see also Haakonsen 1992 for other West African countries). In Osun State, the majority are engaged in agricultural work or involved in animal husbandry, forestry, fishery and hunting. In urban areas, most people are employed in industry, government or services or in the informal sector (Peil 1991). In Lagos State, many are sales workers, professionals and administrators, because Lagos was earlier the capital city of the country and has remained as the commercial and political centre. There are also a considerable number of street hawkers, people occupied in undefined works and unemployed homeless people.

### 3.2 Public health care and local government areas in Nigeria

Nigeria embarked on the WHO's Primary Health Care (PHC<sup>27</sup>) Programme in 1987, but before that there had been attempts to draw up a comprehensive national health policy through a number of development plans<sup>28</sup>. A National Health Policy was launched in 1988 and the responsibility of primary health care including the provision of environmental health was given to the Local Government Areas (LGAs). The original idea was that they would provide and maintain health services in collaboration with the state governments. (Akinkugbe & Salako 1995.) Instead, they started to be solely responsible for the supply of health care. Consequently, the political and administrative decentralisation of the LGAs created tremendous implications for the management and delivery of health services in Nigeria. Firstly, the emphasis has long been on curative rather than on preventive care. Secondly, there has been only minimal community involvement in the health care system in spite of the emphasis of the National Health Policy (USAID 1994.)

In 1989, more changes followed and village/community health services were given a more central role. This was a part of the pilot exercise of the administration change in primary health care. All health services that could be provided by Village Health Workers (VHWs) and Traditional Birth Attendants (TBAs) were encouraged and the aim was to utilise as much information and resources from the grassroots level as possible, i.e. the communities and villages. Also the training of village health workers and traditional birth attendants was encouraged and people were selected in communities to take part in the training (Shodeinde 1989).

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<sup>27</sup> The tasks of PHC include health education, nutrition, adequate safe water and basic sanitation, maternal and child health care, family planning, immunisation, prevention and control of endemic and epidemic diseases, provision of essential drugs and supplies, care of elderly and handicapped people, care and prevention of accidents and injuries (USAID 1994, 8).

<sup>28</sup> These include the First Ten-year Plan for Development and Welfare (1946-56), followed by the Second, Third and Fourth plans.



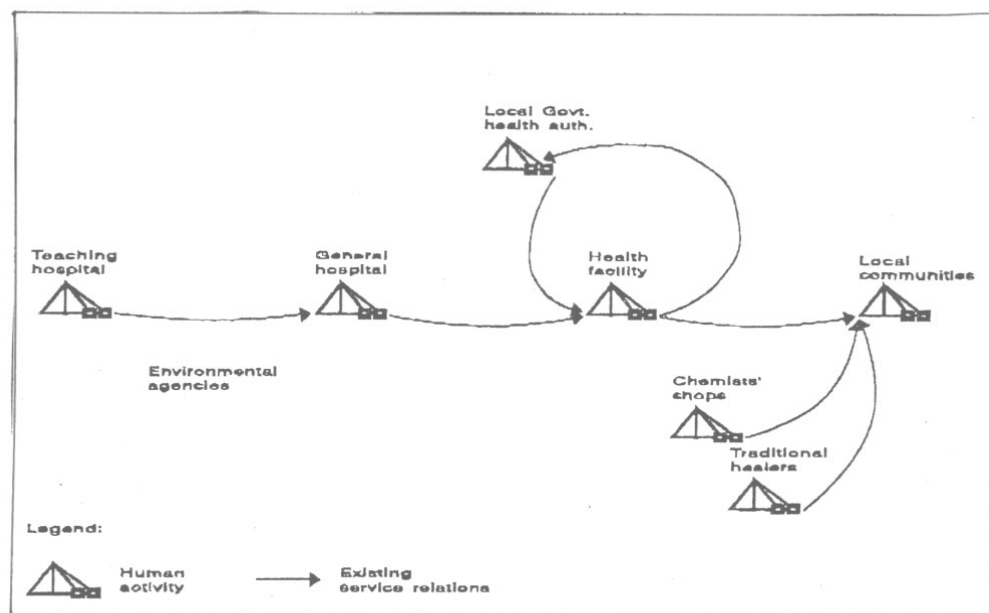


FIGURE 4 The network of health-related activities on a LGA level in Nigeria (Korpela 1994b, 4).

In 1986, some LGAs had been selected as *pilot areas* where the implementation of PHC had been given more funds and support and they also had started to cooperate more with some Colleges of Medicine or Schools of Technology located in major cities or towns (USAID 1994). At the same time, village and community health committees had been established, at first in the pilot areas and then later on in other LGAs. The committees have aimed at collaborating with the LGA health officials and providing information on the needs and suggestions of local communities in primary health care. (USAID 1994, 8.) Committees have been established following cultural and social hierarchies, often based on the traditional leadership systems with members from amongst the traditional healers, community elders, market women and traditional leaders of a village or an urban community. However, there have also been problems of motivation and long-term involvement in the work of these committees. Many times the expectations have been high compared to the realistic outcomes and people have lost their interest when no immediate changes in the health services of the area have evolved. It is also because the local people have not been actually involved in the programme planning that the implementation of such programmes has not really succeeded. The consequence of this lack of customers' involvement has been low grassroots participation, which has further weakened accountability and the responsiveness of the PHC (USAID 1994, 57-58.)

**Ife Central LGA** has acted as one of the initial 56 Primary Health Care model LGAs in Nigeria since the mid 1980's. Even though a lot of cut-backs in PHC have occurred since then, the Ife Central LGA is said to markedly stand out as one of the areas where PHC is properly practised in the whole State. It has achieved success in PHC processes implementation, and is said to have a

leading role in the local monitoring of PHC activities in Nigeria. (Demographic 1994.) In the Ife Central LGA, the village committees have been built upon the compound-elder system<sup>29</sup>, which has turned out to be very successful. The committees have supported immunisation campaigns by encouraging particularly women to participate and they have also assisted in selecting village health workers for the PHC programmes. Moreover it has been pointed out that the committees have helped in resolving any disputes and conflicts between PHC health workers, LGA officials and the local dwellers. (USAID 1994, 22; 56-57; Hausen 2001.) In the Osun State, nearly 2,000 village development committees have been recorded and all LGAs have by now established such services (Osun 1998, 128).

**Atakumosa LGA** was part of a pilot exercise that was conducted before the administration change of the 1980s during the 1970s. The programme involved some LGAs in Ile-Ife – Ilesha area and aimed at planning a comprehensive health education programme to cover hospitals, health centres and communities. During the years that followed, a number of health education meetings at market places and other strategic locations were organised, actions for refuse disposal activities and constructing pit latrines were conducted. However, the actions were rather narrow in nature and involved only a limited number of health staff (Fabiya 1994). A number of community health committees have been currently established, but their actions have not been coordinated systematically by the LGA officials (Field Diary 2001).

In the **Ajeromi/Ifelodun LGA**, few health programmes had been implemented, mainly by USAID, before the Médecins Sans Frontières (MSF) started health care programmes in 1996 (Basics 2000). The programmes aimed at increasing health education of diarrhoeal diseases and the construction of toilets and sanitation facilities at schools and other strategic places. In addition, involvement of local key persons and market women was encouraged and a local health centre was re-opened by the support of (MSF). Also a non-government association of 'Ladies for Health' were established among the Market women of Amukoko, who established small-scale health kiosks within their shops or other business enterprises in Amukoko. (MSF 1996; MSF 1998; FD 2001.)

At present, the National Health Policy encourages a community-based approach and bases its principles on social justice and equity. These have been underpinned in the Nigerian constitution and they follow the guidelines of the WHO policies 'Health for All by the Year 2000' and 'Health for All in the 21<sup>st</sup> Century' (WHO 2002). Local government areas have become the major actors in the provision of basic infrastructure and services. They are the first official level to contact when a community identifies problems in their provision of water supply and sanitation or whenever there is a need to consider any attempts to improve the situation, either with local resources or with outside help.

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<sup>29</sup> Information from the Local Government officials, Ife Central LGA, Osun State, November 25, 1999.

### 3.3 Environment and health in Nigeria

Nigeria has a wealthy bio-diversity, rich natural resources and a variety of ecosystems, but it also suffers from a number of environmental challenges as was discussed in the introduction of this study. During the colonial period, there was not much interest in environment issues other than utilisation of natural resources. Up until recent years, public policy has not perceived environmental issues from a holistic perspective. Consequently, environment has been considered as consisting of different sectors, such as sanitation, public health, wildlife or forestry preservation without linking the causal relations and different factors affecting the environment. (NEST 1991; CountryWatch 2003.)

According to the Nigerian Environmental Study/Action team (NEST) (1991) report, all the former development plans lacked emphasis on the environment. The 1946's *Ten-Year Colonial Development and Welfare Plan for Nigeria* was actually a strategy for the further exploitation of the country's natural and human resources. The *First* (1962 – 68) and *Second National Development Plan* (1970–74) in Nigeria did not include any specific guidelines for environmental policy. The second one only included a notion of equity and the provision of basic needs, but this did not lead to any concrete actions in environmental issues. It was only in the *Third National Development Plan* (1975-80) under the title "regional development", when increasing interest in environment policy evolved. This plan covered issues of water, sewerage, housing, town and country planning, cooperatives and community development. Some tentative steps were taken towards a conceptual shift in sectoral and financial planning and new emphasis was given to urban, rural development, environment, land, and population policies, but no budgetary allocations were specially made to environmental policy. However, this formed a basis for environmental policy, which was legislated in 1988. It was in the *Fourth National Development Plan* (1981-85) when environmental planning and protection was given public recognition for the first time. Definite budgetary allocations were made for some of the most alarming environmental problems and environmental protection became an important factor in regional development. (NEST 1991; Akinkugbe & Salako 1995.)

The Federal Environmental Protection Agency and the National Council on the Environment were set up in 1988 (NEST 1991) and the following year the National Policy on the Environment was launched. Environmental Impact Assessment (EIA) guidelines were formulated in 1992 to provide a formal framework to consider environmental trends in the planning process. Simultaneously, the Environmental Division in the National Planning Commission was established. During the next few years a number of State Environmental Protection Agencies were established. The launching of new state agencies continues even today and there is an increasing consensus of the relationship between the sustainability of economic development and the sustainability of the environment. Current interest areas include concern of

increased deforestation, flood and erosion problems of land and water plans. Education, particularly of children and youth, is regarded as one of the key points in achieving sustainable development. The implementation of the World Bank Assisted Nigeria Environmental Management Project has been a continuous project during the 1990s (Federal 1996, 232) and continues also today.

Nigeria's government in conjunction with international NGOs have continued to implement programmes on sustainable development to promote environmental progressive land use management techniques and the conservation of bio-diversity. The regulation and protection of the environment is now under the jurisdiction of the Federal Environmental Protection Agency, which is managed by the Ministry of Works and Housing. The most important non-governmental organisations in the country are the Nigerian Conservation Foundation and the Nigerian Environmental Study/Action Team (NEST) and there is a number of small NGOs operating in the environment sector throughout the country. (NEST 1991; CountryWatch 2003; Field Diary 1999; 2001.)

### **3.3.1 Programmes in the water and sanitation sector**

A separate ministry for Water Resources and Rural Development was created in 1993 to ensure extensive management of the country's water resources in agricultural production, provision of potable water, involvement in the fight against desertification and in the control of flood and erosion. The River Basin Development Authorities and the Directorate of Food, Roads and Rural Infrastructure (DFRRI) also work under the ministry. There has been a strong move by the Federal Government to State Water Agencies (SWAs) to undertake the management and financial system of water issues. This idea is the main component of the National Water Rehabilitation Programme (NWRP), currently implemented by the SWAs. (Federal 1996, 219.)

The programme was launched in 1994 and has been mainly funded by the World Bank. It was established to assist the States (particularly the SWAs) to meet the rehabilitation and expansion programmes, and has a number of smaller projects under its 'umbrella'. The programme has been targeted particularly at the urban and semi-urban water supply schemes, thus less attention has been paid to the rural areas in this programme. It aims to rehabilitate the prevailing water works and to construct piped water. In addition, a number of wells, boreholes and dams have been constructed based on the regional conditions and needs. (Federal 1996; National 1997.) Some of the major problems faced in the programme include the lack of adequate funding and coordination of funds and operations. Due to financial problems the idea that water supply is a social service and should be delivered free to the people has been challenged and does not hold anymore. There have also been a number of regional difficulties. (National 1997, 37–52.)

The National Water Resources Master-plan commenced in 1992 and it is expected to provide a framework for a systematic planning and execution of water resources development programmes up to the year 2020. Since 1995, hydro-geological maps have been produced to provide information about the

country's ground water resources and to ensure sustainable development in water budgeting. In addition, a register of Nigerian dams is constantly updating information about irrigation schemes in the agricultural areas. In the National Borehole Programme, a total of 530 boreholes were commissioned in the first phase, and about 330 were in progress in 1996, mainly targeted at rural areas. In addition to the mentioned programmes, there have been many projects implemented with the assistance of multilateral agencies, of which a UNICEF assisted Water Supply and Sanitation Monitoring Programme, has been targeted at the whole country. (Federal 1996, 73–75.)

Since the creation of Osun State in 1991, the Osun State Rural Water and Environmental Sanitation Agency (RUWESA) started to operate in order to provide the people in the State with potable water and safe sanitation with a commitment to cooperation with UNICEF. The Water and Environmental Sanitation Programme comprises all activities relating to water and sanitation and it has achieved a considerable number of constructed boreholes, wells, water pumps and latrines between the years 1991 and 1998 in the State. (Osun State 1998.) The projects in the water and sanitation sector have been implemented as a part of the Agricultural Development Programme (OSSADEP), where recent outcomes include the construction of two dams, one located at Ifewara and another at Ife-Odan. The dam in Ifewara was later handed over to the State's Water Corporation. (Osun State 1998, 14.) In addition, a number of boreholes and wells were constructed in the state as a part of the programme. As a part of the Rural Water and Sanitation Programme, communities were encouraged to construct Ventilated Improved Pit (VIP) latrines, and wells were provided with hand-operated pumps in the rural communities. A total of 949 toilets water points (boreholes and deep wells) and 145 VIP toilets were constructed<sup>30</sup>. (Osun State 1998, 24–25.)

The Lagos State handbook (1995) tells that the history of local governments in the state can actually be traced back to the late 19th century, when a "General Sanitary Board" was established to take responsibility for the general sanitation of Lagos. The functions of environmental sanitation and general improvement of the township has deep roots in the regional history. In the state, the current programme to establish and rehabilitate piped water system in the metropolitan Lagos has been the major project for years. The World Bank Assisted Adiyān<sup>31</sup> Project aims at rehabilitating existing water trunk mains and water works and providing other essential services to improve the supply of piped water. (Lagos State of Nigeria 1995.) Programmes to improve the sanitary conditions have been recognised as being of importance

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<sup>30</sup> According to the report, Atakumosa had 48 water points and 3 VIP toilets constructed, and Ife Central had 44 water points and 6 VIP toilets as a part of the programme (Osun State 1998, 25).

<sup>31</sup> The Adiyān Waterworks project started in 1988 and has been implemented in three phases. It has got its water mainly from the Ogun River and its intake station is located at Akute. There are at least the Oyan and Ikere Dams to serve as reservoirs to release the raw water for the Adiyān and Iju Waterworks. From there the water is distributed to the Lagos metropolitan area. (Lagos State Handbook 1995.)

since the establishment of the state in 1967 (Lagos State Handbook 1995, 145) and there have been a number of on-going sewage and drainage projects. During the 1990s, the State Government intensified efforts to solve the continuous flooding problems typical in the coastal and lagoon areas, characterising the whole state. Lagos State Waste Management Authority (LAWMA) and the Local Governments have been supported to continue with the decentralisation programme of waste collection and improvement of the facilities. (Lagos State of Nigeria 1995.)

### **3.3.2 National Environmental Sanitation Programme**

There was a special National Environmental Sanitation programme between the years 1985 – 2000 in the country, in which states were involved to a varying degree (NEST 1991; FD 2001). For example, in Lagos and Osun States a Task Force on Environmental Sanitation, comprising of both military and civilian personnel, was established. They were considered important for various reasons: to clear illegal structures, but particularly to enforce provisions of sanitary laws and to raise the standard of environmental sanitation in the state. Practices included regular drainage clearance, street trading, physical sanitation of tenements, and industrial and housing estates. (Lagos State Handbook 1995, 144; Osun State 1998, 162.)

Regular 'Environmental Sanitation Days' formed a central part of the programmes and were conducted as monthly exercises to clean the environment and take care of refuse disposal by the local communities. People were obliged to stay at home during morning hours and take part in the cleaning activities. Each State had nominated Assessment Committees to monitor and carry out surprise inspections in the local government areas. Their tasks included evaluating residents' responses to public enlightenment campaigns and to give health education on environmental health issues, but they also required the 'environmental policy officers' who worked in the field to carry out surprise inspections and fine or even arrest local dwellers if they were found to be avoiding their responsibilities or compounds were not found to be in the required condition. Due to this negative atmosphere, and because the people were not given enough means to manage with the waste collection, the programme was heavily criticised and even avoided whenever possible. In practice, and particularly in the urban areas, the collected waste remained at the street corners because there were not enough facilities to deal with transportation and waste management at waste disposal departments. (Aina 1990; NEST 1991; Kuvaja 2001.)

Since the cancellation of the programme, attempts to motivate people about environmental protection have been made at federal, state and local government levels. In many areas it is still common to follow the patten of having a regular environmental sanitation day once a twice in a month, but the new projects aim to encourage and educate people to promote a clean environment by providing tools such as regular waste collection systems or support for building latrines in the compounds instead of punishments and

obligations by law. Also regional focal points have been established in some places, also observed in this study, e.g. in conjunction with health centres or health posts, where people can get consultation on how to deal with household waste or protect their water sources. (Field Diary 1999; 2001.)

### 3.4 Environment and health situation in the research areas

Based on official reports on the **environmental situation** of the research areas, there is a clear distinction in the supply of basic infrastructure and services between Osun and Lagos states as seen in Table 4 below, but there are also huge differences in the living conditions depending on the location, especially within different living areas in the state of Lagos as the following table 4. indicates:

TABLE 4 Some basic indicators of the LGAs from Osun and Lagos States

	Ife Central LGA	Atakumosa LGA	Osun State	Badagry (A/I) <sup>32</sup> LGA	Lagos State
Average person per HH	4	4	4	3	4
% Of HH using ponds, streams, etc.	17	80	30	6	6
% With unconventional toilets	26	90	94	20	17
% With unsatisfactory refuse disposal	88	100	94	53	34
% Without electricity	29	80	41	21	3
% Of children 6-11 yrs in school	95	96	95	98	97
% Literate 15 yrs and over	69	58	62	76	90
% Of agric. workers	15	65	26	12	2
Unemployment rate 15-59 yrs	1	1	2	1	3
% Of women married before age 15	22	22	23	21	32
% Of children age 0 not immunized	40	59	24	18	17

(FOS 1997)

In Ife Central, the environmental situation was analysed in more detail (1991 – 1993) as a part of the house-numbering project<sup>33</sup>. It clearly showed the lacking facilities and poor environmental situation. Urban districts relied mainly on communal tap-borne water, but the level of availability was very low and differed considerable between health sections of the area. Other sources included wells, particularly in areas where the level of use of the tap-borne water was very low. In the villages, streams were the main source (90 per cent),

<sup>32</sup> Ajeromi/Ifelodun LGA was formerly a part of the Badagry LGA (FOS 1997).

<sup>33</sup> See Footnote no 20 about the house numbering population counting.

but wells were not common, even though people considered them necessary and hoped for improvement. Rainwater was not considered especially important because of the number of streams in the area. The lack of toilet facilities presented an evident problem, shared by urban and rural areas, as the urban households lacked about 30 per cent, and nearly 100 per cent of the rural households. Open dumping was the most common type of refuse disposal, and the dumping area was usually situated a short distance away from the houses in the villages, but in the urban areas this practice was not always possible, because of dense housing and lack of abandoned land in the neighbourhood. (Demographic 1994, 46.)

**The health situation** follows quite a similar line of development: in the state of Osun, the most common disease in 1995 included malaria, diarrhoea, measles and pneumonia (FOS 1998b). Lagos State has similar records of all the major diseases, but also cases of leprosy, tuberculosis and typhoid have been common (FOS 1998b, 120). For example, in Ife Central LGA, cases of malaria (43 per cent), pneumonia (5 per cent), diarrhoea (5 per cent) and malnutrition were recorded in 1993. Most of the patients seen at the health centres were children below five years of age suffering from various causes: malnutrition (85 per cent), diarrhoea (82 per cent) and pneumonia (78 per cent). (Monitoring 1994, 6–7.)

The group of others in the report covers 44 per cent of all the recorded cases and forms the second largest group, but there is no comment given of what the group 'others' includes, but most probably it also includes cases of the three water-related diseases (river blindness and guinea worm diseases and schistosomiasis). According to personal communication with the local health officers, there are few cases of river blindness and guinea worm diseases and schistosomiasis recorded each year. For example, in 1999 a couple of guinea worm disease cases were found in Abagbooro village, but then there were no records of cases in the other villages of the Ife Central LGA (Field Diary 1999).

Official health statistics show that in 1995, there were 119 cases in Osun State and 6 cases in Lagos State of river blindness disease. The number of guinea worm disease cases, were 9 in Osun State and 6 in Lagos State, and 32 cases of schistosomiasis in Osun State and 75 in Lagos State. (FOS 1998b, 120–121.) The report also shows that the country's guinea worm eradication programme has been successful in reducing the number of cases between the years 1990/91 and 1995<sup>34</sup> (FOS 1998b, 141). The number of recorded cases are very low, but as studies, interviews and observations have confirmed, many cases of these diseases have not actually been registered, but have been left untreated or are listed under the group of 'others', such as the example from Ife Central LGA showed. Another report presents the total number of schistosomiasis (11,983 cases) and guinea worm disease (5,356 cases) from 1993 covering the whole country and provides a comparison to the low records of these diseases in the state level reports. In Osun State, evidence shows that the

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<sup>34</sup> During this period, the number has been reduced from 84 cases (1990/91) to 42 cases in 1995 in Lagos State, and in Osun State the numbers are more convincing: 974 cases in 1990/91, but only 19 cases in 1995 (FOS 1998b, 141).



guinea worm eradication programme, started in 1991, has been successful and has managed to reduce the number of cases considerably by 1998. (Osun State 1998, 130.) These figures show the vulnerable health situation of the study locations. The everyday living conditions will be presented in more in-depth in the methodological part of this study.

## 4 NIGERIAN SOCIETY AND YORUBA CULTURE

### 4.1 The effects of the Structural Adjustment Programme and the present situation

From the early 1980s Nigeria has experienced a severe socio-economic and political crisis. Nigerians' income declined rapidly due to inflation, and was followed by a general reduction in the production of goods and services<sup>35</sup> (Jega 2000). In order to improve the situation the Structural Adjustment Programme (SAP) was introduced in 1986 to halt economic stagnation and revitalise growth. It aimed to bring about the needed self-reliance and self-sustenance to the economy and the government was given a more reduced and supportive role, especially in the control of agriculture and industry. However, the impact of the SAP-based economic policies was devastating on most of the sectors of the economy, and deteriorated the well-being of the majority of Nigerians. Social provisioning was systemically disengaged by the state, leading to considerable increases in the cost of education, medical and health care services and increase in food prices. For example, the introduction of a user's fee in health care services prevented many from using the services, prices of imported drugs and goods rose and facilities at health services were not maintained. (Vickers 1991; ACC/SCN 1993, 58; Kuvaja-Puumalainen 1995, 63; UNICEF 1996; Castells 1998; World Bank 1999; Jega 2000, 25 - 30.)

Effects on agriculture were especially strong, because the early years in 1980s had made Nigeria a large net food importer. In order to change the situation, SAP encouraged domestic agriculture production in order to reduce food import and investments were targeted at the rural infrastructure and agriculture services (Kuvaja-Puumalainen 1995, 63; Egwu 1998, Jega 2000).

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<sup>35</sup> The government responded by public sector borrowing, running down international reserves and accumulating large payments arrears on external trade deficits, but when the oil price collapsed in 1986, it caused great difficulties in the Nigerian economy. The GNP per capita fell from US\$ 360 to US\$ 290 in three years between 1987 and 1990 and the state was not able anymore to provide for the basic socio-economic needs of the people. (ACC/SCN 1993, 58; Jega, 2000, 25-29.)

Especially the situation of small-scale farmers became more restricted because of the inflation and general decline of the standard of living. Many Nigerians experienced a drastic reduction of income due to the effects of the increased prices and wage demands. For example, a farmer, after having paid the increased wages to the labour force needed in the farm production, was now left with nearly no income or funds to buy seeds for the next farming season (Kuvaja-Puumalainen 1995, 71) creating even more pressure on the average Nigerians living already in poverty.

In spite of rich natural resources and the oil industry, Nigeria is presently ranked as belonging to the poorest and most deplorable of the developing countries in the world. The poor people come from three major groups: farmers owning less than three hectares of land, women-headed households, and a group of artisan and fishermen. (Jazairy et. al. 1992.) These groups are also well represented in this study, as my informants consist of small-scale farmers and their wives, artisans, petty traders and fishermen (pilot phase). Even though many current indicators actually come from the early 1990s, observations confirm that many of the living conditions are similar or even worse today.

The government's responsibility and ability to provide services has deteriorated during the recent decades. Many services have no longer been delivered by government agencies, either because of long strikes due to poor payment in salaries or because of the lack of essential equipment (health care) or loss of the culture of public service (the political, military, postal and civil services). This has led to the development of alternative institutional structures for providing essential services in security, improvement and maintenance of roads, water and waste management facilities. (Olowu & Erero 1996; Africa 1997; Ikime 1999; IDEA 2001; Mursu 2002; The Nigeria Congress 2002.)

Since the change to political democracy in 1999, the country has benefited from an increase in political democratisation and development as well as received support from the international community. However, also a lot of inter- and intra-ethnic violence has emerged in different parts of the country. According to the IDEA report (2001), the public perceptions are that the Government has not been sensitive or active in addressing fundamental issues such as poverty alleviation, resource distribution, infrastructure development and security aspects. Therefore, it can even be argued that today a greater difference exists between southern and northern, rural and urban living environments and within different regions of urban centres when it comes to the provision of basic infrastructure and services (Bevan et. al. 1999). For example, regular cuts in electricity are still common in Lagos, due to chronic NEPA (Nigerian Electric Power Authority) supply problems.

## 4.2 Urbanisation and migration to cities

The proportion of African population living in towns and cities has increased greatly over the last 30 years. The trend towards modern urbanisation evolved in Nigeria during the country's change into a more industrialised country. Within this flow, migration to urban areas increased. This has even been seen as one of the major causes and symptoms of the various economic and social crises of recent decades. The urban population is about 42 per cent with an average growth rate of 6 per cent per a year. Lagos leads the cities in expansion (8–14 million), but other fast growing cities include Ibadan (3 million), Onitsha and Abeokuta, all located in the southern part of the country. In northern Nigeria, the fastest growing city is Kano (about 3,5 million) (ACC/SCN 1993; World Bank 1999; IDEA 2001; CountryWatch 2003).

The main reason for urban migration has been the chance for a social change and opportunities for a better life. This has had a huge influence on the life of both rural and urban areas, on the gender roles at home and within the community as well as within larger frames of development (Peil & Oyeneye 1998; Andræ 1997). The rural-urban interaction and linkages have changed having effects on livelihood, the social and political situation and survival strategies of the people (Baker 1990; Baker & Pedersen 1992). While villages lose young working-age men who move to the nearby towns with high hopes, their families, wives and children as well as the extended family are left without their support. Yet, migration to the urban areas, and especially to metropolitan Lagos, rarely offers a real opportunity to achieve anything in life. Most of the urban areas where migrants first move are low-income housing or shantytown areas, where they have some family members or friends with whom to board and who can help the newcomers in search of a job. However, the areas lack proper infrastructure and services even for the needs of the whole population and especially to the newcomers at the same volume as they come. These factors and general overcrowding increase vulnerability to diseases and social problems (Aina 1990; Peil & Oyeneye 1998). There have not been enough working opportunities, and competition even of temporary jobs has been high, so the destiny of young migrants without proper education is to hang around in towns looking for some small petty trading opportunities or casual jobs, or trying to manage without a job by begging and even robbing, especially in the city of Lagos.

There have also been other reasons for a relatively high percentage of urban centres among the Yoruba. Compared to some other countries in Africa, where urbanisation has been a rather recent phenomenon and primarily seen as a cause of modernisation and industrialisation, the situation in Nigeria, and especially in Yorubaland, has been rather different. From ancient times, the urban way of living was an important type of residence among the Yoruba and considered even unique in relation to the number and size of towns and their

specific social infrastructure, organisational and educational systems (Eades 1980, Trager 1998).

The model of indigenous urbanisation can be traced back from a typical 'rural' pattern of livelihood, in which much of the food crops were grown in the nearby locations of the town (Uduku 1994) referring the way of life as a continuum between rural and urban. Among the Yoruba, the maintenance of land rights of an individual rests upon a social consensus of recognition rather than on legal title or on land cultivation (c.f. Fadipe 1991; Bevan et. al. 1999). Most of the Yoruba have preferred to live in large villages or towns while commuting daily, weekly, or when necessary, to their farms (Ikime 1999). This phenomenon of *dual residence* is a common practice also today (Adetunji 1991). A typical Yoruba farmer regards his village or farmhouse as a provisional or even temporary dwelling, and finds his real home with his patrilineal kinsmen in the family compound in the nearby town where most of the social, economical and religious shrines are located, and where meanings given to *place* (i.e. home town or community) as well as to *people* (relatives or others), are equally strong. The notion of "home" refers to the birthplace of one's father, or the place where one's father's lineage is from. (Trager 1998.) Thus, living in Lagos for many decades does not make it a "home city", as one would still refer to his/her original home town. Probably this is one of the reasons why Lagos is considered to be 'nobody's land' (Kuvaja 2001).

The industrialised economy of modern times has brought many changes to the existing urbanism in Nigeria, which is easily observed in the metropolitan areas of Lagos. The cities and their hinterlands are no longer autonomous units, but tied into a world system, which exerts pressure for social changes that might not otherwise be accepted in the culture. Cultural characteristics, such as kingship, kinship, education and political power need to allow various kinds of changes for greater social geographical mobility. Consequently, the 'traditionally' based social control through formal sanctions and religious and political power has been adjusted to the new demands of urban context. (Peil & Oyeneye 1998, 213.) It might even be creating new forms of social relations, and even social trust between community members that can be studied by the cultural concept of hybridisation.

When studying urban context, the idea of cultural hybridisation offers an interesting starting point. Hybridity has also been defined as an outcome of various, mingling elements of life in the city, operating in between different stages – tradition and modernity – in which it becomes very difficult to draw where tradition ends and modernity begins. Therefore, forms of transitional space evolve between the two, where clear characteristics do not yet exist, but which are affected by the general homogenising structures and functions of the public sector. (Myllylä 2001.) As the rate of urbanisation expands, the more variation arises in the mode and style of urban life, and the number of cities ranked belonging to the category of hybrid cities also rises (O'Connor (1983). These can be defined as cities combining indigenous and alien elements in quite equal proportions, but also integrated, rather than merely juxtaposed as in the

“dual city”. Myllylä (2001, 71) calls the phenomenon ‘urban symbiosis’, in which one essential denominator is the notion of integration between diverse areas. O’ Connor (1983) used Lagos from Nigeria as a descriptive example of a hybrid city, with its indigenous Yoruba core and its colonial city centre, which, instead of functioning as separated entities, share the heart of the city.

According to Myllylä (2001), the differentiation, or mixture of a great diversity of urban structures, functions and populations can be seen as a borderline condition towards change, for example, between ‘normal’ and ‘abnormal’; informal and formal, and drawing elements from multiple identities of ‘otherness’. It can be seen as a condition balancing between chaos and stability, creating most of the pressure for ‘the chance of a better life’. Hopes and hopeless situations do exist at all levels of communities. This is easily observed in the heat of urban life, but it is also applicable to any element of everyday life even in the fringes of rural communities. These people are not without the ‘modernising’ influences of the nearby town or urban centre, and even though their way of life might be the most ‘traditional’ and rural, they do not live in *isolated spaces* without connections to the ‘other’ kind of life.

Consequently, the linkages between indigenous institutions in rural communities and indigenous institutions in the urban centres form an important arena for implications of cultural hybridisation. It is common to find branches of rural-community indigenous institutions also established in the urban centres. This is a way to enable the community members to participate in the governance of their communities but also to protect the interest of community members resident in the urban area. (Olowu & Erero 1996.)

### **4.3 Culture and religion in a Yoruba community**

Based on the objectives of this study, it is of importance to present some major characteristics of the prevailing Yoruba culture of the region. As I have mentioned in Footnote 1, I will deal with the concept of Yoruba merely in a descriptive manner within the regional understanding of ethnic, religious and cultural variations in the Yoruba culture. This by no means excludes the fact that there are numerous regional differences among the Yoruba in the Yorubaland. However, relying on my informants’ conceptions of the prevailing manifestations of the Yoruba culture among them, I consider this to be enough for the analysis of this study. In the remote rural villages the cultural patterns of livelihood have often remained rather strong and they have a direct impact on the everyday life practices of women and men and on the whole community. As to the urban areas (such as a shantytown) it is relevant to consider the extensiveness of the same cultural patterns and implications in a more hybrid living environment. Lagos forms an important part of the ‘Yorubaland’, and the Yoruba cultural patterns and practices are intertwined in the complexities of everyday life of the urban centres. Moreover most of the urban shantytowns do

remain rather 'rural' in nature, even though they are a part of a mega-city. Poverty, poor or non-existing infrastructure and lack of resources do actually highlight the meaning of cultural consciousness and cultural patterns of maintaining everyday life. More specifically they are linked to household maintenance, matters of health and illness and in perceiving water and hygiene habits.

For centuries, the Yoruba culture has had a very powerful role in the African continent sharing similarities with the very broad concept of '*the African tradition*' and '*the systems of thought*' represented by experiences of the world and the means to understand and control it by a holistic worldview and cosmologies, but having also dominant characteristics of its own (c.f. Karp 1995; Martin & O'Meara 1995). Traditional Yoruba culture would plea for the abundance of three good things in life: wealth, marriage and children (Hallgren 1988). Traditions of origins of various Yoruba groups regard Ile-Ife as their place of origin, and they collectively regard the culture hero *Oduduwa* as their common ancestor, as well as *Ooni* of Ife as the head of the people of the Oyo-Yoruba (Fadipe 1991, 9). Yorubaland is peopled by various sub-groups of the Yoruba, such as Egado and Awori of the Ilaro division of Abeokuta Province of Nigeria, the various groups of Ijebu in Ifebu Province, the Ondo, the Idoko, the Ikale and the Ilaje of Ondo Province, and many others. These groups share a common language of Yoruba but have a dialectical variation of their own. However, cultural connection is not limited by language, as all these groups share a common ancestor and organisational structure. (Fadipe 1991, 29–30, Ikime 1999.)

Religion forms an important element of Yoruba culture and much of social and political life is embedded in the belief system of Yoruba religion (Kayode & Adelowo 1985; Sadiku 1996). Even though there are only a minority of traditional believers among the population, most of the Christians and Muslims apply their traditional religion alongside the major doctrines, thus the traditional Yoruba religion has retained quite a powerful status in Nigeria, and especially in the Yorubaland (Hallgren 1988, 10). Especially in rural communities, it is easy to find Christians and Muslims that do not follow the religious conflicts between the two lines despite the fact that it is exactly they who are creating the major conflicts in the country. Many of my informants have told me during the fieldwork how they have both Christian and Muslim members in their family, and that some of them even had changed between the two major religions according to their life situations, e.g. when getting married or separated. Similarly, I have been told that a wife does not always follow her husband's religion even though it might be assumed as a general rule.

Yoruba traditional religion has four main characteristics including belief in a Supreme Being, in deities and gods, in ancestral and other spirits, and in the power of magic and medicine. In general, the Yoruba regard the universe as consisting of two distinct, but not separate realms, of the visible world of the living and the invisible world of the ancestors, gods and spirits. It is a common belief that every person comes to live in this world from the gods or one's

ancestors, returns, and will be reborn in another generation. (Ojo 1966; Opoku 1978; Hallgren 1988; Abiodun & al. 1994.) Due to this holistic view, the relationship between the dead (ancestors) and their family remains natural and strong and it is considered important to keep up. Connections between the spirit and the material world are continuously maintained. (Opoku 1978.) It is also common today that when facing any problems in life, people turn for help to a *Babalawo*<sup>36</sup>, who acts as a contact person between the two worlds. Similarly, many constantly maintain good relations to the *Babalawo*, to avoid any problems with prosperity or concerns in life.

Consequently, Yoruba culture and especially its realisations through Yoruba religion should be considered in the context of a holistic worldview, which covers the full well-being of the individual, family and the whole community. One of the very common realisations of this relationship is the sacrificial rite performed by ordinary people or by the traditional leaders in the community (Awolalu 1981). These are intricately important in everyday life and the festival celebrations of the Yoruba communities, in both small rural villages as well as more urban compounds.

#### 4.3.1 Political organisation

The importance of traditional and indigenous governance is very strong and modes of indigenous administration are found everywhere in Nigeria and in the Yorubaland (Vaughan 1995; Olowu & Erero 1996). Actually, the predominant governing structure of villages and cities, which are being governed by local chiefs is very much distinct from the formal expectations of the three-tiered governing system of the whole country. In reality, it is a general fact that the institutions possessing formal administrative power are not actually taking full responsibility for the public services, but that they are provided by a variety of non-governmental agencies. These include indigenous or 'traditional' (township and community-based action groups) and religious, cultural and donor-based agencies. The importance and central role of different forms of associational life in the African context has recently been discussed by a number of researchers under topics such as the social networks' response to food crisis, women and gender-based groups, the churches' role in the provision of welfare and urban environmental governance (see Tostensen et. al. 2001). In Yorubaland, chieftaincy institutions and traditional associations range from constitutional monarchs to ceremonial ones integrating all of the community members into the governing system. In addition, the non-residential community members may possess central roles, in spite of not being around all the time. This is largely due to the linkage of age-grade and status system, which requires constant connection with the 'home-town' or 'home-community'. (Vaughan 1995; Olowu & Erero 1996; Trager 1998.)

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<sup>36</sup> The priest of *Orunmila* (a Yoruba name) is called *Babalawo* who commands the sphere of health and illness and all the mystics associated with the matter. He is also regarded as a medicine man, and almost equal to a medical doctor (Awolalu 1981).



Among the Yoruba, there has been a special kingship model based on the hierarchical structure of authority for centuries, which is prominent also today. The kingship model defines authority from the head of the small village or quarters of town to lesser kings and up to the principal kingdoms in the towns and cities. In general, at least the following five categories of chieftain can be identified: *Ooni*, *Oba*, *Oba kékeré*, *Baálè* and *Baálé* (Ojo 1966; Eades 1980; Fadipe 1991.) The Yoruba regard Ile-Ife as the spiritual capital of the Yoruba, and the king (*Ooni*) of Ile-Ife is considered to be the highest king<sup>37</sup> of Yorubaland. The kingship has been inherited patrilineally, it has been also possible to reach the position by special merits or election. (Ojo 1966; Eades 1980; Hallgren 1988, Abiodun & al. 1994). Second to *Oba* come the other 'officials' of secondary levels, the *Oba kékerés*. These minor chiefs have important roles as intermediaries between people and the *Oba* (Awolalu 1981, 17). At the village level there is the *Baálè* as the head of the village or a village coalition, and finally the *Baálé* of each village or a quarter in a town, forming a community with its own hierarchical structure and membership. (Eades 1980; Fadipe 1991)

Abimbola (1975) discerns three groups of people that maintain the 'traditional' Yoruba lineages. Firstly, priests and family heads, as each family lineage (*idílé*) has its own tradition of origin, migration and development. The elders of each family lineage still recall the original places where their ancestors first settled. The priests who are the custodians of the tradition of each family are in a position to locate the shrines of their respective lineage. Secondly, chiefs are of central importance because the town of Ile-Ife is made up of quarters and compounds, which has a chief as the administrative head of each. These are the traditional heads of the groups of families living in the particular quarters. Besides knowing their own lineage, they also remember details of the other lineages as well. In addition, they are directly involved in the annual worship of the deities of their families, and maintain remembrance of the family lineages. Thirdly, the group of male elders are of considerable importance as they have close relations with chiefs and priests. (Abimbola 1975.)

The traditional leaders possess not only political power, but also an important religious status in the community. They are regarded as descendants of the important ancestors possessing religious power and as an intermediate connection to the ancestors. Thus, their status is protected by various taboos, whose meaning is to remind the whole community that they are guarding the community from any misfortune. Therefore, any assault made on the chief is turned against the whole community, and vice versa. Thus, reconciliation requires sacrilege agreed upon by the chief before it can be realised and accepted. This emphasises the community unity in forming and maintaining the social order of things and social agreements also in the case of everyday practices and agreements.

The importance of traditional leaders has always been very strong, but they have received varying recognition from the nation state, and the Yoruba obas and their counterparts have struggled to retain their importance in the

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<sup>37</sup> He is seen as a father of the race and as a spiritual leader of the Yoruba (Sadiku 1996).

ethno-regional political framework. At the grassroots level this has meant a fight for their interests, competitive notions of traditional authority and increase in the elaborate system of state patronage. However, chieftaincy structures have thrived over the last century, especially because of their integration into regional alliances of power and privilege, but in addition, they are constantly reconstructed out of the living memories, interest and resources of the local communities, but also woven into the expression of communal identities, class interest and economic prerogatives, and to strengthen the extensive family tradition and the home-town linkages of family lineages. (Vaughan 2000, 214–217; Trager 1998.)

During recent years their influence has increased at the communal and local politics levels (IDEA 2001). For example, today the *Ooni* of Ile-Ife has considerable informal authority besides Local Governmental authorities in the area, and the *Baálè* acts as an important communication channel between the communities and Local Governmental Agencies, confirmed in observations and through daily experiences of the fieldworks. Therefore, considering the focus of this study, any decisions, for example concerning new innovations in water management of sanitation practices on a communal level cannot be made without consulting the local traditional leader, *Baálè* and the group of elders, in spite of how much benefit this would bring to the area.

#### 4.3.2 Status of women

The role of women in Yoruba society has been strong and influential for long, in spite of their rather limited role in local and national decision-making. However, besides taking part in the farming practices, the Yoruba women have found their arena in market trading, artefacts and fish products, from which they have been able to gain an income of their own and establish strong positions in the community as well as in the society. This is based on the old days, when a man and woman did not necessarily form a mutually complementary productive unit. However, the husband was entitled to supply her with the means for doing trade or artefacts, of which the tradition of the woman having a business of her own has remained a practice. Through trading women have also been able to gain political power and rise into powerful positions such as *Iyalode*. She is the head of the market women's association, and has a respected status in the local political system also today. (Sudarkasa 1973; Fadipe 1991; Mebrahtu 1991; Mills-Tetty & Fadare 1991; Olusi 1998; Sesay & Odebiyi 1998.)

Oluwole (1997) discusses the Yoruba world-view and principles of social experience with special reference to male-female relationships in contemporary Yoruba society. She bases her observations on 'the actual texts of oral tradition' of the Yoruba such as proverbs and the *Ifá* book<sup>38</sup>, which includes stories and

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<sup>38</sup> The book is considered to be the encyclopaedia of ancient Yoruba thought and wisdom besides being the religious book of the Yoruba. It is made up of an initial 256 *Odù* (chapters) which can be interpolated with others in such a way that *Ifá* actually constitutes an open-ended system. (Oluwole 1997, 100.)

tales used within it as an illustration of social, political and religious power, as well as description of moral themes and principles that are a pertinent part of everyday life also today. (Oluwole 1997, 100.) Concerning the focus of this study, relevant findings of Oluwole's (1997) study concern the Yoruba understanding of nature, Yoruba symbolism of the deities, Yoruba cultural views on knowledge and the Yoruba concept of male and female. According to this, nature or reality is not perceived as monistic, but presented in a view that every existence occurs in complementary union with another existence. There is also a distinction between the male and female deities that is relevant to the role of women in Yoruba society. Deities for iron and the fire-eating deity of thunder are male, but the deity of the river god, Osun, is female as are many other deities related to the cherishing of life and health. Osun is the deity of fertility, and it is always cherished at rivers, a theme that has been discussed in Article II of this study in more detail.

Yoruba knowledge is generally considered as relative in nature and that human and non-human objects/concepts are created in pairs: not of opposing, but shades of interaction in order to give meaning and life to the universe (Ilesanmi 1998, 29). Motherhood has been regarded as an important social responsibility, which has been evaluated higher than that of fatherhood. Male and females are regarded as partners in progress and this male-female principle is seen as so fundamental that nowhere is it denied in the organisation of society or in the communal life (Oluwole 1997), which also reflects the division of labour at the household level. In addition, the meanings given to the relationship between women, water and fertility show some elements that may become critical when people formulate their perceptions of safe water and the relationship between health and water, an idea not only unique for Yoruba, but among other cultures in Africa and elsewhere. For example, Dahl & Megerssa (1990) have presented interesting observations of the various roles water plays between gender, fertility, territory, kinship and power relations among the Borana of Ethiopia. Especially interesting are the notions of water as life-giving fertility to males, compared to the Yoruba conception of the similar qualities water has especially on women (Article II).

#### **4.3.3 Pluralism in health and well-being**

Based on the strong influence of the Yoruba culture, and of the religious sphere given to healing and medicine, the status of traditional medicine is also strong today in Nigeria as in many parts in the developing countries. The traditional healing branch covers a variety of different actors, including herbalists, diviners, indigenous bone-settlers, pharmacists and psychiatrists, soothsayers, local Islamic healers and traditional birth attendants (Pearce 1993; 155). Nigerian researchers have defined a traditional healer generally as someone who is recognised by the community in which the person lives as competent in providing some type of health care, either by using vegetable, animal and mineral substances or any other methods whose use can be attributed to social,

cultural, and religious backgrounds. (Cf. Odebiyi 1989; Moloye 1991; Pearce 1993; Sofowora 1993; Osunwole 1995.)

The Yoruba hold a strong belief in both physical and spiritual elements, thus beliefs in ancestor spirits; deities; hills and trees; and sacred rivers, especially the flowing character of water; give meaning to their medical practices (Buckley 1985). The Yoruba medicine involves medicaments as well as prophylactics and the professional skills of the healer, which includes preventing, alleviating and curing diseases as well as restoring and preserving health. The healer is not only just a healer, but simultaneously a priest and a manufacturer of charms and herbal remedies. Magic is seen as a natural element in the healing process, since medicine is considered to have some mystical power, which can cure or not cure, prevent or not prevent ailments. This approach is much shared among the developing world, but not necessarily regarded as exclusive to 'western' culture (Good 1987; Hallgren 1988; Jacobson-Widding & Westerlund 1989; Westerlund 1989; Osunwole 1990; Pool 1994; Pigg 1997; Nisula 1999). Actually, the new forms of medical knowledge can actually be called 'hybrid systems of medical knowledge', as Craig (2000) has pointed out, a topic discussed in this study in more detail in Article V.

Also today, medical pluralism and the role of various traditional healers are strong, especially in the rural areas where attitudes, knowledge and resources have limited the development of orthodox/modern health care. Yet, this is also a more complicated matter than simply a question of education and local knowledge, which has also been proven during my fieldwork. According to general opinion among the Yoruba, there are aspects that orthodox medicine has been unable to give answers to and which only traditional healing has been able to account for. People consider that if such questions of illness or misfortune are approached through general medical praxis, the important aspect of the entirety of the natural, social and supernatural world of which an illness is part of, is left unnoticed and underestimated (Osunwole 1990; Buckley 1985; Whyte 1997).

Similarly, it is common that people who purchase remedies at the pharmacy also use other types of treatment for the same illness. There is room for a variety of self-help practices, including a wide variety of self-medication approaches and methods applying both traditional and modern medical knowledge. The concept of 'shopping around' – that is, buying medicaments and traditional healing remedies from various sources and applying them simultaneously – refers to the everyday approach of dealing particularly with minor injuries and ailments (Pearce 1993; Hausen 2001). Later on, these may be treated by a traditional healer or a medical doctor depending on the case and whether the family is living in a rural area or in the urban centre, as well as the socio-economical and cultural contexts they are living in.

## 5 METHODOLOGY

### 5.1 Participatory Action Research and Rapid Ethnography

One of the objectives of this study has been to test the suitability of the community risk cycle model in *participatory action research* (PAR) (Whyte 1991) and to utilise *action research ethnography* (Järvelä et al. 2003). This study has not actually been a part of a development project, but it has aimed to produce results of such an approach to study communal risk identification process and a possibility of *social intervention* in the risk cycle process. With the concept of social intervention I refer to Alain Touraine's et. al. (1984) study on social movement in Poland. They argued that when studying social movements, the focus should rather be on challenging situations than responding to a situation with competitive and conflictual forms of behaviour. The approach is applicable to study a number of collective actors organised in groups; and these groups, instead of being centred on themselves, consciously present some collective action. Social intervention aims to define the meaning, which the actors themselves attribute to their action, and can be the bearer of normative values and orientations. Therefore, as Touraine et. al. (1984, 6-7) point out this technique involves experiments and positive as well as hostile arguments. Sociological intervention consists of two phases, which are direct intervention and 'conversion of the group'. The last means a stage when the group moves on to analyse its own practices and when the movement is a part of the basis of the researchers' objectives. This comes very close to the idea of the community development risk cycle model. It is the conversion of the group/community of the risk cycle process that here refers to the adaptation process to identify positive or negative development chains of action.

In PAR methods participation is seen as a guiding theme of the whole development process (Chambers 1983; Whyte 1991; Manderson & Aaby 1992; Chambers 1994a). There are different interpretations of PAR, where the position of researcher and the researched community design the research together, or the researchers do the design but the data is collected with the help of the

community, or the community works closely with the research group. Therefore, participation can differ a lot depending on the research settings and involvement, empowerment or emancipation. According to Robert Chambers (1994b, 953) Participatory Rural Appraisal (PRA) as one application of PAR methods can itself be defined as a family of approaches and methods to enable rural people to share, enhance, and analyse their knowledge of life and conditions, to plan and to act, which is applicable both to rural as well as urban contexts, even though the term particularly refers to rural contexts.

The rapid applications of PAR/PRA share a common aim to empower local people for sharing, enhancing and analysing their local knowledge in order to create more sustainable solutions in the frames of their own society (Scrimshaw & Hurtado 1988 on rapid ethnography (RE); Bentley & al. 1988 on rapid ethnographic assessment (REA); Manderson & Aaby 1992 on rapid assessment procedures (RAP). According to Utarini (2002) rapid assessment procedures has advantages over in-depth qualitative studies because of its capacity for generating information on a particular health issue in a relatively short period of time. Similarly, Miguel et. al. (1999) emphasised this approach of PAR as a tool to define 'a culture-specific map' of beliefs and behaviours that were relevant to their research. They are also recognised as increasingly important in the fields of health and environment, because there is an increasing recognition of the gap between the concepts and models the professionals use to understand and interpret reality, and the concepts and perspectives of different groups living in the community and representing different sub-communities and associations of the society. In addition, researchers have agreed that the biomedical interpretation and understanding of diseases and ill health is many times different from the local understanding. Secondly, cultural, historical, socio-economical and political factors have a crucial influence on the outcomes of interventions and efforts to improve the health of people. (Koning & Martin 1996.) Recent studies benefiting from rapid modes of PAR have focused on, e.g. identifying local coastal resources for agricultural and forest management in the Philippines (Pido 1995); making a wealth assessment among forest peasant households in the Peruvian Amazon (Takasaki & Barham 2000); in studying local knowledge and treatment of malaria in the Philippines (Miguel et. al. 1999); and in Indonesia (Utarini et. al. 2002).

My study is also based on the rapid applications of PAR and relies on rapid rural appraisal (RRA), rapid ethnography assessment (REA) and participatory urban appraisal (PUA) approaches. The research group benefited from triangulation: combining participatory observations, interviews and focus group discussions, in which the last one had the advantage of stimulating discussion among participants and providing researchers with considerable contextual data in addition to specific information of the research task. The approach was first tested in the pilot exercise of my research plan, during our ENHICA fieldwork in 1996. My decision to select an applied version of participatory approach offered me a good opportunity to share experiences and knowledge of how the local people perceive their environment and what

challenges and constraints they currently face within limited timeframe for fieldwork. Utarini et. al. (2002) have argued that the main strength of the rapid assessment procedures is its ability to reveal the *emic* perspective from the *etic* perspective, i.e. to emphasise what lay people think about a health issue and how they understand it, as opposed to studying people's understanding of "what we know" (professional point of view), which has been the aim of this study, too, as explained in Figure 1 (page 20). It is the *emic* point of view that is needed in trying to involve the locality aspect in the risk identification process.

### **5.1.1 Validity and reliability of qualitative data collected by rapid ethnographical methods**

There has been much discussion whether qualitative and quantitative data can be evaluated according to the same criteria or can the same terms of validity and reliability be used. Patton (1990) has argued that words like 'trustworthiness' and 'credibility' are more applicable to address the concept of validity in qualitative research because the threats to validity and the ways we try to ensure validity are different from what is generally used in quantitative methods. Therefore, validity and reliability of qualitative data depend to a great extent on the methodological skill, sensitivity and integrity of the researcher in the research tasks and research field.

The validity and reliability of research results can be assessed in various ways: people who are responsible for data collection can check with participants involved in the research that the information collected from them accurately reflects the meanings the respondents have sought to convey, or in the course of data collection process, interpretation of data and conclusions drawn by researchers can be confirmed or disputed by the respondents. Another way of enhancing credibility can be that occasional meetings are held with peer groups from the same community that have not been interviewed, but otherwise have been involved in the study. Through these means the researcher can become aware of possible gaps, bias or errors that otherwise might be quite difficult to observe. (Koning & Martin 1996.) This has also been the approach during the fieldworks where different groups have been involved at different phases of the research process.

Methodological triangulation, referring to the use of different kind of methods, has been agreed upon as a competent tool for ensuring validity of qualitative data (Patton 1990, 187). It is a way to cross-check information for accuracy by looking at any problem from as many perspectives as possible, but at least three. Triangulation can be achieved by using different tools to gather information on the same issue including maps, transect walks, and by interviewing different people with different points of view about the same topic (FGDs) (Townsend 1993; Narayan & Srinivasan (1994); FAO 2001). Especially in the case of focus group discussions, the group settings offer a fruitful tool for expressing opinions and attitudes that might otherwise not be mentioned or would be given smaller emphasis. This study has benefited much from the combination of the three methods. It offered immediate benefits when working

in a limited time and other resources, and gave an arena to study different aspects of the environmental health situation simultaneously.

### 5.1.2 Constraints of the fieldwork process

In Nigeria and at the sites of my fieldwork, the political situation has been rather unstable for a long period. Lagos has had a reputation of ethnical and religious violence and conflicts in addition to typical urban problems common in metropolis. In the south-western part of the country, regional and periodical clashes have occurred during the whole research period. These evolved between Ile-Ife and Modakeke<sup>39</sup>, which is a nearby town to Ile-Ife. The problems erupted again in late 1997<sup>40</sup> and continued to be severe all through the year 1998 (Albert 1999). The situation continued the same in early 1998, when we paid a short visit to the area and selected the study sites. The unstable situation continued during the first fieldwork period between April and June the same year, tension was also present during the following visits in the area. While visiting the town and some of the nearby villages, we were able to see the destroyed properties or the people would tell us stories about the recent events. Today the situation is not completely resolved, even though a peaceful solution has been agreed on among the community leaders in late January 1999.

In Lagos, the situation has been slightly different, but in addition to the complex problems with urban violence and general instability, there have also been violent clashes between Christians and Muslims, e.g. during the second fieldwork phase in 1999, when I did not work in Lagos. The conflicts resulted in restlessness, causing total chaos in restricted areas. Tension has been high, due to the unstable political situation and at festival times (Thisday 2001).

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<sup>39</sup> The Ife-conflict originates from the mid 19th century, particularly since 1849. The last crisis evolved during the period of 1997–1998. The situation dates back to the Oyo Empire and the refugees who fled from the northern parts of the country and streamed into Ile-Ife. These groups of people found the settlement of Modakeke near Ile-Ife, but were not regarded and accepted as Ile-Ife inhabitants. The disagreements about the roots of kingship, power-relationships and land tenure have been sensitive ever since. (Akinjogbin 1992, 166–286; Vaughan 1995; Albert 1999; Vaughan 2000.)

<sup>40</sup> Problems arose because a new local government area had been established, but the location of its headquarter was never negotiated with the Modakekes. Clashes between Ifes and Modakekes occurred in early December 1997, but started again in late January 1998. According to personal communication and based on unofficial statistics, we were told that nearly 50 persons were killed and about 5000 displaced in December 1997. A relatively peaceful period occurred between April and July 1998, but burst out again on 7<sup>th</sup> July 1998 due to the death of Chief Abiola at Abuja. This led to a series of protests in the whole country and to violent clashes between the two groups due to revenge attacks occurring on both sides. (Albert 1999.)



## 5.2 Design of the study

The fieldwork was conducted in Nigeria in three phases during the years 1998 and 2001 consisting of fieldwork periods in rainy and dry seasons. The first fieldwork phase was conducted between April and June of 1998, the second phase between November and December of 1999, and the third phase between February and March of 2001.

### 5.2.1 The fieldwork sites

The locations include three rural villages (Abagbooro, Oke-Ake and Elefon) from Ife Central Local Government Area, and a small rural town (Ifewara) from Atakumosa West Local Government Area) in the Ile-Ife region, and a shantytown (Amukoko), from Ajeromi-Ifelodun Local Government Area in Lagos.

The selection of the research sites was done in January 1998, when the HEPECO team with local colleagues and supervisors visited the places and met the community leaders and the local government officials. We suggested the project to them and they gave us support and the 'go-ahead'. In the meetings we discussed the general health situation of the community and common health problems as well as local resources. People were encouraged to present their own views and ideas of the study and to participate in the planning of the fieldwork period, for example, in presenting their opinions on the relevance of the research project, the research questions and of being involved in the project. Also, we discussed the practical issues relating to the methodology, such as timing and motivating the people. During the next fieldwork periods, the community leaders and officials continued to offer support and assistance.

**Abagbooro, Oke-Ake and Elefon villages** are situated along a narrow and bumpy road from the 2<sup>nd</sup> Gate of the Obafemi Awolowo University surrounded by cassava and maize fields, bushes and thick rain forest. Small trucks packed full of market goods or motorbikes drive between Ile-Ife and Tonkere, a town at the other end of the road. Many people also trek to the campus and try to get a lift from there to the town. The villages belong to Ilare health district (5) and a health ward (006) of the Ife Central LGA, which consist of mostly urban communities and the rural section where the villages are located. The district has about 3,740 houses with a population of 44,870 people. (Demographic 1994.) Table 5 shows the population in the three villages in 1991.

TABLE 5 Population in the three villages (1991 Census)

	<b>Abagbooro</b>	<b>Oke-Ake</b>	<b>Elefon</b>
<b>Total in 1991 Census</b>	<b>399</b>	<b>91</b>	<b>174</b>
Males	179	46	93
Females	220	45	81
1996 projection	455	104	198

(National Population Commission 1991)

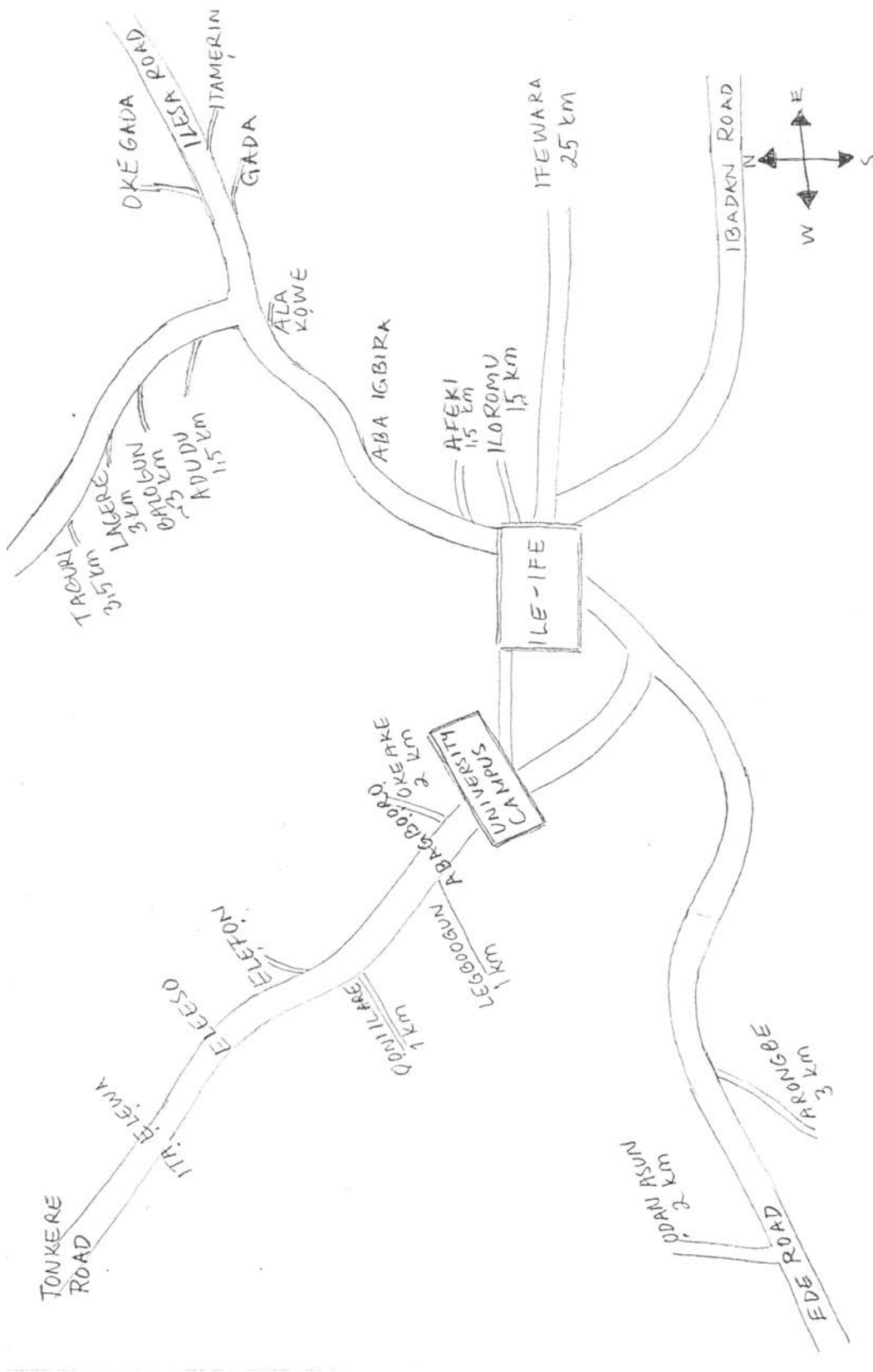


FIGURE 5 Map of villages and Ile-Ife

The three villages are headed by a *Baálè*<sup>41</sup> of Abagbooro, who is a traditional hereditary Yoruba leader. Abagbooro, meaning a 'long village' is the head village with adjoining villages of Oke-Ake and Elefon. The distance between the villages is only a few kilometres and even less when taking short cuts through the forest. Each village has between 20 to 30 houses<sup>42</sup>.

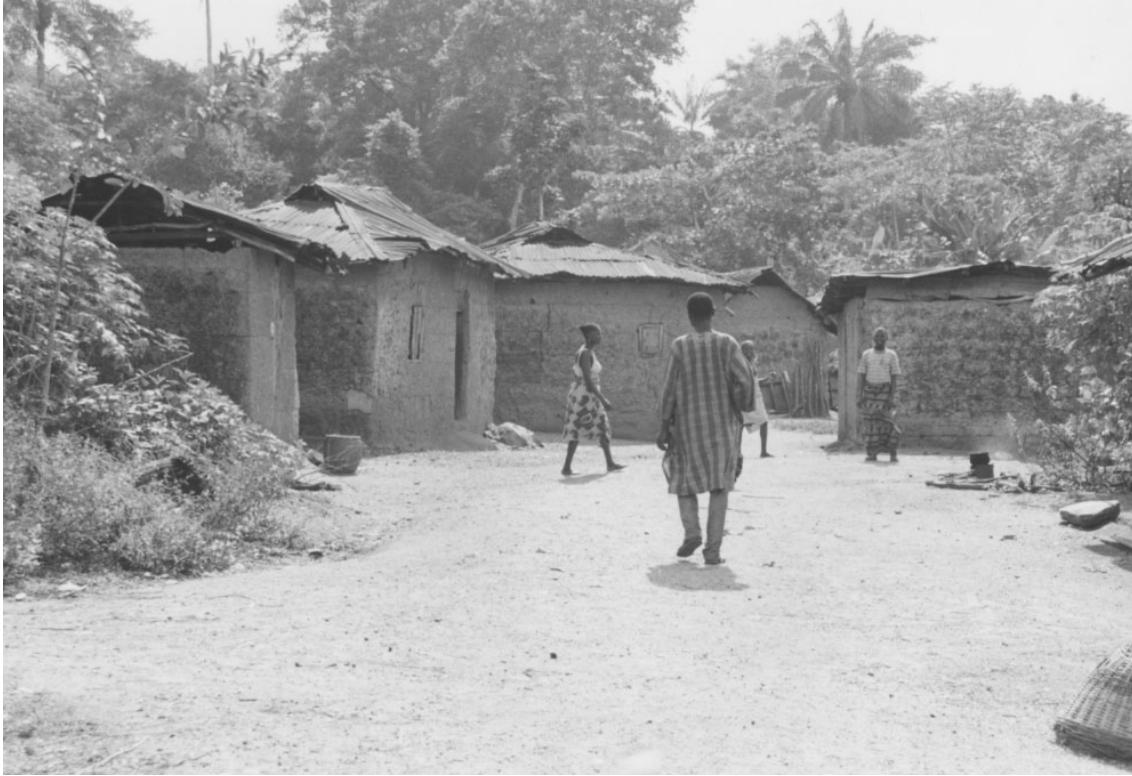


FIGURE 6 A view over Elefon (1999 E-M R)

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<sup>41</sup> Besides Local Governmental Authority traditional leadership systems prevail in each village and town in Yorubaland. Each village has a traditionally inherited leader, a *Baálè* who can have several villages under his rule. He is the head of a village or a small town. (Abiodun & al. 1994, 120; 268; Sadiku 1996.)

<sup>42</sup> In 1998, *Abagbooro* had 33 houses, *Elefon*, 31 houses and *Oke-Ake*, 22 houses.



FIGURE 7 Firelighters on the wall and a kitchen hut in Oke-Ake (1999 E-M R)

The houses are built of mud bricks and have corrugated iron roofs and dirt floors. Firelighters, common artefacts prepared by rural women hang on the walls from the fibres of oil palm seeds. The windows are small and few and have shutters to keep the house cool and to prevent flies and mosquitoes from entering the rooms. Each house has two doors that are situated at opposite ends of the house. This forms the main ventilation system, “through ventilation”, because the few windows are usually kept closed. A corridor divides the house into two sections, where rooms are found. It is normal to have 6–10 persons living in the same house, but even more when there are visitors or relatives present, although often the husband or older male members of the family have separate rooms. Kitchens are small, open huts and they are located between the houses and shared by many households<sup>43</sup> where also firewood, water pots and household utensils are stored. Crops and clothes are dried in the sun on the ground near the kitchen huts where also chickens and goats freely wander.

<sup>43</sup> The number of kitchens varies between 14 and 25 in one village out of the three.

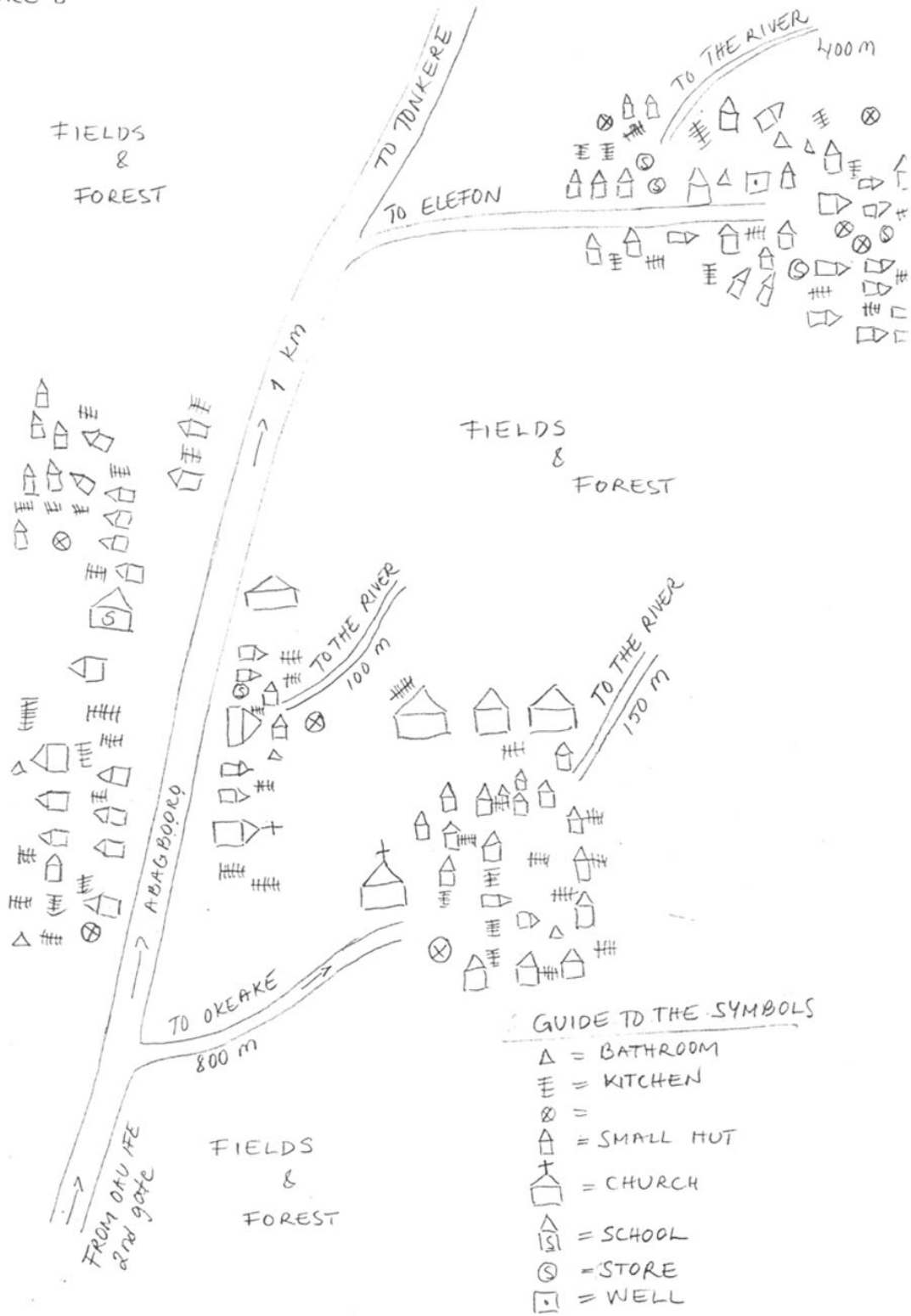


FIGURE 8 Map of the three villages and their water sources



FIGURE 9 Boys are going to fetch water before the sun goes down (1999 E-M R)



FIGURE 10 A nearby stream in Abagbooro (1998 E-M R)



FIGURE 11 Water containers kept in shadow of a hut (1998 E-M R)

For household water, people depend on streams because there is no piped water or wells in the villages as can be seen in the map. Only in *Elefon* do people have a common well, which usually dries up during the dry season. In *Abagbooro*, the stream which is situated close by is an advantage, because it usually never dries up. In *Oke-Ake* the situation is slightly different, since the stream is located a few hundred metres further away. People use small huts for bathing and toilet facilities or go to the bushes. A similar practice is done to wastewater, and other human-based waste.

**The small town of Ifewara** is located about 25 kilometres from Ile-Ife and in 1991 had a population of 3,927 people, of which 1,883 were males and 2,044 females (National 1991). Even though Ifewara is an independent town with its own Oba, who is a Yoruba king, it is closely attached to Ile-Ife regarding services and economy. The way of life does not differ much from that of the rural villages. The houses are built of mud bricks or cement, with cement or dirt floors. However, the houses are often bigger than in the villages, and some may even have electricity, but piped water connections are not common. It is available from a few locations on the main streets, e.g. at the market place, but only a small amount of people have piped water connections drawn in the house and even if they had, there is no water running in the pipes.

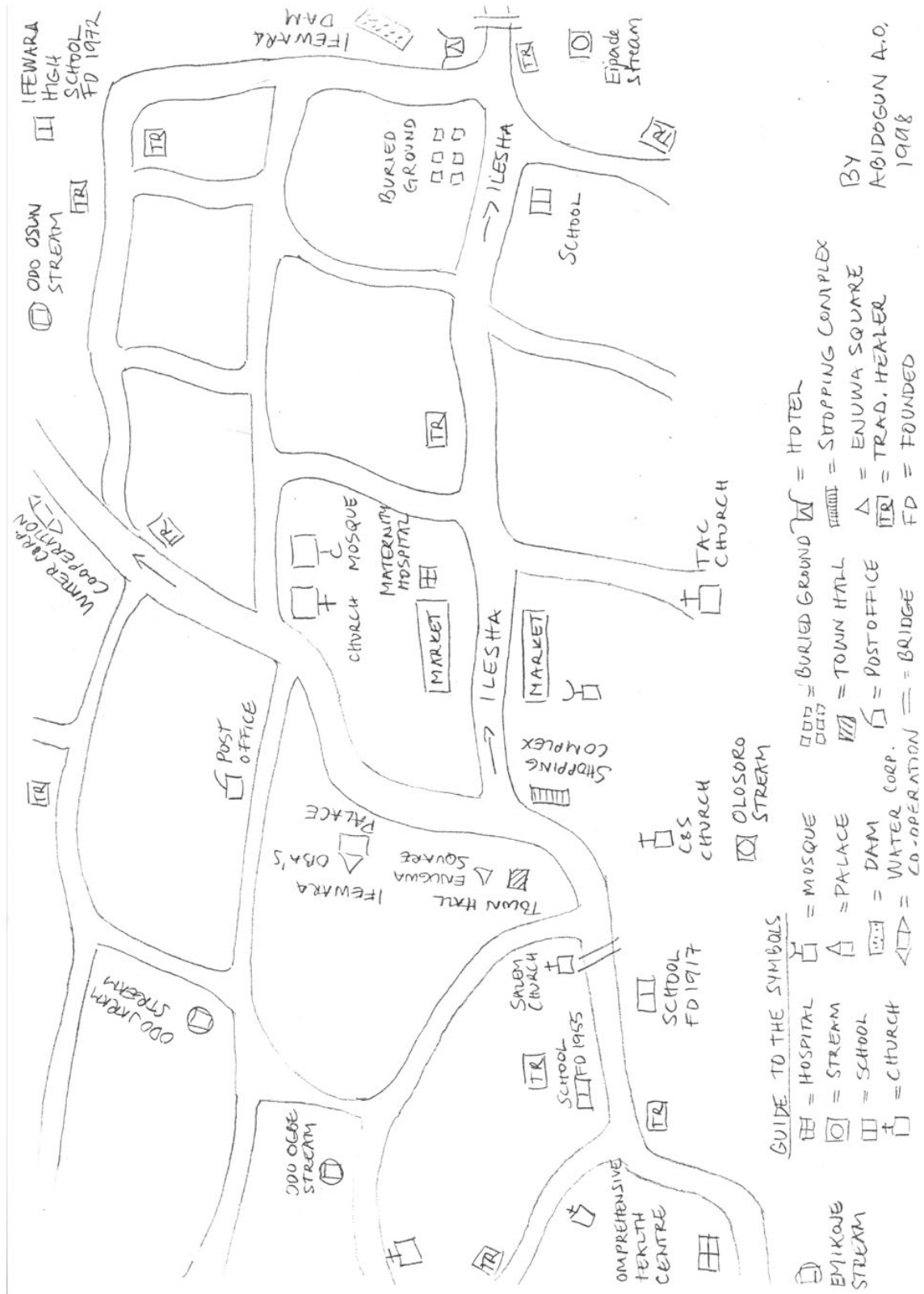


FIGURE 12 Map of Ifewara





FIGURE 13 A view over Ifewara (1999 E-M R)

The map of Ifewara shows the main areas of the town and ten streams around the town. Many are located in a hollow and the red ground makes the water have a brownish colour. Households of the compounds share a well located at the backyard of the compound and where the kitchen huts are also found. This is the most common cooking place, but when it rains women cook in the doorway.

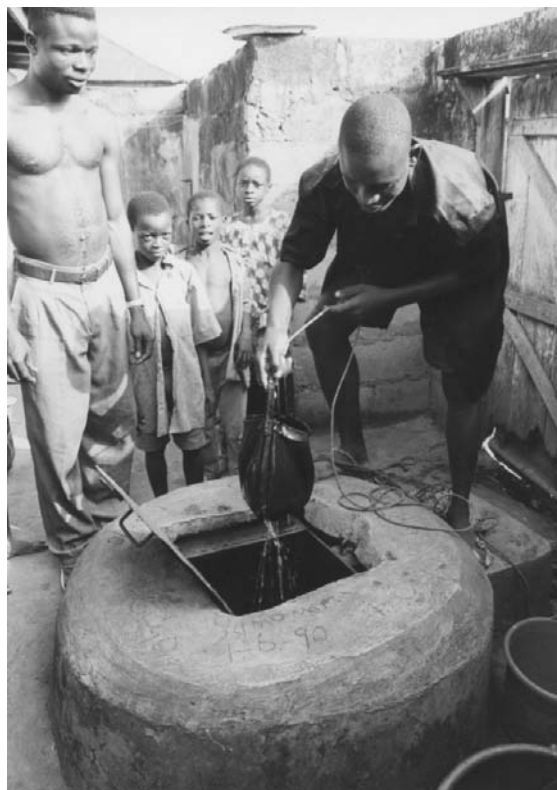


FIGURE 14 Water is drawn from a compound well in Ifewara (1999 E-M R)

**Amukoko shantytown** is a typical fast-growing shantytown area located in the Lagos mainland. It is very densely populated, since the area covers approximately 2.25 sq. kilometres with an estimated population of 320,000. The population consists of a mixture of all major ethnic groups, with a predominance of Yoruba. (MSF 1997.)

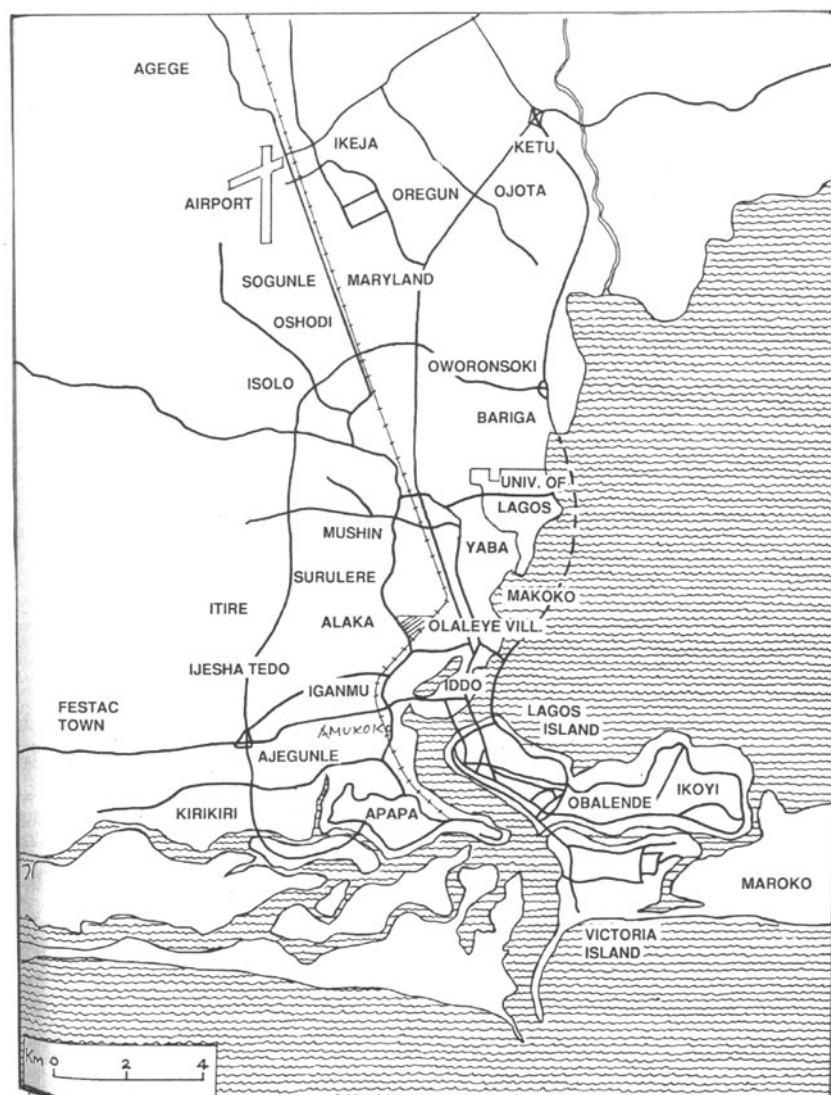


FIGURE 15 Map of the Metropolitan Lagos area (Aina 1990, 23)

The shantytown is located in a swampy area and there are two big canals filled with stagnant water and waste. The streets are often nearly impassable, with a poor drainage system and huge refuse dumps. Almost every available space is built-up with concrete houses (face-me-face-you houses, e.g. Kuvaja 2001) containing 10–15 rooms with an average of 8–12 people per room. Many houses lack toilet facilities, water and solid waste disposal systems. Waste is generally dumped in the drainage or burned in the backyards. Household water is normally bought from water vendors or drawn from the wells located in the compounds. There are six public primary schools and two public secondary

schools with a population of over 17,000 students and 270 teachers. There are four main markets located in the area whereas there is only one poorly equipped Primary Health Centre. The numerous private clinics in Amukoko provide very expensive and poor quality medical care to the small fraction of population that can afford it. At present, many favour the use of traditional healers instead. (MSF 1998.)

### 5.2.2 Research instruments

A variety of methods have been used to collect the qualitative data of this study: *in-depth interviews, Focus Group Discussion and participatory observations*. The guides for the instruments were tested before the actual fieldwork started, in the beginning of Phase I, at adjacent locations of Ile-Ife environs and in Amukoko. In addition, my research questions have been formulated from the results of a pilot study conducted in 1996. All sessions were tape-recorded, transcribed into Yoruba and translated into English by the research team members. The researcher team consisted of me, and a group of local research assistants and a driver, and some fieldwork experts were also consulted from the local university. The team was supervised by Professor of Sociology, Mrs. A.I. Odebiyi, from Obafemi Awolowo University, Ile-Ife. The research team recruited the informants with the assistance of community leaders and key persons of the communities.

**The in-depth interviews** followed the typical pattern of in-depth interviews (Silverman 1985; Patton 1990). Attempts were made to hold the interviews in a peaceful place and with minor disturbances. At times we were not able to follow the interview guide strictly but would then return to continue the interview another day if the person had become too busy or otherwise distracted by the everyday tasks. Interviews were conducted among women and men at the study sites with the presence of the researcher and a research assistant. The meetings were held at private locations in respondents home or in the yard of their home. Women were usually carrying out some household tasks or taking care of their children during the interview. Each meeting took between one to two hours. Questions concerning practical household duties were applicable to the respondents' gender. As men do not practically take part in household tasks, they were merely asked to describe how their wives, mothers or other female household members conduct the duties. This was assumed to give an interesting overview of the differences between everyday reality, understanding and imagination of household duties in the community.

Originally **Focus Group Discussions (FGDs)** were designed for marketing research in the 1920s (Calder 1977), but for a long time the method has also been applied to other disciplines. During recent decades, FGDs have been used quite extensively in social and health sciences (Bentley & al. 1988; O'Brien 1993); in studying attitudes; opinions and perceptions of matters concerning health and illness or health care services in the developing countries (Scrimshaw & Hurtado 1988; Khan & Manderson 1992). The FGDs have proven to be a qualitative tool to approach the question of 'what people are thinking about

what they are doing' (Silverman 1985). There are group interviews taking different forms and emphasising observation and free-flow discussions under specified themes. One of the benefits of the FGDs is that they offer an opportunity to collect information from the 'real world' covering not only the questions about the conditions or the opinions, but also on explanations, experiences, views and attitudes as well as expectations towards the particular issue. Actually, the method operates between an observation and a structural interview, combining applicable elements of both approaches. (Pötsönen & Välimaa 1998.)

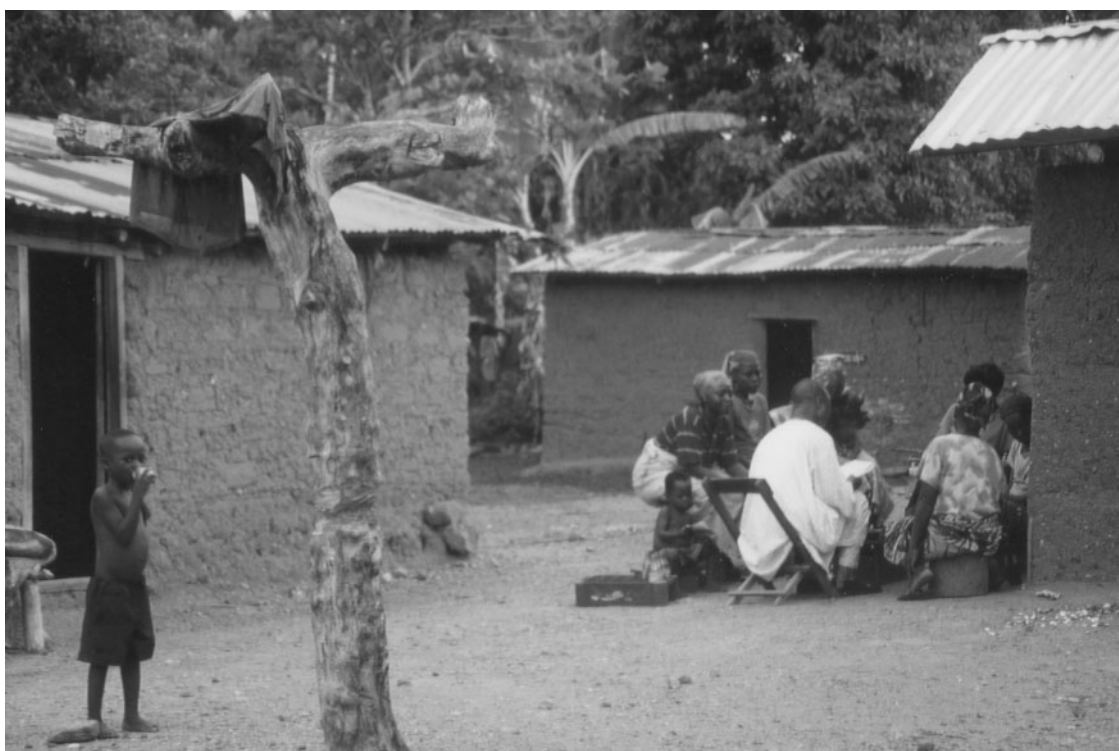


FIGURE 16 Conducting FGDs in the village

In this study, FGDs have been used as an equal method besides in-depth interviews and observations. The FGD meetings followed the typical pattern of FGDs (Khan & Manderson 1992; Dawson & al. 1993; Barbour & Kitzinger 1999). The criteria for the members of FGDs were that the participants would share certain characteristics, such as gender, age and occupation. In the rural communities it was not possible to form groups with teachers or community leaders. Instead, the emphasis was on age and gender differences and status in the community. In Amukoko, groups for teachers and male community leaders were also conducted. Each FGD had between five and 12 participants, was led by a trained research assistant and a facilitator and took about an hour. The discussions were held at various premises in the villages and compounds, either in the yard or inside a participant's house depending on weather and other such conditions.

The aim for **participatory observation** (Patton 1990; Whyte 1991) was to get an overview of the everyday life practices of the communities and to be able to describe the typical daily activities of women and men in the communities. An observation guide was defined, which the participant observer followed when collecting information in the villages and making systematic notes. This included information about how the houses were situated, types of houses, location of wells or other water sources, location of schools and health posts and other relevant areas, such as markets and Oba's palace<sup>44</sup> or the village head's house. Also the everyday life settings were photographed quite systemically, after obtaining permission from the local people. In the first phase, two observers were posted to live in rural communities for a period of two months. The research team participated as much as possible in the everyday activities during the field visits. Later on, participatory observation was conducted as part of the regular visiting of the research sites following the original observation guide to update information of the research sites.

### 5.2.3 Fieldwork phases

The first fieldwork period, **Phase I**, was conducted between April and June 1998, during the peak of the rainy season when the heavy rains began as we started to work. Sometimes floods of water almost prevented us from reaching a village, sometimes it was just drizzling rain with high humidity. During Phase I, the most extensive data collection methods were used compared to other fieldwork periods. The research team consisted of researcher, four research assistants<sup>45</sup> (two females, two male<sup>46</sup>) and two male observers located for a period of two months in the research sites in the Ile-Ife surroundings. In Amukoko, the research team consisted of the researcher and a female research assistant<sup>47</sup>.

Before Phase I started, we had organised a three-day training course with the research team when the choice and the wording of questions had been tested and framed in Yoruba. Households were selected by a systematic random sampling technique by the research assistants, particularly by the observers who stayed in the local communities. In Amukoko, the research assistant was already familiar with the area, because she had been employed by Médecins Sans Frontières (MSF).

In-depth interviews were conducted between men and women and among male traditional healers. Altogether there were 35 interviews. In Ile-Ife region there were 24 interviews (16 women; 8 men) and 11 interviews (5 women, 6 men) in Amukoko, Lagos. Half of the respondents were less than 45 years and

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<sup>44</sup> Oba is a local Yoruba king.

<sup>45</sup> All research assistants and observers were local Social Sciences undergraduates in 1998.

<sup>46</sup> One of the four research assistants was from the University of Jyväskylä, Finland, and the other three from the OAU, Ile-Ife, Nigeria.

<sup>47</sup> She was also a social sciences graduate in 1998 and was working at the MSF Lagos office.

half more than 45 years old. The female participants' age range was from 20 to 80 and the male participants' age range from 20 to 90. There were 12 Christians and 12 Muslims among female participants. Of the male participants there were seven Christians and one Muslim participant. The major occupations included farming (men) and petty trading (women), but in Amukoko there was more variation between the occupations than in the rural areas. 15 women and three men had received at least some education. The interview guide had 12 sections under the themes of availability of household water, perceptions of safe water, sanitation and environment hygiene and the relationship between water, diseases and health<sup>48</sup>. In addition, basic information about the respondent's socio-economic background was collected.

A total of 26 FGDs were conducted, 18 in the Ile-Ife environs and 8 in Amukoko. Seven different groups included old and middle-aged women; young and middle-aged women; old and middle-aged men; young and middle-aged men; teenage girls; teenage boys; and male traditional healers. The themes concerned people's perceptions of safe and contaminated water, the relationship between water and health and general health behaviour when faced with common illnesses.

In the three villages a participant observer was staying as a member of one household. In this case, it was considered sufficient enough to have one person staying in the three sites, since *Oke-Ake* and *Elefon* villages are adjoining villages of the head village of *Abagbooro*. Also the distance between the villages is less than one kilometre and a lot of communication takes place between the villages. In *Ifewara*, the observer was located at the health centre and lived with the doctor's family. Other observation practices were conducted according to the general outlines of the whole research process.

As a part of the participatory observation, we organised a 'walking tour' in the beginning of the fieldwork by conducting transect walks in company with some local people through the study area (Laitinen et. al. 1995: Townsley 1996). These walks are done in the company of the local people to get an overview of the community and its environment conditions. The method offers a natural way to observe everyday ongoing activities in the village or compound and to talk with people about them in a freer manner. In addition, the locals got to know us and saw the community's commitment to cooperation when we were seen with the local people, often a key person of the community. Based on the transect walks, descriptive maps were drawn of the research sites to provide a basic sketch map for usage during the research process, in identifying the main water sources, the distance between houses and the source, and the location of kitchens and bathing areas (ref. Townsley 1996), which have been presented when describing the research sites.

A modified time-chart form was used to test its suitability as part of the methodological objectives of the study. It included a list of household practices

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<sup>48</sup> The topics of the interview guide were: practices of fetching water, perceptions of safe water, amount of water, storing water, managing waste water, environmental hygiene: defecation and use of latrines, managing waste, illness and disease, when illness occurs, avoiding illness, well-being and health, and perception of taboos.

that women normally conducted during the day such as fetching water, washing, sweeping and cleaning the house and cooking, and was collected among four women at each site for the period of a week. This was regarded as a useful method in analysing the workload, absence of rest periods or the number of tasks packed into the same time of the day. Furthermore, it could indicate possible role conflicts between women and males in a household. The total amount of time-charts is 12.

The second fieldwork, **Phase II**, lasted four weeks between November and December 1999, and was conducted in the beginning of the dry season. The rains ended during my stay and the daily temperature went as high as 35 degrees centigrade, but lowered to 10 degrees in the night as the *Harmattan* season was arriving with its sandstorms. During the four weeks time I only stayed in the Ile-Ife area, because of the unstable situation in Amukoko. I was assisted by a female research assistant, who had worked with the other HEPECO researcher in 1998, and by a driver, with the supervision of the Professor of Sociology. Interviews were done involving the same persons involved in Phase I, and a number of other people were recruited by a snowball effect.

The in-depth interview questions concerned life histories of Yoruba women, current situations and matters related to water, health and fertility. The questionnaire included three sections: life history and current situation; water and health matters; and charms and amulets for better health. A total amount of 12 FGDs were conducted under five different groups. These homogenous groups were old and middle-aged women; young and middle-aged women; old and middle-aged men; young and middle-aged men; and male traditional healers. Furthermore, the information from the time-charts (Phase I) was checked in informal discussions and by observations. Topics for FGDs were framed under five themes to complete the already collected data including themes such as: rights over water, uses of water, what is wrong with water, water in healing, and health and misfortune.

The third fieldwork period, **Phase III**, was conducted during three weeks between February and March 2001, to update and collect supplementary information about the research sites. It was the peak of the dry season and the landscape was totally dry as the rains were later than normal. I mainly stayed in Ile-Ife, but paid a short trip to Lagos. The methodology consisted of open-ended interviews among women, and observations and meetings with local government officials. I worked this time with a male research assistant who had been involved with the HEPECO project in 1998 and had a driver to drive us around. In addition, the Professor of Sociology from the local university supervised the fieldwork.

In addition to daily visits to the communities involved in the study, where I interviewed the men and women already involved in the study to complete the previously collected data and to check some issues, I focused on collecting official information as much as possible from the local authorities. I was interested in the registered environmental health indicators of the LGAs,

current level of environmental health services and prospective future plans to improve the local infrastructure. During the earlier phases of this study attempts had been made to collect such information, but the opportunities to meet the local authorities had always been rather limited. As I had become more familiar with the local formalities and had been able to establish good relations with the local stakeholders, these tasks were now easier to achieve.

In Lagos I visited the MSF head office and interviewed the staff about the past health project in Amukoko, which had been handed over to the local UNICEF office in late 2000. A couple of local health workers involved in the programme were still present and were willing to be interviewed. The project documents from Amukoko were also available. In spite of the original plan, visits to Amukoko could not be conducted as no one from the office was visiting Amukoko anymore, and I could not go there myself without the support of our local partners.



## 6 RESULTS

### 6.1 Situation of household water – prevailing practices between ‘traditional’ and ‘modern’ management of everyday life

The full cycle of household water has not been described in detail in the articles of this study and therefore it is considered important to provide a description of the water cycle process here. The findings confirm that **a variety of water sources** are used in all the studied communities (Articles I, III, IV and V). The majority of water for all household activities is still fetched from various unstable sources in all the studied communities. In rural villages and the town of Ifewara the main sources are the nearby-located streams, but in Ifewara wells also are important sources of water. In Amukoko, wells, boreholes and water vendors constitute the main sources of water.

In the rural areas the streams are under a lot of pressure and therefore people prefer to use surface water as long as they are able to evaluate its suitability for household use, either for human consumption or either for other tasks such as bathing and cleaning. Rainwater is collected during the rainy season and it is used for drinking and cooking tasks. Wells are of little importance in the villages as there is only one in the three villages, and it is said to dry up easily during the dry season. In Ifewara, well water is mainly used for other household tasks than drinking and cooking, but when the streams become dry, well water is also used for human consumption. In Amukoko, well water is often considered salty and the water as contaminated, because of the location on swampy land and the nearby lagoons and seashore. Also the overcrowding of the living environment, particularly the location of toilets near wells and the generally poor level of sanitation pollute the ground water in wells.

When people in the studied communities have been asked what kind of water they preferred, they normally prioritise piped and treated water. However, different opinions exist concerning the quality and stability of piped water. Many interviewed people complained about seeing some particles or

colour in the piped water or sensing a particular smell or taste in it. It is common knowledge that everyone expects piped water to be clean and without any suspect qualities, thus any disturbance in the quality makes people suspicious. In addition, because of the unstable supply of piped water there may be several days or even weeks when the pump does not work and the pipes remain dry. During this time people have to search for alternatives and they are sometimes even forced to turn to generally recognised unsafe sources of water. An extreme of this is the canal water from Amukoko (Article IV and V), which runs through the community and has an unofficial dumping site status in addition to being a source of water, especially at times when water is scarce.

Consequently, even though piped water has been established in towns and even some villages, there is a clear lack of maintenance and co-operation to further utilise this resource. When people are not able to rely on quality and continuity of the supply of potable water, they have to turn to other alternatives, even though this could mean dependency on the unstable quality of drinking water or extreme shortage of water at times. For example, in Ifewara, communal piped water system has been constructed, but it has not been well maintained, so the only stable and concrete alternative is to fetch water from the ten streams located around the town. There are no organised water vendors in the town, so it is not possible to buy water regularly, at least in large quantities. Bottles of drinking water are available at shops, and some wealthy people with piped water or a protected well may be willing to sell water from their homes when the water scarcity in the town is severe. However, then the need for water has increased and it might not be enough for the people in need. Therefore, these unofficial means to acquire household water are not sustainable solutions for the whole community. In Amukoko, the community should be able to rely on piped water, because the whole city is connected to the established piped water scheme. However, the reality in the shanties is totally different due to the lack of infrastructure and maintenance, which forces people to rely on a number of unreliable water sources.

**Women are the key actors** of water supply and sanitation on a household level and the amount to which they are occupied with water and sanitation tasks, depends on their status in the family hierarchy, i.e. whether they are in a polygamous union and the number of children they have. The children may be entitled to fetch water independently or with the mother or a female member of the family. Men rarely fetch water, only when there is no one else to do the task or due to an illness in a family. Older women or the elderly wife of a polygamous husband may ask or even pay someone else to fetch household water, but normally they are also involved in fetching water. Occasionally, women help each other. Normally this is done in exchange of mutual help.

The quantity of water used depends on the number of household members present, thus it is considered to be a difficult task to estimate daily consumption in general. As people cohabit between their town houses and farms, it is even more difficult to estimate their water usage in quantities. In

FGDs and interviews many women said that they fetch water any time they need to. However, the number of times they go to the water source depends also on the distance between the household and the source. If one lives very close to the stream, one is not so worried about storing water in the house. In the three villages, some of the houses are located a short distance of a few dozen metres from the stream, while some others are further away, half a kilometre or more. Hence, they do not fetch water as often as those who live nearby.

It is preferred to fetch water either early in the morning or late in the evening, because the quality of water is considered to be best then. Then water has had time to settle down, and especially in the streams, the sediment has not risen up from the ground. During the daytime, when a number of people may walk in the stream, the water becomes muddy and the heat of the sun is at its peak. According to the village women, at the minimum it takes normally about 30 minutes to fetch water, but this is during the rainy season. When there is a scarcity of water, it may take several hours, especially if the women at the stream have to wait for the water flow to become stronger. The women from Amukoko told us that they often have to go to the neighbouring areas in search of water, where they are sometimes faced with conflicts with the people of that area. When water is scarce, there is a lot of pressure for mutual help and prices for water go high.

The amount of fetched water is considered sufficient or too little for their daily usage. Many women would use more water, if it would be easily available and, if it would not demand a heavy workload, which is required when carrying water from the stream. For the time being, as long as the stream is flowing, the water is regarded as sufficient for everyday tasks. Many times people do not have any alternative for the water supply and therefore, they have to adjust to the current situation and see the benefits of the prevailing water sources. Most of the families use only a few pails for the whole family consumption per day, but when there are visitors or the whole family is present, the usage is more and it could be up to one keg (about 50 litres) for a day. However, more water is needed during the dry season than during the rainy season. A natural reason for this is because during the peak of the heat one needs more water for drinking and sanitation. Also, during the dry season many special tasks for the household are conducted. Men process mud-bricks for the houses that are being built and women prepare home-made goods that need a lot of water in the process, such as palm-oil processing and preparing fire-lighters:

“It is more difficult to get water in the dry season. If one is not careful one may get germs from the water in the dry season. We use the same amount of water in the household in every season. However, for my work, which is palm oil processing, I use more water in the dry season. That is when the work is at its peak.”<sup>49</sup>

The tools and containers used in fetching water consist of pails, buckets, kegs and bowls of plastic or steel. Water is usually fetched with plastic containers, carried into the house and then stored in clay pots inside the house in a shaded corner. Women say that they clean the containers every time they fetch water or whenever they consider it necessary. Cleaning is done with sponge, water and soap, usually near the stream. The cleaning water is thrown away in the near bushes (villages), drainages (Ifewara) or into the canal (Amukoko).

Most women use different buckets for fetching and for storing purposes. The plastic ones are used for fetching and the clay pots are used for storing water. It was said that the traditional clay pots keep water cooler than the plastic containers, thus clay pots are preferred. Women separate different water buckets for bathing and drinking water. Water is stored to ensure the availability of drinking water any hour of day. Because of many household tasks, women are not able to fetch water all the time, and thus usually keep a convenient amount of water stored inside the house. At times they would be too busy to fetch water for immediate purposes, or the source would be too crowded. Yet, observations confirm that the containers are sometimes used for other purposes, too, such as cooking food, making pap, selling corn, washing cola nuts or other purposes.

The findings show a number of **constraints in the water and sanitation situation**. Beside the lack of a stable and reliable water source, *overcrowding* has become quite a serious concern both in the rural communities as well as in the shantytown setting. This is a concern especially shared among women, who are responsible for fetching water on an everyday basis. Especially in the urban areas, queuing at the stream or water tank requires more time now than earlier times. As the number of people has increased, the queues have become longer and people's capacities to tolerate the pressure have reduced. Fights at the source and loss of time are experienced as severe constraints, in addition to the reduced quality of water because of increased consumption and environmental pollution in the living environment as a village woman tells:

"We fetch water the same way today as we have been used to do it. But, I know that it is more difficult today, because the population has been increasing compared to the population in the past. We are too many here now... people now even fight at the stream over water, but in the past it was not like that. I was born in this place and I know how it was done."<sup>50</sup>

The effects of *seasonal variation* differ slightly between the study areas. In Abagbooro, the stream is said to stay strong all year round, and there would be enough water for the needs of the people staying in the village. In Elefon village, the distance to the streams is longer and the flow is not as strong as in Abagbooro. During the peak dry season, not many people stay in the village but go to their town dwellings, as there is a shortage of fresh water in the village. However, the situation is not much better in Ile-Ife, but people have more alternatives to choose from. The situation is somewhat similar in Oke-Ake

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<sup>50</sup> HEPI 1998/2.14

village where many stay away during the driest months. In Ifewara, people face similar problems but there is always water in some of the tens of streams in the area and, thus, people do not face an absolute lack of water as such because it is said that the streams do not totally dry up during the dry months. Also our observations confirm that some of the streams have water throughout the year. In Amukoko, people may not experience the shortage of water during the dry season as immediately as it is faced in rural areas, because the supply of piped water may last longer compared to water flowing at a stream. However, a total lack of water becomes a problem when the boreholes dry up and piped water stop running at the same time. As the rains start and become more constant, streams are full of flowing water and people collect rainwater, too. Also wells become full with water. Soon the streams flood with water creating another kind of problem with the surface water. The strong floods of water deteriorate the ground and water becomes brownish and mixed with sediment making it vulnerable to contamination.

The *threat of contamination* is always present when managing water and sanitation issues on an everyday level. It is considered important to protect the household water from contamination, starting from the place where the water was fetched, carried home and then stored at home. Also it is agreed that insects and germs can get into water in different phases of the water cycle. Practices at home aim at preserving the good quality of water: there are rules how to handle the water containers and who deals with water issues and who can for example pour water from the container. There is usually a small cup or a bowl for the purpose of taking water from the container for common use. No hands are allowed to touch the water or the container inside it. Some prefer to use a type of reservoir such as jerry cans, which need to be poured to get water from them:

“Because any cup can’t enter the jerry cans, water is poured from the jerry can to the cup. It is to avoid any dirty things getting into water. As I said, we only pour water from the jerry can and do not allow anything to touch it. The jerry can is covered.”<sup>51</sup>

Storing for long periods is also considered to be a source of contamination. What the women perceived as long periods of storage, varied between a couple of days to four days. Both women and men presented quite similar opinions that long periods of storage are not good for the quality of water in the FGDs. After storing the water for a few days the water is not anymore regarded as good for drinking, especially if some particles are easily seen in the water. The visual observation is important, as one woman said, “seeing is believing<sup>52</sup>” (Article III). According to the women, poor quality of water includes colour in the water, bad odour or taste, or there are small particles such as insects, worms, excreta, or any other particles of foreign bodies in the water.

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<sup>51</sup> HEPI 1998/2.1

<sup>52</sup> HEPI 1998/2.10

An important aspect of the threat of contamination concerns the *management of wastewater*. Often wastewater is simply poured into near bushes (villages), in the backyard (Ifewara and Amukoko) or anywhere at the outer back, even into the canal (Amukoko). The people often mentioned that the wastewater could be collected and put in a certain container, but in practice not many did anything of that kind. Similar practice is done with bathing water, which often goes to the back of the bathroom hut. In the rural areas this is often a small hut made of bamboo and wooden bricks with a ground floor. When bathing or washing clothes is conducted in the stream, the wastewater is thought to be swept away by the stream flow:

“I throw the waste water outside my house. If you have a bathroom, then there is no need... or water could be thrown into the river that will carry it away.”<sup>53</sup>



FIGURE 17 Bathroom hut in Oke-Ake



FIGURE 18 Bathroom hut in Ifewara

## 6.2 Local knowledge for detecting environmental health problems: perceptions of the relationship between safe water, health and disease

Local communities have strategies based on community unity for managing environmental health issues. These are not always referred to as such, but rather taken as a natural part of community action, in forms such as regular cleaning practices for stream-basis or by conducting common waste collection actions (Articles III, IV and V). However, it is also not considered to be a clear strategy, as many of the communities also involved in this study clearly stated the prevailing disbelief of larger community-based environmental action – programmes and they wanted to avoid talking about ‘environmental programmes’ as such. This is based to a large extent on the negative experiences of the former Environmental sanitation Days Programme in Nigeria.

In addition, the community unity is represented in everyday practices by following the commonly set and controlled rules of, for example how to behave at the common water source, what containers to use when fetching the household water, how to store water and how to deal with waste water. These are closely linked to the question of water rights (Article III). However, many community members, even those in strategic positions, such as traditional leaders or community leaders, expressed their concern of people not always following the commonly set rules. Especially in the urban context, where the

overcrowding increases environmental health stress and the capacity to manage any kind of water and sanitation problems, the sense of community unity is tested a lot. This is so, even though otherwise the community in the shantytown setting would follow the 'traditional community life pattern' nearly exclusively. One argument of this study is that such a distinction cannot be made between traditional rural and modern urban communities. Rather, the point here has been to show similarities and differences between the two arenas in the continuum, and show this as a one possible indicator of hybridisation of culture.

The perceptions between the relationship of water, health and illness depend on the questions people pose on the elements of well-being and health. The findings show that in addition to the hygiene and sanitation aspect, many water-related perceptions are linked to *biological reproduction* issues and the importance of *fertility and children* of women. This is due to the common idea of water as the primary element of life among the Yoruba. In addition, the strong connection to the Yoruba religion and Yoruba gods, such as the river god *Osun* and other gods related to the issues of health and illness, are of importance. Elements that have been related to perceptions of safe water are thus related to the issues of fertility and its implications on individual, family and community levels, discussed in more detail in Article II.

According to the findings, the **perceptions between safe water and disease** are based on a number of factors explained in Table 6 below:

TABLE 6 Perceptions of health and disease

Factor	Evidence
Origin	'Worms as a part of the body'
Symptom	Visual evidence: colour, particles, taste, odour
Location	Places considered 'sacred'
Misbehaviour	Community rules and regulations
Stigmatisation	Family and community membership

In the studied communities, water-related diseases are often explained by the fact that normally a body carries some worms, of which some are more harmful than the others, an idea recognised quite commonly around Africa (e.g. Geissler 1998a; 1998b). This is due to the fact that the majority of the people suffer from intestinal worms at some point of their life. Also in my study, people connected symptoms caused by worms in a body to drinking polluted water from a stream or a well, but also explanations of having a sexual relationship with someone other than the spouse, as well as general overcrowding of the living environment were given. The findings are much in parallel with Robert et. al's (1989) findings from Cameroon communities who reported that people explained the transmission of *shistosomiasis* that "the microbe can make its way up from the stream" when someone is urinating in the stream bank. In my data, people used this explanation generally referring to diseases with intestinal disorders or visible worm observations in the body, but did not link it



particularly to *shistosomiasis*; this is perhaps because the disease was not well-known among them.

In the interviews *Guinea worm disease* was commonly explained by the fact that worms are a natural part of the body and it is the balance that makes it evolve in someone whereas with someone else no worms appear. The reason why the worm is activated and comes out of the body gives the ultimate explanation of why someone became sick while a neighbour did not face similar symptoms. Therefore, methods for prevention are not easily accepted in a community, particularly if they would require special involvement at home or in the community, or a change in the everyday habits such as avoiding a commonly shared water source and new work-loaded methods to treat water before consumption. Whenever the link between a particular symptom and a source is not identified or it is strongly against the 'communal order of things', it becomes a critical issue for communication between the local people and the LGA's health officials.

Similar results have been shown in recent *river blindness disease* programmes<sup>54</sup> conducted in the rural sites of this study. The programme had included annual distribution of *Ivermectin* medicine and health education for the community members to regular clean their water sources, which were also conducted quite extensively but with varying motivation. However, the reason the communities have recognised the need to maintain the good quality of the water source is based at least partly on other reasons than the programme. Instead, the main reason given by the informants was that by regular cleaning they show respect to their ancestors and river gods. The river gods have a strong status in the Yoruba religion, especially in aspects related to well-being, and health and they represent the origin of life.

The communal rules regulating the uses of water sources, behaviour at streams and rivers and managing the communal water reservoirs aim at reproducing the communal 'order of things', based on the reasoning of Douglas' theory of the institutional thinking of the community. The findings confirm that the ideas given to purity and pollution are considered as primary criteria for moral codes guiding the positioning and organisation in a community. Whenever someone is found breaking the common rules, he is given a harsh punishment defined by the community leader or a group of elders (Article III) and it is considered as an attack against the whole community. Water from the streams or other natural sources is generally considered everyone's right and property, and therefore any misbehaviour leads to careful consideration of the consequences it has on the whole community. The rules and regulations may vary between villages and urban shantytown, but the idea of the 'order of things' was recognised in all the study sites.

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<sup>54</sup> These have been a part of the APOC (African Programme for Onchocerciasis Control) programme covering 11 countries in West Africa (1997 APOC/WHO [www.who.int/ocp/apoc/apoc001.htm](http://www.who.int/ocp/apoc/apoc001.htm))

Concerning **general perceptions of seeking treatment for illnesses**, most people tend to wait a few days before seeking medical help and try to manage within the family, when faced with any problems related to their health status. For example, Whyte (1997, 26), presents that in Uganda, people tend to say 'there is a reason' when a problem goes unsolved as time goes by or when other efforts have been made, but the problem persists. This means that causes have to be identified and dealt with other methods than only medical ones, and that the power of the agent causing the illness or disease is thought to lie behind the symptoms. It also suggests that the agent is seen as an imperative factor for the alleviation of the symptoms. As the symptoms are no longer the phenomena themselves, they become indicators of problems people have in their relationships with people, ancestors or the spiritual world. It is also these aspects that finally become relevant to people and will form the basis upon which choices between medical and traditional healing practices are made. (Whyte 1997; Rinne 2001.)

The findings show that the first attempts of providing treatment are conducted at home, either using herbal remedies or other means of traditional healing before trying anything else. Many times also the location, i.e. the farm or the town dwelling, influences the choice of a treatment, simply because it would take too much effort to travel to town just for this reason. In addition, many times earlier experience has shown that many problems can be solved with home-made remedies or by using herbal mixtures bought from a local traditional healer or spiritual man instead of going to hospital or any orthodox medical centre as the discussion below suggests:

- "I take local herbs first. If after two days I do not get better, I go to the hospital in town."<sup>55</sup>
- "If there is no medical centre, some of us use natural medicine, as the farmers know some. Before the arrival of Western medicine there were herbs here and we were brought up with the herbs. But, when we are in the town, we can go to the hospital."<sup>56</sup>
- "We buy drugs in the town. Once we tell the people at the chemist's, they will give the prescription."<sup>57</sup>

However, the location or "trial and error" approach are not the only determinants in selecting the place to go. Many times supernatural causes are recognised as the cause of illness or misfortune regardless of which religion one belongs to. These discussions are those of people adhering to Christianity or Islam, but they also tend to turn to traditional healers in different illnesses:

- "The whites are different from the blacks. There might be enemies around us who wish one to die.
- We will visit the native doctors, the Juju men who will find out the cause of the sickness and the cure for the disease."<sup>58</sup>
- "I go to the herbalist.

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<sup>55</sup> HEPI 1999/3.2

<sup>56</sup> HEPF 1998/1.5

<sup>57</sup> HEPI 1999/2.1

<sup>58</sup> HEPF 1998/2.5

- I would go to the diviners who will find out the cause of the sickness and who will also tell of the cure. This might entail some ceremonies, also.
- These things are done for protection and for getting well again.<sup>59</sup>
- "We can visit Juju men who know and will find out the cause of the illness, which might have been caused by evil doers. The Juju men are called Alawo."<sup>60</sup>
- If the cure cannot be known in the hospital, we have to find out the cause of the illness ourselves. We believe that enemies can inflict some diseases. They can only be cured by the traditional medicine men, the Juju men of Alawo."<sup>61</sup>

Concerning **general attitudes to healthy behaviour** it seems that there are at least two dominant approaches of how people perceive their health status and the ability to influence health matters. *The everyday aspect* to health and well being is reproduced through everyday activities and by the ability to work and live a normal life. Another aspect in connection to health and illness is perceived by the ideas of *how a person regards him or herself as a part of the community* and within different sub-communities. When people do not have any particular health problems, they do not normally question health issues, but use some kind of health promotion methods. These ideas, in addition to eating nutritious food and taking care of personal hygiene, are connected to the supernatural part of life. Based on the Yoruba culture, the ties to ancestors and spiritual world are strong and people are expected to live in good harmony with the 'compound of natural and supernatural worlds'. That means living in peace with the cosmological community consisting of their family relations as well as a broader context of being a Yoruba. Following this line of conceptualisation, any symptom of illness or other kinds of misfortunes are then connected to the traditional healing practices of its concrete and spiritual forms. For example, a traditional herbal mixture, *agbo*, is widely used in both rural and urban areas, and no distinct difference has been observed between educated and non-educated people. (See Article II; IV.) In addition to the use of *agbo*, or other types of traditional mixtures, there are various charms, amulets, prayers, etc. used as a part of normal everyday life (Article II).

### 6.3 Suitability of rapid applications of participatory action research to the risk cycle model

The findings of the pilot study gave positive results to continue using rapid applications of PAR methods. Even though I did not include the fishing communities of the pilot phase in the actual fieldwork sites, they share similar characteristics of ethnicity, livelihood as well as everyday life situations than the study sites of the actual research. It has become evident that *principles of healthy life*, and the elements of *what makes water safe* in order to promote and maintain well-being of individuals and communities do follow similar lines of

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<sup>59</sup> HEPF 1998/1.3

<sup>60</sup> HEPF 1998/1.5

<sup>61</sup> HEPF 1998/1.5

conceptualisation observed during the early pilot phase and in the more extensive fieldwork.

Consequently, a participatory approach turned out to be an ideal approach to cover different sectors of the community and the *sub-communities* of gender, different age groups, livelihood and living environments. The importance of traditional influence/key groups, including traditional healers, community leaders and elders, was highlighted to represent the 'indigenous experts or professionals' of the local communities, as presented in the general framework of this study. They represent an important part of the *empowerment* prospective of the local community, especially when operating in close collaboration with sub-communities and other key persons of the local community. Even though this study did not include a concrete development projection, it provided an opportunity to discuss and conceptualise interests of the different sub-communities and produced important knowledge of the prospects and constraints experienced in the environmental health sector. By using the risk cycle approach, it can be argued that the groups became more aware of the 'demand-driven' approach (c.f. Mikkelsen 1995), which can be applied at different phases in the community development chain, and which actually can represent the 'stopped', or 'return' stages of the cyclic risk identification process.

In general, the results of testing rapid methods of participatory action research approach are encouraging. Even though the nature of the research did not allow me to live long periods during each fieldwork period in the communities, the model of combining different kinds of data collection methods, i.e. triangulation, turned out to be successful. The first fieldwork phase formed the basis for more focused fieldwork, when the most extensive data collection exercise was conducted. A tentative application of triangulation, in this case combining typical in-depth interviews, focus group discussions and participatory observations brought different viewpoints to the understanding of the local formulation of an environmental health risk.

When the focus is on studying people's perceptions, attitudes and ideas of a particular theme, group discussions turned out to be a fruitful way to approach the question. In natural group situations, such as groups among women sharing similar age, profession and background, or a group among traditional healers and community leaders, people were open and more relaxed and would express enthusiastic opinions compared to individual interviews. In the interview situations, time management and expressing one's opinions became more of an issue. Many times the women were rather eager to participate, but became soon short-worded when asked about their opinions when individually interviewed. Women told a lot about the prevailing situations and the problems connected to water and sanitation facilities, but when the time came to express their ideas and hopes for developing the situation, they did not actually want to contribute. It became clear that the limited possibility to influence concrete changes and the lack of involvement in community development actions caused low motivation among the women

when they were presenting only their own views in an interview. In the group situations, women were given encouragement from others, and thus found it easier to express their common ideas and hopes as well as suggestions for developing the situation or influencing the local government agencies.

The use of time charts was useful as information about the daily cycle of the women was collected systemically. However, it needs careful motivation to employ local people in filling the forms, thus problems and limitations in the use of a modified time chart were faced. It is an important tool in collecting information of the daily practices, but requires careful preparations and consideration of how to present the idea to people with a low level of literacy. Thus other modes of reporting could be developed and encouraged, e.g. by drawing techniques. The field visits were conducted during different times of the year when it was possible to observe seasonal variation and its effects on the environmental situation and the management of everyday life. Concerning water and sanitation issues, it is very important to observe and study the local variations by oneself, instead of only relying on information given by informants about the seasonal variation and other aspects related to everyday life management. These are differences in weather and other natural conditions, sources of income, livelihood, housing arrangements due to the dual residence system and religious and cultural events that vary a lot depending on the season of the year.

## 7 DISCUSSION

### 7.1 The prevailing risk level and relationship between man and environment

The first question in defining a risk level is how communities and individuals understand the living environment and nature and their relation to them. Thus, what is the relationship between man and environment locally becomes a critical point. In such a living environment where the basic infrastructure and services are lacking, the *relationship between man and the environment* is normally quite direct. In the rural areas, land offers all the necessities of life – shelter, food and water. Thus, all the natural water resources such as surface and rainwater are regarded as safe and unpolluted. According to the general opinion of the people, there is no risk attached to the surface water or to the means of how water is gained for household use because of the state of nature. Rather, it is believed that it is nature that ensures the safety of water. It is not only that people experience the purity of water by their senses, but they also share the understanding of the idea of pure nature. Nature is even thought to shelter water from any threat of contamination. Therefore, according to this, water in urban areas can never be as good as in the rural areas.

According to the findings, the perceptions of nature are based on a similar idea of purity of nature in the urban areas. People associate the idea of pure nature with their home village even when living in the urban context. In the urban communities, people are much more dependent on how other people act and react to the water issues. The household water gained for consumption in Amukoko, Lagos, is rarely from natural sources of water, but has come a long way from the water works through water vendors and even local dealers before it is consumed at home. Originally, the water may be purified and safe to use in the water works, but when running through rusty and broken pipes or collected into dirty buckets at the water vendor's, the quality may have been considerably reduced. People in the shantytowns often experience much severer problems of the lack of "safe" water because of urban settings and

overcrowding of people in the living environment. They do not live in such a direct connection with nature and, thus do not have easy access to the nearby stream or other kind of source of water. They depend on several water sources of 'improved' water supply, but have the idea of nature in mind. The dependency of various actors in the water supply is a critical point when it comes to the perceptions of safe water in the urban context.

*From the point of view of environmental pollution*, a considerable difference exists between the rural areas and the urban shantytown. In Amukoko, there is no doubt that the environment is severely polluted. Even the canals bordering the shantytowns are filled with stagnant water and waste. Heaps of waste along the roads and backyards characterise the area and people feel powerless with the extent of waste management problem. Similar problems can be found in smaller towns and even in rural villages, but the extent of these problems is smaller, but even they are not free of severe health risks. For example, Ifewara faced a severe cholera epidemic outburst in 1998 due to contaminated water in the wells. The situation became rather severe, but was under control only after several months of health education campaigning and systematic cleaning of the water sources. In addition, a local king, the Oba, performed a key role in the involvement of local people for cleaning the water sources. However, observations and evidence has shown that practices have not really changed after the incident. People have returned to using the insecure water sources and maintained their former practices of handling the household water. There have been a few cholera cases even today after the epidemics. The local people believe that it is the local government that is responsible for the situation, and should organise the water supply. As long as the people lack a proper and sustainable water supply system, they are forced to depend on unstable and unsafe water sources. Besides concerns with the water supply, people complain of the lack of systematic waste management of the local government.

*From the point of view of the inner consequences of environmental pollution* it seems evident that the local people are concerned about the quality of household water and about what kind of health implications poor quality of water may cause. People have observed some change in the situation during the last decades, but the explanations for the changes vary. Urbanisation and overcrowding of the living environment are some of the leading causes. The poor standard of basic infrastructure and services is another one. The lack of any amenities is concentrated in poor living areas where people lack any possibility to influence and take part in developing their living environment. Compared to the general standard of the basic infrastructure, the situation in the villages or in Lagos does not differ much from the general environmental health situation of the country (NEST 1991). Therefore, when observing the *intermediate implications between poor environmental health and the inner consequences of environmental pollution*, the ultimate consequence is accumulation of bad implications and increased complexity of problems in situations where people do not have any possibilities to prevent environmental pollution. The most difficult situations are faced in Lagos, or in other escalating city centres (Aina 1990; Aina 1994; Kuvaja 2001; Adelekan 2001). Amukoko is a good

example of this because people live quite apart from the local government support. The local government has not been able to develop the area as much as it should have, for example in water supply or waste management. Therefore, people are forced to maintain unsustainable water and sanitation systems, which keep up the high prevalence of water-related diseases.

## 7.2 Everyday life

In the communities studied, people face problems in connection with water and sanitation issues every day and they are forced to consciously face unsustainable practices. It is agreed that the everyday practices are not based on environmentally sustainable methods. However, *from the point of view of immediate subsistence*, people do not regard water issues higher compared to other problems in life, but consider poverty, lack of income and good health the most severe ones. It is of interest that many of the water-related diseases are not actually connected to the poor system of water supply or lack of sanitation facilities, even though these issues are evidently the major implications of the poor situation. There were no significant differences between the rural communities and the Amukoko shantytown, even though the settings are considerably different in regard to problems in water supply. Therefore, the findings have strengthened the observation of a cultural explanation given to problems in life, such as cultural practices, religion and worldview (e.g. Buckley 1985; Pearce 1993).

*From the point of view of reproduction*, the everyday practices do not produce improvements in environmental health or in the quality of household water. Primarily, this is due to the fact that the local people lack the resources to think and act to improve their water situation, because they have more serious concerns in survival. Consequently, as long as the perception of water risk is lacking, it is not processed on the level of cultural consciousness. For example, in the Ife Central LGA, a new programme was launched in 2000, in which each compound was obliged to build a toilet in the backyard of the compound if they were lacking one. The households sharing the compound were expected to share the costs, which were estimated at an average of 5000 *nairas*<sup>62</sup>. However, because the local government did not contribute anything to the action, the local communities did not take the programme seriously. At present, many compounds still lack toilet facilities.

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<sup>62</sup> In 2001, this was about 40 USD.



### 7.3 Perception

The first time a water risk is perceived is when water is fetched from the stream and some particles or other notions of dirt or pollution are found in the water such as colour, muddiness, smell or taste. It is also that former knowledge of the unstable quality of the source can make people sceptical of the quality of water. However, in order to become a perception of a risk the notion needs to be shared by other members of the family, neighbours or the whole community. Without a common notion of the poor quality of water, the family may consider other reasons more relevant. The explanation may be based, for example, on revenge of the fore-fathers due to the breaking of community rules or witchcraft. It can be argued that the religious and cultural explanations are as vivid as 'western' bio-medical explanations of what is perceived as a cause of illness and disease in the studied communities. These are the elements that determined *what kind of cultural protection is maintained*, i.e. how people prevent different kinds of diseases or accidents in life.

### 7.4 Cultural interpretation

On the level of cultural interpretation, the common ethnic background of the Yoruba and religion offer a variety of explanatory models (Kleinman 1980; Pearce 1993) toward what kinds of risks are being perceived in different situations and in different ways. In this sense, it is relevant to talk about a concept of *collective risk interpretation* (Douglas 1985) instead of talking only about an individual risk interpretation. According to the findings, it seems that any trouble, injury or disadvantage is defined as a risk when it threatens to break any communal order of things, the balance in which all things are in order. The impulse can be from a natural or supernatural actor, but defining the facilitator will further on define what kind of cultural protection is accepted and operationalised in the community.

There are many everyday practices that originate from the Yoruba religion in the studied communities. They define the type of food consumed and tabooed in the family, the religious rituals in use and the rules and restrictions maintained in the community (Buckley 1985; Pearce 1993; Sadiku 1996) and even determine how people manage their household water. The experienced unity of culture of manners, values and norms, attitudes also determines the kind of cultural protection people produce and reproduce against water and sanitation issues. For example, in the rural villages, it is common that people maintain the state of environment by community actions. There are rules of how to behave at the water source and what is accepted action at the source. Bathing, for example, is not commonly accepted at places where drinking water is fetched and there are different kinds of punishments in use when one is

found breaking the rule. These rules aim to preserve the common source of water and to prevent any contamination of physical or spiritual kind of nature.

In the urban settings, there are to some extent different kinds of rules in use. In general, the rules concern queuing at the water source, negotiation with the water vendor and mutual cooperation between members of the compound or the community. A common characteristic between urban and rural communities is that there is a strong community control over issues. It is a powerful mechanism of observation and reporting to the communal leaders such as elders of the compound or traditional leaders. In general, people give high priorities to maintaining the community unity and any offences against water sources have been rare.

## 7.5 Negotiation

In the studied communities, the actors in the process of forming and defining a perception of a risk to negotiation over the risk seem to belong to the groups that were originally thought as being quite influential in the community. In addition, new interest groups became evidently important. In the rural villages, traditional leaders, elders of the compounds and religious leaders are essential. Among the Yoruba, they are mostly men. Women, on the other hand, have been left a minor role. In general, they are supposed to assure male community members about the seriousness of the water situation or a particular health problem, who then would take action. In the urban settings, similar groups of compound elders and traditional leaders are found.

However, in spite of the considerably limited participation of women, women have some possibility to directly influence the negotiation process among the male groups. In Amukoko, Lagos, as well as everywhere in the Yorubaland, the leader of the Market Women Association (Iyalode) has a very powerful position. Similarly, among the Yoruba, the female elder of the community is a highly respected person and her opinion has an effect in the decision process of the community leaders. Nevertheless, women are still left outside the negotiation at the grass-roots level and they can only influence through intermediate relations and informal networks. Especially in the rural areas, the traditionally firm division of labour between male and female tasks and responsibilities is still strong. Women carry the most responsibility for household water management, sanitation and well-being, but still their participation in joint development is limited. This is in spite of major attempts to improve the situation of women in the whole of Nigeria, and at local levels (USAID 1994; Akinkugbe & Salako 1995). In the urban areas, the position of women may be better due to opportunities in work and independence, and because many projects, for example in Lagos, have aimed at strengthening the situation of women. However, in the urban shantytowns, the compound elders still dominate the decision-making process.

It seems that in all communities involved in the study the commitment of local institutions has firmly prevailed. It may even be argued that in some cases the traditional institutions have remained more powerful in Amukoko, because the outside support and local government has been limited and unreliable. In the rural areas, even the local government official, see themselves as capable of finding more resources for the development environmental health situation. The extent of the problems in Amukoko is experienced as a far more complex and controversial situation – due to poverty, lack of services and increased overcrowding.

## **7.6 Mitigation**

In order to achieve any positive change in the risk level, a key question focuses on operationalisation of the community. How the local people could change their water practices towards a more sustainable environmental management, in other words how to increase operationalisation of local resource at the community level becomes a critical question, especially when we are focusing on localities where the technical infrastructure to provide household water is by modern standards very poor or, in places, even non-existent. Furthermore, local political controversies, even violent clashes may erode chances for environment and health management in the community. In the Ile-Ife area, one of the major limitations in the involvement of local people for any health programme has been due to the local conflicts of the Ife – Modakeke situation. The extent of these consequences has become also evident during this study by the opinions expressed by both the local dwellers as well as by local officials of the Ife Central LGA. The local conflicts prevent the development of health care services and the implementation of the health programmes. Some of the health care officials and workers avoid visiting those rural villages that have been involved in the clashes. As a consequence of this, these villages have been left with less attention or even outside the health programmes. For example, the river blindness–disease has been very common in some villages of the Ife-Ile area. There has been a long-term programme to prevent the disease, in which local health workers have visited each village once a year to distribute prevention doses. The programme has been successful in villages where distribution has been regular. In others, an evident consequence of the local conflicts has been an increase of the disease. One explanation for this is that the health workers have been too afraid of visiting the villages and the villagers have not trusted the health workers.

## **7.7 The new risk level**

It can be argued that achieving a new, preferably lower risk level in the environmental health requires not only communal, but also individual re-evaluation of the situation and involvement in environmental health actions at all levels. Identifying the pertinent elements of the relationship between man and environment becomes a critical factor in the following sequences of the risk cycle, when continuation leads to an evolvement of a new risk cycle.

## 8 CONCLUDING REMARKS

Studying the effects of modernisation on environmental health and sustainable development of the Yoruba society requires a more careful consideration of *space*, *the risk concept* and *cultural hybridisation* aspects. This refers both to urban and rural areas of living environment, and to the various forms of being in between or in transition between 'traditional' and 'modern' concerning the way of life, livelihood and conceptualising the relationship between health and environment. Interesting questions follow such as what forms the contemporary space where the local people live their everyday life? How can they produce and reproduce the everyday practices in a sustainable manner in order to protect the environmental health situation? How are they able to adapt to the changing situations in environmental health, particularly due to the experienced constraints in water supply, sanitation and waste management?

The different *spaces* of the living environment in rural villages, small town setting and urban shantytowns represent different approaches to environmental health issues. The needs of basic infrastructure and services are shared in all three sites, but the preferences people give to water supply, sanitation facilities and waste management vary due to various reasons. It is not only the recognised *need* of improvement, but also meaning and value compared to other factors affecting health and well-being, that contributes to the question of how the local communities perceive their state of environment and the risks attached to it, and how they consider themselves capable of dealing with the recognised environmental health risks.

These questions pose a challenge to the community development risk cycle model, in which the communities are assumed to follow the cyclic chain of actions. As was mentioned in the theoretical part, the basic line of action evolves in sequence, starting from identifying a risk level and aims at reducing it at the end of the cyclic process. As a result, the cyclic model leads to a modification of a sequence of risk cycles where people may be constantly formulating and reformulating *the risk concepts* and even evaluating their positions in the process as well as the outcomes of what changes in the risk level create in their lives, manifested as modes of *cultural hybridisation* of everyday practices and beliefs. Based on the findings it seems that the local

inhabitants do not yet have sufficient means for sustainable practices to manage with the environmental risks without applying new approaches to sustainable practices of environment and health, and without increasing co-operation between the different actors and stakeholders.

Participation of the communities should be encouraged particularly at the local level, especially by involving some key persons from the communities to work for the benefit of the whole community and in co-operation with the local government officials and other actors, such as local NGOs and other institutions. Therefore, key persons of different interest groups should be identified, including both men and women of the communities to increase the knowledge level of environmental health situations and to create possibilities for sustainable practices. Positive experiences from the study areas prove that small-scale actions matter, and even though the positive outcomes of development practices are not always immediate, their influence can be cumulative. In the Ife Central LGA, the established Community Development Committees have been able to encourage people to be involved more in local environmental actions, and the new primary health care programme aims at supporting the local people in their environmental management instead of the past normative regulations and lack of support. In Amukoko, with the support of the local MSF office, market women established a Ladies for Health Association to act for the benefit of the whole community and to promote the health situation. It was the wish of both local government officials as well as the local dwellers that these kinds of actions become established and recognised as a permanent resource in the community.

It has been widely agreed that it is the organisations, institutions and communities that occupy a critical role in defining who should act and who are the stakeholders in environmental health and community development issues. This study has once again confirmed that it is the women, the children, and the men – the local context groups and sub-communities who continue to be in the most vulnerable positions in the world development balance. Therefore, *the environmental security aspect*, meaning how the social distribution of resources is produced and reproduced at the community level and how they reflect the generally experienced security aspects, becomes a central theme in the environment and health discussion for the near future.

## YHTEENVETO (FINNISH SUMMARY)

Tämän tutkimuksen päätavoitteena on ollut ympäristöterveyteen liittyvien käsitysten ja terveyspalvelujen tietoperustan vahvistaminen Nigerian maaseutu- ja kaupunkiyhteisöissä. Tutkimus käsittelee Nigerian ympäristöterveyttä, erityisesti veteen ja sanitaatioon liittyviä käsityksiä ja käytäntöjä sekä paikallisen riskihavainnon muodostumista Lounais-Nigerian jorubojen keskuudessa teoreettisen yhteisöllisen riskikehämallin avulla.

Kestävän ympäristönsuojelun ja siihen liittyvän ympäristöterveyden edistäminen on parina viime vuosikymmeninä tullut yhä tärkeämmäksi osaluokaksi kansainvälisessä kehityskeskustelussa. Ympäristöongelmien mittasuhteet ovat usein hyvin erilaisia riippuen siitä, katsotaanko niitä paikallisista, kansallisesta vai kansainvälisestä näkökulmasta. Näkökulman valinta vaikuttaa myös siihen, miten tärkeänä pidetään sosiaalisia ja kulttuurisia tekijöitä kestävän kehityksen ja vastuullisen ympäristöpolitiikan edistämiseksi. Kulttuurisen ymmärtämisen lisääminen näkökulmasta eri toimijoiden merkitys korostuu, sisältäen niin paikallisyhteisöjen asukkaita: naisia ja miehiä, yhteisöllisiä johtajia, terveysviranomaisia, poliittisia päättäjiä kuin kansainvälisiä vesialan toimijoita.

Kestävän kehityksen tavoitteiden näkökulmasta Länsi-Afrikkaan sijoittuva Nigeria edustaa monimuotoisuudellaan yhtä haastavimmista alueista Afrikan mantereella. Nopea väestönkasvu, kansallinen ja poliittinen hajanaisuus sekä taloudelliset ongelmat ovat läsnä niin maaseudun kylissä kuin Lagosin suurkaupungissa tai maaseudun keskisuurissa kaupungeissa. Sitä mukaa kuin maaseudun ihmiset ovat omaksuneet uusia kulutuksen muotoja ja modernin elämän tarpeita, monet kaupunkilaiset ovat joutuneet turvautumaan yhä enemmän omavaraisuuteen perustuvaan viljelyyn ja muihin maaseudulla yleisiin elinkeinon muotoihin turvatakseen elantonsa ja selviytyäkseen arjen hallinnasta. Käytettävissä olevat keinot ja resurssit eivät useinkaan ole olleet ympäristöterveyttä edistäviä. Vesihuollon tilanne ei kovinkaan eroa kehitysmaiden yleisestä tilanteesta, puhtaan veden saatavuus on heikko ja sanitaatio puutteellinen. Vuoden 2001 Unicef/WHO:n raportin mukaan noin 80 %:lla kaupunkien asukkaista on puhdasta juomavettä saatavilla ja maaseudulla noin 50 %:lla. Sanitaatiopalveluja on kaupungeissa noin 70 %:lla kun saatavuus maaseudulla on noin 50 %:lla asukkaista. Todellisuudessa kaupunkien tilanne vaihtelee huomattavasti eri kaupunginosissa, varsinkin slummialueilla. Palveluja ja infrastruktuuria on vähän eikä useimmissa kaupungeissa ole toimivaa vesi- ja jätehuoltojärjestelmää. Maaseudulla on yleistä, että talousvesi haetaan läheiseltä puroilta tai pihapiirin kaivosta. Kaupungeissa tarjolla voi olla enemmän vaihtoehtoja, mutta slummialueilla tilanne on yleensä maaseutua heikompi, johtuen asumistiheydestä, vaikeista jäteongelmista ja yleisesti koetusta köyhyydestä.

Tämän väitöskirjan tarkoitus on selvittää tutkimusalueen ympäristöterveyden tilaa, erityisesti veteen ja sanitaatioon liittyviä ongelmia ja riskejä yhteisötasolla sekä tutkia millaisia käsityksiä ja käytäntöjä näiden ongelmien ratkaisemiseksi on käytössä. Lisäksi tutkimus pyrkii selvittämään miten eri käsitykset

puhtaasta vedestä, terveyden ylläpitämisestä ja sairauksista vaihtelevat itselääkinnän sekä modernin ja perinteisten terveysjärjestelmien välillä.

Tutkimus lähestyy ympäristöriskin käsitettä käyttäen apunaan Mary Douglasin määritelmää riskihavainnosta sosiaalisen toiminnan ja järjestyksen ilmentymänä. ENHICA -verkoston laatima riskikehämalli pohjautuu Lars Clausenin esittämään kuvaukseen katastrofisyklistä (1989), sekä Edgar Morinin ja Ann-Brigitte Kernin ajatukseen systeemistä jatkumona, jossa sosiaalinen muutos nähdään eräänlaisen rengasmaisen kausaliteetin toteutumana. Mallissa edetään riskitasolta toiselle, tavoitteena saavuttaa alentunut riskitila. Riskikehämällä eri vaiheisiin kuuluvat riskitason määrittelyn jälkeen arkipäivän taso, riskin havaitseminen, riskin kulttuurinen tulkinta, riskistä neuvottelu, riskiin sopeutuminen ja yhteisön toiminnallistaminen sekä uuden riskitason määrittely. Tämä voi tarkoittaa lähtöriskitason pienenemistä, sen pysymistä ennallaan tai vähenemistä. Tutkimuksen tulosten käsittely noudattaa riskikehämällin kulkua.

Tutkimusmenetelminä tässä työssä on käytetty osallistavia menetelmiä (Participatory Action Research PAR), soveltaen erityisesti nopean kenttätutkimuksen menetelmiä. Tutkimuksen yhtenä tavoitteena on ollut testata näiden PAR menetelmien toimivuutta tutkimuksen teoreettisen viitekehyksen riskikehämalliin. Aineisto on kerätty käyttäen laadullisia menetelmiä: syvähaastatteluja, ryhmähaastatteluja (Focus Group Discussion, FGD) sekä osallistuvaa havainnointia. Tutkimuksen empiirinen aineisto on kerätty Nigeriassa kolmen kenttäjakson aikana vuosina 1998 – 2001. Tutkimuskohteena on ollut kolme maaseutukylää (Abagbooro, Oke-Ake ja Elefon) ja yksi pikkukaupunki (Ifewara) Lounais-Nigeriassa, sekä tyypillinen slummialue (Amukoko) Lagosin suurkaupungissa. Nämä kuuluvat kolmeen eri paikallishallintoalueeseen (Ife Central Local Government Area, Atakumosa West Local Government Area ja Ajeromi/Ifelodun Local Government Area).

Empiiristen tulosten ja kirjallisuuden pohjalta voidaan todeta, että Nigerian ympäristöterveydellisessä tilanteessa on vakavia puutteita. Nämä tulevat esiin monin tavoin sekä maaseutu- että kaupunkiyhteisöissä. Tutkimus osoittaa, että ympäristöterveysriskien, kuten vesiriskin, sosiaalisessa havaitsemisessa keskeinen rooli on yhteisöillä eikä niinkään yksilöllisillä toimijoilla. Yksityiset ihmiset raportoivat riskihavainnostaan yhteisön vanhimmille ja johtajille, jotka ovat tärkeimpiä toimijoita yhteisön yhteisissä asioissa. Tutkimuksen mukaan on ilmeistä, että kaikki mahdolliset ympäristöterveyden positiiviseen muutokseen tähtäävät toimenpiteet on neuvoteltava yhteisön yleisen sosiaalisen järjestyksen mukaisesti. Tässä neuvotteluprosessissa uskonnon merkitys, joka kohteissa usein koostuu yhdistelmäsystemistä (mixed system) kristinuskon, islamin ja traditionaalisen uskonnon välillä, on suuri. Erityisesti paikallisilla kulttuurisilla rakenteilla, kuten tabuilla ja uskomuksilla, jotka koskevat luontoympäristöä ja sen suojelua, on yhteisöllisesti keskeinen merkitys arvioitaessa ympäristöterveyttä edistävän muutoksen mahdollisuutta. Myös perinteisten yhteisöllisten johtajien ja paikallisviranomaisten välinen suhde osoittautui tarkasteluissa erityisen tärkeäksi. Kuitenkin kaupunkimaisessa monikulttuurisessa yhteisössä (La-



gosin suurkaupunki Amukokossa) ulkopuolisilla vaikuttajilla on tärkeämpi merkitys kuin maaseutuyhteisössä.

Hyvän neuvotteluaseman tavoittaminen ja ympäristöterveysriskin pienentäminen vesiriskin osalta on mahdollista vain yhteistyössä paikallisten viranomaisten (Local Government Agencies, LGA) ja yhteisöllisten toimijoiden kanssa. Sekä LGA-toimijat että yhteisöt tarvitsevat lisää tietoa ympäristöterveyden ehdoista ja siitä, miten tilannetta voidaan parantaa käytettävissä olevilla resursseilla. Kestävän kehityksen edistäminen edellyttää julkista osallistumista laajalla pohjalla. Suotuisan kehityksen ehtona on myös tasapainoinen tilanne eri etnisten ryhmien välillä, niin Ile-Ifen maaseudulla kuin Lagosissa.

Väitöskirja muodostuu yhteenveto-osasta ja viidestä artikkelista, jotka käsittelevät kenttätöiden tuloksia maaseudun ja urbaanin elinympäristön näkökulmista. Väitöskirja on osa Jyväskylän ja Kuopion yliopistojen sekä nigerialaisen Obafemi Awolowo University'n (OAU) yhteistä monitieteistä tutkimushanketta HEPECO (Ympäristöterveys: terveyden käsitykset ja palvelujärjestelmät nigerialaisessa kyläyhteisössä), jossa ympäristöterveyttä on tutkittu yhteiskuntatieteellisin ja terveystieteellisin menetelmin. Projekti on saanut rahoitusta Suomen Akatemialta kolmen vuoden ajan, vuosina 1997–2000.

## REFERENCES

- Abimbola, W. (1975). Yoruba Oral Tradition. (Department of African Languages and Literatures, University of Ife, Ile-Ife, Nigeria).
- Abiodun, R.; Drewal, H. J. & Pemberton, J. III (Eds.) (1994). *The Yoruba Artist* (London, Smithsonian Institutions Press).
- ACC/SCN Second Report on the World Nutrition Situation (1993), Volume II, Country Data, March 1993.
- Adelekan, I.O. (2001). Socio-Economic Implications of Water Supply in Nigerian Urban Centres: The Case of Ibadan (unpublished paper, presented at 2<sup>nd</sup> Conference of the International Water History Association, 10<sup>th</sup>–12<sup>th</sup> August 2001, Bergen).
- Adetunji, J.A. (1991). Response of Parents to Five Killer Diseases among Children in a Yoruba Community, Nigeria, *Social Science and Medicine* 32 (12): 1379–1387.
- Africa, South of the Sahara (1997). (London, Europa Publications).
- African Programme for Onchocerciasis Control APOC/WHO (1997). [www.who.int/ocp/apoc/apoc001.htm](http://www.who.int/ocp/apoc/apoc001.htm).
- Agrawal, A. (1995). Dismantling the Divide Between Indigenous and Scientific Knowledge, *Development and Change* 26 (3): 413–439.
- Aina, T.A. (1990). Health, Habitat and Underdevelopment in Nigeria. With special reference to a low-income settlement in Metropolitan Lagos (London, IIED International Institute for Environment and Development, Human Settlement Programme).
- Aina, T.A, Etta, F. Beam & Obi, C. I. (1994) The Search for Sustainable Urban Development in Metropolitan Lagos, Nigeria. Prospects and Problems, *Third World Planning Review* 16 (2): 201–219.
- Akinjogbin, I.A. (1992). *The Cradle of a Race Ife from the Beginning to 1980* (Port Harcourt, Sunray Publications Ltd).
- Akinkugbe, O.O. & Salako, L.A. (1995). Nigeria's Health in the Nineties. A symposium revisit (Ibadan, Spectrum Book Ltd).
- Akinsola, H.A. (1995). Sanitary Wells versus Boreholes for Drinking-Water, *World Health Forum*, Vol. 16: 183–184.
- Akogun, O.B.; Akogun, M.K. & Audu, Z. (2000). Community-perceived benefits of ivermectin treatment in Northeastern Nigeria *Social Science and Medicine* Vol. 50: 1451–1456.
- Akuoko-Asibey, A. (1997). Views of Selected Government Officials on the Impact of a Rural Water Supply Program in Ghana, *Evaluation and Program Planning* 20 (2): 225–230.
- Albert, I.O. (1999). Ife – Modakeke Crisis, O. Otite & I. O. Albert (Eds.) *Community Conflicts in Nigeria: Management, Resolution and Transformation*, pp. 142–183 (Ibadan, Spectrum Books Limited).
- Amanor, K.S. (1994). *The New Frontier. Farmers' Response to Land Degradation. A West African Study* (London, Zed Books, Ltd).

- Amin, S. (1997). *Capitalism in the Age of Globalization* (London, Zed Books).
- Anacleiti, O. (1996). Research into local culture: implications for participatory development, Deborah Eade (Ed.) *Development and Social Diversity. A Development in Practice Reader Series*, pp. 69–72 (London, Oxfam).
- Andrae, G. (1997) *A Woman Worker in a Lagos Factory. Her Power Base in Family, Community, Labour Market and Union*, E. E. Rosander (Ed.) *Transforming Female Identities: Women's Organizational Forms in West Africa* (Uppsala, Nordic Africa Institute).
- Awolalu, J. Omosade (1981). *Yoruba Beliefs and Sacrificial Rites* (Essex, Longman Group Limited).
- Awolola, T S; Manafa, O U; Rotimi O O & Ogunrinade, A F (2000). Knowledge and beliefs about causes, transmission, treatment and control of human onchocerciasis in rural communities in Southwestern Nigeria, *Acta Tropica* Vol 76, Issue 3, October 2: 247–251.
- Babalola, E.O. (1991). The Significance of Traditional African and Christian Marriage in the Islamisation of Yorubaland, *Africa Theological Journal*, 20(3), 201–209.
- Baker, J. (1990). *Small Town Africa. Studies in Rural – Urban Interaction*, Seminar Proceedings No. 23 ((Uppsala, The Scandinavian Institute of African Studies).
- Baker, J. & Pedersen, P.O. (1992). *The Rural-Urban Interface in Africa. Expansion and Adaptation*, Seminar Proceedings No. 27 (Uppsala, The Scandinavian Institute of African Studies).
- Barbour, R. S. & Kitzinger, J. (Eds.) (1999). *Developing Focus Group Research. Politics, Theory and Practice* (London, SAGE Publications Ltd).
- Basics, *Basic Support for Institutionalising Child Survival* (2000). *Community Approaches: Mobilizing Local Support To Improve Child Survival*, <http://www.basics.org/Publications/pathways/community.htm>
- Beck, U. (1992). *Risk Society: Towards a New Modernity* (London, Sage).
- Bentley, M.; Pelto, G.; Straus, W.; Schumann, C.; Pena, E.; Oni, G.; Brown, K. & Hurffman, S. (1988). Rapid Ethnographic Assessment: Applications in a Diarrhoea Management Program, *Social Science and Medicine* 27(1): 107–116.
- Bevan, D. L.; Collier, P. & Gunning, J.W. (1999). *Nigeria and Indonesia. The Political Economy of Poverty, Equity and Growth. A World Bank Comparative Study* (Washington, Oxford University Press).
- Bierlich, B. (1995). Notions and Treatment of Guinea Worm in Northern Ghana, *Social Science and Medicine* 41 (4): 501–509.
- Black, M. B. (1973). Chapter 12: Belief Systems, J. J. Hovingmann (Ed.) *Handbook of Social and Cultural Anthropology* (Chicago, Rand McNelly & co.).
- Black, M. (1990). *From Handpumps to Health. The evolution of water and sanitation programmes in Bangladesh, India and Nigeria* (New York, UNICEF).
- Boholm, Å. (1996). Risk Perception and Social Anthropology: Critique of Cultural Theory, *ETHNOS* 61(1-2): 64–84.

- Boholm, Å. (2003). Situated Risk: An Introduction, *ETHNOS* Special Issue 68 (2), 2003.
- Brieger, W.R; Ramakrishna, J; Adeniyi, J.D.; Sridhar, M.K.C. & Kale, O.O. (1991). Guineaworm control case study. Planning a multi-strategy approach, *Social Science and Medicine* 32 (12): 1319–1326.
- Brieger, W. & Kendall, C. (1996). The Yoruba Farm Market as a Communication Channel in Guinea Worm Disease Surveillance, *Social Science and Medicine* 42 (2): 233–243.
- Brieger, W.R.; Oshiname, F.O. & Ososanya, O.O. (1998). Stigma Associated with Onchocercal Skin Disease among those Affected near the Ofiki and Oyan Rivers in Western Nigeria, *Social Science and Medicine* 47 (7): 841–852.
- Buckley, A. D. (1985). *Yoruba Medicine* (Oxford, Clarendon Press).
- Calder, J. (1977). Focus group and the nature of qualitative marketing, *Journal of Marketing research* 14: 353–364.
- Castells, M. (1998). End of Millennium. The Information Age: Economy, Society and Culture, Vol III, Blackwell Publ. Ltd., Oxford.
- Chambers, R. (1983). *Rural Development: Putting the Last First* (London, Longman).
- Chambers, R. (1994a). *Participatory Rural Appraisal (PRA): Challenges, Potentials and Paradigm* (Brighton, Institute of Development Studies, University of Sussex).
- Chambers, R. (1994b) The Origins and Practice of Participatory Rural Appraisal, *World Development* 22 (7): 953–969.
- Chauhan, S.K. (Ed.) (1983). *Who puts the water in the taps? Community participation in Third World drinking water, sanitation and health* (London, Earthscan).
- Clarke, J. (1991). *Democratizing Development: The Role of Voluntary Organizations* (London, Earthscan).
- Clausen, L. (1989). Social Differentiation and the Long-term Origin of Disasters. Contribution to the International Conference on Marxist and Non-Marxist Theories of Social Differentiation and the Contemporary World, pp. 153–164 (Poznan, Adam Michiewicz University Press).
- Cleaver, F. (2001). Institutions, Agency and the Limitations of Participatory Approaches to Development, B. Cooke & U. Kothari (eds.) *Participation. The New Tyranny*, p. 36–55 (London, Zed Books).
- CountryWatch (2003). [http://www.countrywatch.com/cw\\_country.asp?vCOUNTRY=128](http://www.countrywatch.com/cw_country.asp?vCOUNTRY=128)
- Craig, D. (2000). Practical logics: the shapes and lessons of popular knowledge and practice – examples from Vietnam and Indigenous Australia, *Social Science and Medicine* 51: 703–711.
- Dabi, D. D & Anderson, W. P. (1999). Water use for commodity production in Katarko village, Northern Nigeria, *Applied Geography* 19: 105–122.
- Dahl, G. & Megerssa, G. (1990). The Sources of Life: Boran Concepts of Wells and Water, G. Pálsson (Ed.) *From Water to World-Making*, pp. 21–28 (Motala, Nordic Africa Institute).
- Davidson, B. (1977). *A history of West Africa, 1000–1800* (London, Longman).

- Dawson, S; Manderson, L. & Tallo V. (Eds.) (1993). A Manual for the Use of FGDs (Boston, International Nutrition Foundation for Developing Countries).
- Demographic & Environmental Situation of Ife Central Local Government (1994). A product of the analysis of clinic master cards. (Ife Central Local Government P.H.C. Department, CCCD of United State Agency for International Development)
- Douglas, M. (1987). How Institutions Think (New York, Syracuse University Press)
- Douglas, M. (1985). Risk Acceptability According to the Social Sciences (New York, Russell Sage Foundation)
- Douglas, M. (1994) [1966]. Purity and Danger. An analysis of the concepts of pollution and taboo (London, Routledge)
- Douglas, M. & Wildavsky, A. (1982). Risk and Culture (Berkley, University of California Press)
- Drangert, J.-O. (1993). Who cares about water? A study of household water development in Sukumaland, Tanzania (Linköping University)
- Dunlap, R.E. & Jones, R. E. (2002). Environmental Concern: Conceptual and Measurement Issues, R. Dunlap & W. Michelson (Eds.), Handbook of Environmental Sociology, pp. 483–524 (Westport, Connecticut, Greenwood Press)
- Dunlap, R. & Michelson, W. (Eds.) (2002). Handbook of Environmental Sociology (Westport, Connecticut, Greenwood Press)
- Dunlap, R.; Michelson, W. & Stalker, G. (2002). Environmental Sociology: An Introduction, Issues, R. Dunlap & W. Michelson (Eds.), Handbook of Environmental Sociology, pp. 1–32 (Westport, Connecticut, Greenwood Press)
- Eades, J.S. (1980). The Yoruba Today (Cambridge, University Press)
- Egwu, I. B. (1996). Primary Health Care System in Nigeria. Theory, Practice and Perspectives (Lagos, Elmore Printing and Publishing Company)
- Egwu, S. (1998). Structural Adjustment, Agrarian Change and Rural Ethnicity in Nigeria (Upsala, Nordic Africa Institute Research Report 103)
- Elliott, L. (1998). The Global Politics of the Environment (Houndmills, Macmillan Press)
- Emah, E. (1995). Poor Water, Poor Environment, *PONG* 1 (1): 37–41 (Federal Office of Statistics (FOS), Nigeria in collaboration with UNICEF)
- Enabor, B; Sridhar, K.C. & Olaseha, I.O. (1998) Integrated Water Management by Urban Poor Women: A Nigerian Slum Example, *International Journal of Water Resources Development* 14 (4): 505–512
- Escobar, A. (1995). Encountering Development. The Making and Unmaking of the Third World (New Jersey, Princeton University Press)
- FAO (2001). SEAGA, Socio-Economic and Gender Analysis (2001). Field Level Handbook (Food and Agriculture Organization, Rome)
- Fabiyi, A.K. (1994). Health Education in Primary Health Care: Ife/Ijesa Experience (An unpublished faculty seminar paper, Department of Community Health, Obafemi Awolowo University, Ile-Ife, Nigeria)

- Fadipe, N.A. (1991). *The Sociology of the Yoruba* (Ibadan, Johnmof Printers)
- Falkenmark, M. & Lundqvist, J. (1995). Looming Water Crisis: New Approaches Are Inevitable, L. Ohlsson (Ed.) *Hydropolitics. Conflicts over water as a development constraint*, pp. 178–212 (London, Zed Books)
- Federal Office of Statistics, FOS (1992). *Nigeria Demographic and Health Survey 1990*. (Lagos, Federal Office of Statistics).
- Federal Office of Statistics, FOS/UNICEF (1995). *Multiple Indicator Cluster Survey March 1995*, Unicef/Federal Republic of Nigeria (Lagos, Federal Office of Statistics)
- Federal Office of Statistics, FOS (1997). *Major Social Indicators by Local Government Areas, Nigeria. Report of General Household Survey Component of National Agricultural Sample Census 1993/94* (Lagos, Federal Office of Statistics)
- Federal Office of Statistics, FOS (1998a). *Population Census of the Federal Republic of Nigeria 1991. Analytical Report at the National Level* (Abuja, Federal Office of Statistics, Nigeria)
- Federal Office of Statistics, FOS (1998b). *Annual Abstracts of Statistics, 1998 edition* (Abuja, Federal Office of Statistics, Nigeria).
- Federal Republic of Nigeria (1996). *National Rolling Plan 1996–1998*, Federal Republic of Nigeria (Abuja, National Planning Commission)
- Forbes, D. K. (1984). *The Geography of Underdevelopment* (London, Croom Helm)
- Geissler, P.W. (1998a). 'Worms are our life', part I: understanding of worms and the body among the Luo of western Kenya, *Anthropology & Medicine* 5 (1): 63–79, 143
- Geissler, P.W. (1998b). 'Worms are our life', part II: Luo children's thoughts about worms and illness, *Anthropology & Medicine* 5 (2): 133–143
- Giddens, A. (1990). *The Consequences of Modernity* (Cambridge, Polity Press)
- Good, C.M. (1987). *Ethnomedicine Systems in Africa* (London, The Guilford Press)
- Green, C. & Baden S. (1995). Integrated Water Resources Management: A Gender Perspective, *IDS Bulletin* 26(1): 92–100
- Haakonsen, J.M (1992). Industrial vs. Artisan Fisheries in West Africa: The Lessons to be Learnt, I. Tvedten & B. Hersoug (Eds.) *Fishing for Development. Small-Scale Fisheries in Africa*, pp. 33-53 (Motala, The Scandinavian Institute of African Studies)
- Hallgren, R. (1988). *The Good Things in Life. A study of the traditional religious culture of the Yoruba people* (Malmö, Graphic Systems)
- Hardoy, J.E.; Mitlin, D & Satterthwaite, D. (1997). *Environmental Problems in Third World Cities* (London, Earthscan)
- Harrison, L.E. & Huntington, S.P. (2000). *Culture Matters. How Values Shape Human Progress* (New York, Basic Books)
- Hausen, L. (2001). *Health Care in a Nigerian Community*, M. Järvelä; M. Korpela & K. Kuvaja (Eds.) *African Flows, Interim Report of the Research Network Environment, Health and Information Activities for*

- Communities in Africa (ENHICA), pp. 133-152 (Jyväskylä, University Printing House)
- Hay, R.A; Koehn, P.H. & Koehn, E.F. (1990). Community Development in Nigeria: Prevailing Orientations Among Local Government Officials, *Community Development Journal*, 25(2): 147-160
- HEPECO – Environmental Health: Perceptions on Healthy and Health Care Services in a Nigerian Community (1997). A Research Proposal for the Academy of Finland, 15.5.1997
- Hesselberg, J. (1997). National Experiences with Urban Shelter Delivery for the Poorest Groups. Occasional Papers No. 24, Human Geography, Department of Sociology and Human Geography (University of Oslo)
- Hjort-af-Ordnäs, A. & Lundqvist, J. (1999). Life, livelihood, resources and security – Links, and a call for a new order, TiiaRiitta Granfelt (Ed.) 'Managing the Globalized Environment. Local Strategies to Secure Livelihood', pp. 1-8 (Trowbridge, Cromwell Press)
- Hunter, J.M. (1997). Bore holes and the vanishing of guinea worm disease in Ghana's upper region, *Social Science and Medicine* 45 (1): 71-89
- Hukka, J. (1998). Institutions, organizations and viable water services: A capacity development model for drinking water provision and production (Tampere University of Technology, Publications no 230)
- Husain, I. (1994). Structural Adjustment and the Long-Term Development of Sub-Saharan Africa, Rolph, van der Hoeven and Fred van der Kraaij (Eds.) *Structural Adjustment and Beyond in Sub-Saharan Africa. Research and Policy Issues*, pp. 150-173 (London, Williers Publications)
- Huttly, S. R. A., Morris, S. S. & Pisani, V. (1990). Prevention of diarrhoea in young children in developing countries, *Bulleting of the World Health Organization* 75 (2): 163-174
- IDEA (2001). Democracy in Nigeria. Continuing Dialogue(s) for Nation-Building, Capacity Building Series 10 (International Institute for Democracy and Electoral Assistance (International IDEA, Stockholm)
- Ihonvbere, J.O. & Shaw, T. (1998). Illusions of Power. Nigeria in Transition (Trenton, Africa World Press, Inc.)
- Ikime, O. (1999). Groundwork of Nigerian History (Ibadan, Oluseyi Press Limited)
- Ilesanmi, T.M. (1998): The Significance of the Myths of Women in Socio-Political Role Sharing Among Yoruba People, M. Kolawole (Ed.) *Gender Perceptions and Development in Africa. A Socio-Cultural Approach*, pp. 29-44 (Lagos, Arrabon Academic Publishers)
- Ingold, T. (2000). The Perception of the Environment. Essays in livelihood, dwelling and skill (London, Routledge)
- Iyun, F.B. (2000). Environmental factors, situation of women and child mortality in Southwestern Nigeria, *Social Science and Medicine* 51:1473-1489
- Iyun, F.B. & Oke, A.E. (2000). 'Ecological and cultural barriers to treatment of childhood diarrhea in riverine areas of Ondo State, Nigeria', *Social Science and Medicine* 50: 953-964

- Jackson, C. (1997) *Gender Analysis and Environmentalisms*, M Redclift & T. Benton (eds.) *Social Theory and the Global Environment* (London and New York, Routledge)
- Jacobson-Widding, A & Westerlund, D (eds.) *Culture, Experience and Pluralism. Essays on African Ideas of Illness and Healing* (Stockholm, Almqvist & Wiksell International)
- James, W. (1999) Introduction, D. Forde (Ed.) *African Worlds. Studies in the Cosmological Ideas and Social Values of the African People* (1954), New Introduction, pp. ix – xxx (Oxford, James Currey Publishers)
- Jasanoff, S. (1986). *Risk Management and Political Culture* (New York, Russell Sage Foundation)
- Jauro, A. (1981). Environmental Sanitation as an Aspect Health Problem in Gombe Town, O. Okello (Ed.) *Health Problems in Rural and Urban Africa. A Nigerian Political Economy health Science*, pp. 92–100 (Zaria, Department of Political Science, Ahmadu Bello University)
- Jazairy et. al. (1992). *The State of World Rural Poverty: An Inquiry into Its Causes and Consequences* (New York, New York University Press)
- Jega, A (2000). *The State and Identity Transformation under Structural Adjustment in Nigeria*, A. Jega (Ed.) *Identity Transformation and Identity Politics under Structural Adjustment in Nigeria*, pp. 24–40 (Upsala, Nordic Africa Institute)
- Jordan, S. & Wagner, F. (1993). Meeting women's needs and priorities for water and sanitation in cities, *Environment & Urbanization* 5(2): 135–145
- Järvelä, M. Korpela, M. & Kuvaja, K. (Eds.) (2001). *African Flows. Interim Report of the Research Network Environment, Health and Information Activities for Communities in Africa – ENHICA* (University of Jyväskylä, University Printing House)
- Järvelä, M. & Kuvaja, K. (2001). Introduction, M. Järvelä, K. Korpela & K. Kuvaja (Eds.) *African Flows. Interim Report of the Research Network Environment, Health and Information Activities for Communities in Africa – ENHICA*, pp. 19-36 (University of Jyväskylä, University Printing House)
- Järvelä, M. & Kuvaja-Puumalainen, K. (1998). Environmental Impact Assessment, *Encyclopaedia of Applied Ethics*, Vol. 3, pp. 83–91 (San Diego, Academic Press).
- Järvelä, M; Myllylä S.; Kuvaja, K. & Rinne-Koistinen, E.-M. (2003). *Towards Sustainable Cities in South*, a poster presented in the 2003 Open Meeting Human Dimension of Global Environmental Change, Montreal, Canada 16–18 October 2003
- Karp, I. (1995). *African Systems of Thought*, P.M. Martin & P. O'Meara (Eds.) *Africa*, Third Edition, pp. 211–222 (London, Indiana University Press)
- Katko, T. (1991). *Paying for water in developing countries* (Tampere University of Technology)
- Katko, T. (1993). Rural water supplies: what ways and means? *World Health Forum* WHO 14: 425–428



- Kayode, J.O. & Adelowo, E. Dada (1985). Religions in Nigeria, Richard Olaniyan (Ed.) Nigerian History and Culture (Hong Kong, Longman Group Ltd)
- Khan, M. & Manderson, L. (1992). Focus groups in tropical diseases research, *Health Policy and Planning* 7 (1): 56–66
- Kjellen, M.; Bratt, A. & McGranahan, G. (1996). Water Supply and Sanitation in Low and Middle Income Cities: Comparing Accra, Jakarta and Sao Paolo, Urban Environment Series No. 1 (Stockholm, Stockholm Environment Institute)
- Kleinman, A. (1980). Patients and Healers in the Context of Culture: An Exploration of the Borderland Between Anthropology and Medicine (California, University of California Press)
- Koning & Martin (1996). Participatory research in health: setting the context, K. Koning & M. Martin (Eds.) Participatory Research in Health. Issues and Experiences (London, Zed Books Ltd.)
- Korpela, M (1994a). Nigerian Practice in Computer Systems Development. A Multidisciplinary Theoretical Framework, Applied to Health Informatics (Otaniemi, Helsinki University of Technology)
- Korpela, M. (1994b). Can existing health information activities be used for environmental action in Nigeria, paper presented in the First Finnish-Nigerian Conference on Environment and Development, Lagos, Nigeria, 5–8 December 1994
- Kothari, U. (2002). Power, Knowledge and Social Control in Participatory Development, B. Cooke & U. Kothari (eds.) Participation. The New Tyranny, p. 139–152 (London, Zed Books)
- Kuvaja-Puumalainen, K. (1995). The Effects of Structural Adjustment. The Case for Nigeria and Ghana - a Time-Space Analysis, Department of Social Policy, Reports A 11 (Jyväskylä, University Press)
- Kuvaja, K. (2001). Low-Income Housing in Lagos, M. Järvelä; M. Korpela & K. Kuvaja (Eds.) African Flows. Interim Report of the Research Network Environment, Health and Information Activities for Communities in Africa – ENHICA, pp. 153–170 (University of Jyväskylä, University Printing House)
- Lafferty, W. M. (1996) 'The Politics of Sustainable Development.: Global Norms for National Implementation' *Environmental Politics*, 5 (2): 185–208
- Lafferty, W.M. and Eckerberg, K. (1998). "Introduction: the nature and purpose of 'Local Agenda 21'", in Lafferty, W.M. and Eckerberg, K. (eds) From the Earth Summit to Local Agenda 21: Working Towards Sustainable Development (London: Earthscan)
- Lagos State Handbook (1995). (Ikeja, Lagos State Ministry of Information, Culture and Sports)
- Lagos State of Nigeria (1995) Recurrent and Capital Estimates of the Lagos State Government 1995 (Lagos, Lagos State of Nigeria)
- Laitinen, H.; Voipio, T. & Grönqvist, M. (1995). Yhteisön ääni. Osallistavien menetelmien opas Kehitysyhteistyön palvelukeskuksen julkaisusarja 15 (Helsinki, Kehitysyhteistyön palvelukeskus)

- Lambert, H. (1996). 'Medical Anthropology', in Alan Barnard and Jonathan Spencer (eds.) *Encyclopaedia of Social and Cultural Anthropology*. London etc.: Routledge, pp. 358–61
- Lankinen, K.S.; Bergström, S.; Mäkelä, P.H. & Peltomaa, M. (1994). *Health and Disease in Developing Countries* (Hong Kong, MacMillan)
- Lash, S. & Szerszynski, B. & Wynne, B. (eds.) (1996). *Risk, Environment & Modernity: towards a new ecology* (London, Sage)
- Lehtonen, H. (1990). *Yhteisö* (Jyväskylä, Vastapaino)
- Lieban, R. W. (1973). *Medical Anthropology*, Chapter 24, J. J. Honigmann (Ed.) *Handbook of Social and Cultural Anthropology* (Chicago, Rand McNally and Comp.)
- Lieber, J. (1990). *The Yoruba village: Cultural Perspectives*, S. Arnold & A. Nitecki (Eds.) *Culture and Development in Africa* (Edmonton, Africa World Press, Inc.)
- Lindskog P. (1987). *Why poor children stay sick: water sanitation hygiene and child health in rural Malawi* (Linköping University)
- Manderson, L. & Aaby, P. (1992). Can rapid anthropological procedures be applied to tropical diseases?, *Health Policy and Planning* 7 (1): 46–55.
- Martin, P.M. & O'Meara, P. (Eds.) (1995). *Africa*. Third Edition (London, Indiana University Press)
- Mebrahtu, S. (1991). *Women, Work, and Nutrition in Nigeria*, M. Turshen (Ed.), *Women and Health in Africa* (Trenton, New Jersey, Africa World Press, Inc.)
- Médecins Sans Frontières, MSF (1996). *The roles of women in Amukoko*, unpublished project document
- Médecins Sans Frontières, MSF (1997). *Household Survey on Diarrhoeal Diseases in Amukoko*, unpublished project document
- Médecins Sans Frontières, MSF (1998). *Needs Assessment Report. Amukoko, Lagos. 5-16 January, 1998*, unpublished project document
- Miguel, C.A; Tallo, V.L.; Manderson, L. & Lansang, M.A. (1999). Local knowledge and treatment of malaria in Agusan del Sur, The Philippines, *Social Science and Medicine*, 48: 607–618.
- Mikkelsen, B. (1995). *Methods for Development Work and Research. A Guide for Practitioners* (London, SAGE)
- Mills-Tettey, R. & Fadare, O. (1991). Socio-Economic and Investment Characteristics of a Traditional Yoruba Market. The Case of Odo-Ogbe, Ile-Ife, Nigeria, *Third World Planning Review* 13 (2): 191–206
- Moloye, O. (1991) *The Role of Traditional Medicine in Rural Nigeria: The Case of Owena Community in Ondo State*, *Journal of West African Studies ODU* 38 January/July: 83–97
- Moloye, O. (1996). *Water Use and Environmental Sanitation in Rural Nigeria. African Anthropology*, Vol III, No. 2: 102–107
- Momsen, J. (1991). *Women and Development in the Third World* (London, Routledge)

- Monitoring and Evaluation Annual Bulletin 1993 (1994). Ife Central Local Government Area, Osun State (Ife Central LGA/USAID/NCCCCD Project May, 1994)
- Morin, E. & Kern, A. (1993). *Terre-Patrie* (Paris, Seuil)
- Murdoch, J. & Clark, J. (1994). Sustainable Knowledge, *Geoforum* 25 (2): 115–132
- Mursu, A. (2002). Information Systems Development in Developing Countries. Risk Management and Sustainability Analysis in Nigerian Software Companies (Jyvaskylä, University Printing House)
- Myllylä, S. (2001). Street Environmentalism. Civil Associations and Environmental Practices in the Urban Governance of Third World Megacities (Tampere, Tampere University Press)
- Myrdal, G. (1963). *Economic Theory and Underdeveloped Regions* (London, Methuen)
- Nader, L. (1996). Anthropological Inquiry into Boundaries, Power, and Knowledge, L. Nader (ed.) *Naked Science: Anthropological Inquiry into boundaries, Power, and Knowledge* (London, Routledge)
- Narayan, D. & Srinivasan, L. (1994). Participatory Development Tool Kit. Training Materials for Agencies & Committees (The World Bank, Washington, D.C.)
- National Planning Commission, The Presidency (1997). 1997 Project Monitoring Report (Abuja, National Planning Commission)
- National Population Commission (1991). Census, final results, Osun State.
- Nigeria's Threatened Environment, NEST (1991). Nigerian Environmental Study/Action Team (Ibadan, Intec Printers Limited)
- Nisula, T. (1999). Everyday spirits and medical interventions: ethnographic and historical notes on therapeutic conventions in Zanzibar town (Helsinki, Finnish Anthropological Society)
- Nygren, A. (1999). Local Knowledge in the Environment–Development Discourse. From dichotomies to situated knowledges, *Critique of Anthropology* 19 (3): 267–288
- Nyong, A.O. & Kanaroglou, P.S (1999). 'Domestic Water Use in Rural Semiarid Africa: A Case Study of Katarko Village in Northeastern Nigeria', *Human Ecology* 27(4): 537–555
- Nwangwu, R.E. (1998). Slum dwellers' diagnosis of their own needs: implications for community development in Nigeria, *Development in Practice* 8(2), May: 225–228
- O'Brien, K. (1993). Using Focus Groups to Develop Health Surveys: An Example from Research on Social Relationships and Preventive Behaviour, *Health Education Quarterly* 20 (3): 361–372
- Obudho, R.A. & Mhlanga, C.C. (Eds.) (1988). *Slum and squatter settlements in Sub-Saharan Africa. Toward a Planning Strategy* (London, Praeger)
- O'Connor, A. (1983). *The African City* (London, Hutchinson)
- Odebiyi, A.I. (1989). Food Taboos in Maternal and Child Health: The Views of Traditional Healers in Ile-Ife, Nigeria, *Social Science and Medicine* 28 (9): 985–996

- Ogbole, J.O. (1981). Environmental Sanitation in Plateau State. In O. Okello (Ed.) *Health Problems in Rural and Urban Africa. A Nigerian Political Economy health Science*, pp. 137–148 (Zaria, Department of Political Science, Ahmadu Bello University)
- Ojo, G.J. A. (1966). *Yoruba Culture. A Geographical Analysis* (London, University of London Press Ltd)
- Okojie, C.E.E. (1994). 'Environmental Hazards and the Health Status of Women and Children in a Riverine Community in Nigeria: Nikrowa in Edo State', *Journal of Social Development in Africa* 10(1): 25–35
- Oladepo O; Brieger, W R; Otusanya, S; Kale, O O; Offiong, S & Titiloye, M (1997). Farm land size and onchocerciasis, status of peasant farmers in Southwestern Nigeria, *Tropical Medicine and International Health* 2(4), April: 334–340
- Olanrewaju, D.O. (2001). *Urban Infrastructure: a Critique of Urban Renewal Process in Ijora Badia, Lagos.*
- Olowu, D. & Erero, J. (1996). Governance of Nigeria's Villages and Cities through Indigenous Institutions, *African Rural and Urban Studies* 3(1): 99–121
- Olukoshi, A. (ed.) (1996). *Opposition Politics in Africa, Politeia Special Issue* 15 (3)
- Olukoshi, A.O. & Laakso, L. (1996). *Challenges to the Nation-State in Africa* (Upsala, Nordic Africa Institute)
- Olukoshi, A.O. & Wohlgemuth, L. (eds.) (1995). *A Road to Development. Africa in the 21<sup>st</sup> Century* (Upsala, Scandinavian Institute of African Studies, a synopsis of papers given at a conference held in Upsala 13–15 Oct. 1994)
- Olusi, J.O. (1998). Socio-Cultural, Economic and Environmental Determinants of African Women's Poverty and Disempowerment: The Nigerian Example, M. Kolawole (Ed.) *Gender Perceptions and Development in Africa. A Socio-Cultural Approach*, pp. 261–288 (Lagos, Arrabon Academic Publishers)
- Oluwole, S.B. (1997). Culture, gender and development theories in Africa, *Africa Development* 22(1), 95-121
- Omambia, D. (1990). Changing Sanitation Practices: A Socio-Cultural Approach, ???, *Society, Environment and Health in Low-Income Countries*, pp. 128 - 135 (Göteborg, Karolinska Institutet)
- Onwujekwe, O.; Chima, R.; Shu, E. & Okonkwo, P. (2002). Community-directed treatment with ivermectin in two Nigerian communities: an analysis for first year start-up processes, costs and consequences, *Health Policy* 62 (1): 31–51
- Opoku, K.A. (1978). *West-African Traditional Religion* (Awka, Kucena Damian)
- Osun State Government (1998). *Osun State at 7. Achievements X-rayed* (Ibadan, Osun State Government)
- Osunwole, S.A. (1990). The Significance of Beliefs and Healing in Yoruba Culture, *African Notes* 14 (1&2): 30–36

- Osunwole, S.A. (1995). Women in Health: The Role of Yoruba Women in Traditional Healing, *IFRA Ibadan Institute Francais de Recherche en Afrique*, University of Ibadan Vol. IV (2): 8–9
- Our Common Future (1988). World Commission on Environment and Development (Oxford, Oxford University Press)
- Patton, M.Q. (1990). *Qualitative Evaluation and Research Methods*, 2<sup>nd</sup> ed (London, Sage)
- Pearce; T.O. (1993). 'Lay Medical Knowledge in an African Context', S. Lindenbaum & M. Lock (Eds.) *Knowledge, Power and Practice: The Anthropology of Medicine and Everyday Life*, pp. 150–165 (Berkley, University of California Press)
- Peil, M. (1991). *Lagos. The City is the People* (London, Belhaven Press)
- Peil, M. & Oyeneye, O. (1998). *Consensus, Conflict and Change. A Sociological Introduction to African Studies* (Nairobi, East African Educational Publishers Ltd)
- Pido, M.D. (1995). The application of Rapid Rural Appraisal techniques in coastal resources planning: experience in Malampaya sound, Philippines, *Ocean & Coastal Management* 26(1):57–72.
- Pigg, S. L. (1997). "Found in Most Traditional Societies", *Traditional Medical Practitioners between Culture and Development*, F. Cooper & R. Packard (1997) *International Development & Social Sciences* (California, University of California Press)
- Pitts, M; McMaster, J.; Harmann, T. & Mausezahl, D. (1996). Lay Beliefs about Diarrhoeal Diseases: Their Role in Health Education in a Developing Country, *Social Science and Medicine* 43(8): 1223–1228
- Pool, R. (1994). On the creation and dissolution of ethnomedical systems in the medical ethnography of Africa, *Africa* 64 (1):1–20
- Porter, R.C.; Boakye-Yiadom, L.; Mafusire, A. and Tsheko, B.O. (Eds.) (1997). *The Economics of Water and Waste in Three African Capitals* (Ashhage)
- Pötsönen, R. & Välimaa R. (1998) Ryhmähaastatteluja nuorten ystävyys-suhteista, R. Pötsönen & R. Välimaa (Eds.) *Ryhmähaastattelu laadullisen terveystutkimuksen menetelmänä. Terveystieteen laitoksen julkaisusarja 9 /1998* (Jyväskylän yliopisto)
- Rapport, R. (1996). 'Community', in Alan Barnard and Jonathan Spencer (eds.) *Encyclopaedia of Social and Cultural Anthropology*. London etc.: Routledge, 114–117.
- Redclift, M. & Benton, T. (1994). *Social Theory and the Global Environment* (London, Routledge)
- Rinne, E.M. (2001). Yoruba village life and healing tradition, M. Järvelä; M. Korpela & K. Kuvaja (Eds.) *African Flows, Interim Report of the Research Network Environment, Health and Information Activities for Communities in Africa (ENHICA)*, pp. 73–112 (Jyväskylä, University Printing House)
- Rinne, E.-M. (2002). Local perceptions on environmental health – qualitative analysis of rural and urban living environment in Nigeria, *JANUS, Journal of the Finnish Society for Social Policy* 10 (2): 108–128

- Robert, C.F.; Bouvier, S. & Rougemont, A. (1989). Epidemiology, anthropology and health education, *World Health Forum* 10: 355–363
- Rosen, J.E. & Conly, S.R. (1998). Africa's Population Challenge: Accelerating Progress in Reproductive Health. Population Action International, Country Study Series #4 (Washington, D.C.)
- Rostow, W. W. (1960). *The Stages of Economic Growth* (Cambridge, Cambridge University Press)
- Saddio, M.A. (1981). Environmental Sanitation as a Health Problem in Kano City, O. Okello (Ed.) *Health Problems in Rural and Urban Africa. A Nigerian Political Economy health Science*, pp. 84–91 (Zaria, Department of Political Science, Ahmadu Bello University)
- Sadiku, M. N. O. (1996). 'The Yoruba', Marcellina, Okehie-Offoha & Matthew N. O. Sadiku (Ed.), *Ethnic and Cultural Diversity in Nigeria* (New Jersey, Africa World Press)
- Sahil, M.A.M. (1999). *Environmental Politics and Liberation in Contemporary Africa* (London, Kluwer Academic Publications)
- Salo, H. (2001). The Nature of Sustainable Development of Artisanal Fisheries in West Africa, M. Järvelä; M. Korpela & K. Kuvaja (Eds.) *African Flows, Interim Report of the Research Network Environment, Health and Information Activities for Communities in Africa (ENHICA)*, pp. 37–50 (Jyväskylä, University Printing House)
- Sangodoyin, A.Y.(1993). Women's role in rural water supply and development: trends and expectations in Nigeria, *The Environmentalist* 13 (4): 255–261
- Satterthwaite, D. (Ed.) (2001). *The Earthscan Reader in Sustainable Cities* (London, Earthscan)
- Scrimshaw, S.C.M. & Hurtado, E. (1988). Anthropological Involvement in the Central American Diarrheal Disease Control Project, *Social Science and Medicine* 27 (1): 97–105
- Serres, M. (1990). *Le contrat naturel* (Finnish edition 1994, Jyväskylä, Gummerus Oy)
- Sesay, A. & Odebiyi, A. (Eds.) (1998). *Nigerian Women in Society and Development* (Ibadan, Dokun Publishing House)
- Seton, K. (1999). Fourth World Nations in the Era of Globalization. An Introduction to Contemporary theorizing Posed y Indigenous Nations, *CWIS – The Fourth World Journal*, 4(1), Aug. 1999
- Shodeinde, O.A. (1989). *Milestone '89. Primary Health Care in Nigeria*. (Lagos, Watershed Nigeria Limited)
- Short, J.F. (1990). Hazards, Risks and Enterprise: Approaches to Science, Law, and Social Policy, *Law & Society Review* 24(1): 179–198
- Silverman, D. (1985). *Qualitative Methodology and Sociology*.
- Slim, H. (1996). What is development?, Deborah Eade (Ed.) *Development and Social Diversity. A Development in Practice Reader Series*, pp. 63–68 (London, Oxfam)
- Slovic, P.; Fischhoff, B. & Lichtenstein, S. (1980). Facts and Fears: Understanding Perceived Risk, R.C. Schwing & W.A. Alberts Jr. (Eds.) *Social Risk Assessment: How Safe is Safe Enough?* (New York, Plenum Press)

- Sofowora, A. (1993). *Medical Plants and Traditional Medicine in Africa* (Ibadan, Spectrum Books Limited)
- Sonntag, H. (1994). The Fortunes of Development, *International Social Science Journal* 140, June
- Spikard, J.V. (1990). Worldview, Beliefs and Society: Mary Douglas' Contribution to the Study of Human Ideas on Ultimate Reality and Meaning, *Ultimate Reality and Meaning* 13 (2) June, 109–121.
- Sridhar, M. K. (2000). Ground Water in Nigerian Urban Centres: Problems and Options, *Schriftenreihe Des Vereins Fur Wasser-Boden-Und Lufthygiene*, 105: 393–397.
- Strydom, P. (2002) *Risk, Environment and Society. Ongoing debates, current issues and future prospects* (Buckingham, Open University Press)
- Stryker, R. & Ndegwa, S.N. (1995). *The African Development Crisis*, P.M. Martin & O'Meara Africa, Third Edition, pp. 375–394 (London, Indiana University Press)
- Sudarkasa, N. (1973). *Where Women Work: A Study of Yoruba Women in the Marketplace and in the Home* (Michigan, University of Michigan Press)
- Takasaki, Y. & Barham, B.L. (2000). Rapid Rural Appraisal in Humid Tropical Forests: An Asset Possession-Based Approach and Validation Methods for Wealth Assessment Among Forest Peasant Households, *Social Science and Medicine*, 28 (11): 1961–1977.
- Teivainen, T. (2002). *Enter Economism Exit Politics. Expert, Economic Policy and the Damage to Democracy* (London, Zed Books)
- The Imo State Evaluation Team (1989). Evaluating water and sanitation projects: lessons from Imo State, Nigeria, *Health Policy and Planning* 4 (1): 40–49 The Nigeria Congress (2002)
- . <http://www.nigeriacongress.org/fgn/administrative/lgabystate.asp>
- Thisday (2001). *Ajegunle May Erupt Again, Muslim youth alert policy, sue for peace*, <http://www.thisdayonline.com/archive/2001/08/26/20010826news08.html>
- Tipple, G.A. (1994). House and dwelling, family and household: towards defining housing units in West African cities, *Third World Planning Review* 16 (4), 429–450
- Tostensen, A.; Tvedten, I. & Vaa, M. (Eds.) (2001). *Associational Life in African Cities. Popular Responses to the Urban Crisis* (Stockholm, The Nordic Africa Institute)
- Townsley, P. (1993). *Training of Rapid Appraisal Teams. Notes for Trainers.* (Food and Agriculture Organization, Rome)
- Townsley, P. (1996). *Rapid rural appraisal, participatory rural appraisal and aquaculture.* FAO fisheries technical paper no. 358 (Rome, Food and Agricultural Organisation, UN)
- Trager, L. (1998). Home-Town linkages and Local Development in South-Western Nigeria. Whose Agenda? What Impact?, *Africa* 86 (3): 360–382
- Tsalikis, G. (1993). The Onchocerciasis Control Programme (OCP) in West Africa: a review of progress, *Health Policy and Planning* 8(4): 349–359

- Tucker, V. (1996). Introduction: A Cultural Perspective on Development, *The European Journal of Development Research*, 8(2), Dec. 1996:1–21
- Tuomisto, A. (2001). How Do Meanings of Environment Construct Local Culture?, *ARV, Nordic Yearbook of Folklore 2001*, pp. 101–112 (Lund, The Royal Gustavus Adolphus Academy Upsala)
- Touraine, A; Dubet, F.; Wieviorka, M. & Strezelecki, J. (1984). *Solidarity: The Analysis of a Social Movement: Poland 1980–1981* (New York, Cambridge University Press)
- Uchoa, E.; Barreto, S.M.; Firmo, J.O.A.; Guerra, H.L.; Pimenta, F.G. & Lima e Costa, Maria Fernanda (2000). The control of schistosomiasis in Brazil: an ethno-epidemiological study of the effectiveness of a community mobilization program for health education, *Social Science and Medicine* 51: 1529–1541
- Uduku, N.O. (1994) Promoting community based approaches to social infrastructure provision in urban areas in Nigeria, *Environment & Urbanization* 6(2): 57–78
- Umeh, J.C.; Amali, O. & Umeh, E.U. (2001). Impact of urinary schistosomiasis on rural land use: empirical evidence from Nigeria, *Social Science and Medicine* 52: 293–303
- UNEP (2002). *Africa Environment Outlook. Past, present and future perspectives* (Nairobi, United Nations Environmental Programme)
- UNICEF (1995). *Report on the knowledge, Attitudes and Practices (KAP). Study on traditional latrines, beliefs and hygiene practices. Vol. 1 & 2., August* (Ikorodu, Zolaboda Limited, Nigeria)
- UNICEF (1996). *The State of the World's Children 1996* (Oxford University Press, Unicef)
- United Nations (2002). *Report of the World Summit on Sustainable Development* (New York, United Nations)
- USAID (1994). *USAID Governance Initiative in Nigeria: A Strategic Assessment of Primary Health Care and Local Government* (Lagos, USAID Affairs Office)
- Utarini, A.; Winkvist, A. & Ulfa, F.M. ((2002). Rapid assessment procedures of malaria in low endemic countries: community perceptions in Jepara district, Indonesia, *Social Science and Medicine*, in press.
- Uurtimo, Y. (1994). *Kehitysajattelun juuret (Roots of Development Thinking)* (Tampere, University of Tampere)
- Uzochukwu, B.; Akpala, C. & Onwujekwe, O. (in press). How do health workers and community members perceive and practice community participation in the Bamako Initiative programme in Nigeria? A case study of Oji River local government area, *Social Science and Medicine* (article in press)
- Vaa, M. (1993). *Towards More Appropriated Technologies? Experiences from the Water and Sanitation Sector* (Motala, Nordic Africa Institute)
- Varis, O. (1999). Dreams and reality in water resources management: A critical view to leading paradigms, *Global Environmental Change: Human and Policy Dimensions*, 9 (4): 255–259



- Varis, O. & Somlyódy, L. (1997). Global Urbanization and Urban Water: Can Sustainability be Afforded?, *Water Science and Technology* 35 (9): 21-32, 1997
- Vaughan, O. (1995). Assessing Grassroot Politics and Community Development in Nigeria, *African Affairs* 94: 501–518
- Vaughan, O. (2000). Nigerian Chiefs. Traditional Power in Modern Politics 1890–1990s (Rochester, University of Rochester Press)
- Vickers, J. (1991) Women and World Economic Crisis (Avon, The Bath Press)
- Vlassoff, Carol; Weiss, Mitchell; Ovuga, E.B.L.; Eneanya, Christine; Nwel, P. Titi; Babalola, S.Sunday; Awedoba, A.K.; Theophilus, Biri; Cofie, Patience & Shetabi, Pegah (2000). Gender and the stigma of onchocercal skin disease in Africa, *Social Science and Medicine* 50: 1353–1368
- Väyrynen, R. (1998). Globalisaatio: uhka vai mahdollisuus? (Jyväskylä, Atena)
- Watts, S. (1994). Seasonality and dracunculiasis transmission: the relevance for global eradication, *Health Policy and Planning* 9(3): 279–287
- Watts, S. (1998). Perceptions and priorities in disease eradication: dracunculiasis eradication in Africa, *Social Science and Medicine* 46(7): 778–810
- Watts, S.; Breiger, W.R. & Yacoob, M. (1989). Guinea worm: and in-depth study of what happens to mothers, families and communities, *Social Science and Medicine* 29(9): 1043–1049
- Weidner, L. (1991). 'The Need for Anthropological Input to Environmental Health Issues', *Bulletin of the International Committee of Urgent Anthropological and Ethnological Research*, 32-3337-46, 1990–1999
- Westerlund, D. (1989). Pluralism and Change. A Comparative and Historical Approach to African Disease Etiologies, A. Jacobson-Widding and D. Westerlund (Eds.) *Culture, Experience and Pluralism. Essays on African Ideas of Illness and Healing*, pp. 169–176 (Stockholm, Almqvist & Wiksell International)
- WHO (1990). Environment and Health, The European Charter and Commentary, WHO, Geneva
- WHO (1997). An African Programme for Onchocerciasis Control (APOC), <http://www.who.int.ocp/apoc/>
- WHO (1998). Sanitation promotion/WSSCC Working Group on Promotion of Sanitation. (Geneva, World Health Organisation)
- WHO (2002). The World Health Report (Geneva, World Health Organization)
- WHO/UNICEF (2000a). Access to Improved Drinking Water sources and Improved Sanitation, Nigeria. WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation Coverage Estimates 1980–2000, September 2001.
- WHO/UNICEF (2000b) Global Water Supply and Sanitation Assessment 2000 Report. WHO/UNICEF Joint Monitoring Programme for Water Supply and Sanitation (Geneva, WHO)
- WHO/UNICEF (2001). Joint Monitoring Programme for Water Supply and Sanitation Coverage Estimates 1980–2000. Nigeria, September 2001 (Geneva, World Health Organization).
- Whyte, S. R. (1997). Questioning Misfortune. The pragmatics of uncertainty in Eastern Uganda (Cambridge, University Press)

- Whyte, W. F. (1991). *Participatory Action Research* (California, Sage)
- Wildavsky, A. (1988). *Searching for Safety* (New Brunswick, Transaction Books)
- World Bank (1993). *Water and Sanitation Programme. Annual Report 1991–1992* (Washington D.C, The World Bank)
- World Bank (1999). *Entering the 21<sup>st</sup> Century. World Development Report 1999/2000* (Oxford University Press)
- Woube, M. (1996). Environmental Deterioration in Sub-Saharan Africa (SSA): The Challenge of Sustainable Development, *Nordic Journal of African Studies* 5(1): 51–62
- Wunmi, W. (2002). Citizenship Questions and Environmental Crisis in the Niger Delta: A Critical Reflection, *Nordic Journal of African Studies* 11 (3): 377–392
- Wynne, B. (1996). May the Sheep Safely Craze? A Reflexive View of the Expert-Lay Knowledge Divide, S. Lash et. al. (Eds.) *Risk, Environment & Modernity* (London, Sage)
- Yacoob, M.; Brieger, W. & Watts, S. (1989). Primary health care: why has water been neglected? *Health Policy and Planning* 4(4): 328–333
- Yearley, S. (1996). *Sociology, Environmentalism and Globalization* (London, Sage)
- Young, E. (1995). *Third World in the First. Development and Indigenous Peoples*. (London, Routledge)

### **Other sources**

Field Diary 1998/E-M Rinne  
 Field Diary 1999/E-M Rinne  
 Field Diary 2001/E-M Rinne

Focus Group Discussion HEPF 1998; HEPF 1999  
 Interviews HEPI 1998; HEPI 1999