

WHO Collaborating Centre for Health Promoting Water Management and Risk Communication



Institute for Hygiene and Public Health
University of Bonn



A report of the Bishop Shannahan Hospital in Nsukka, Nigeria

Nigeria:

Nigeria is a federal republic in West Africa which borders on Niger in the north, on Chad and Cameroon in the east, on the Gulf of Guinea in the south and on Benin in the west. Nigeria is not only one of the largest, but also one of the African countries facing the most problems.

Geography

Large parts of Nigeria are composed of flat tableland which is flown through by some rivers. Most of the country can be used for agricultural purposes. The country's most important natural resources are ample crude oil and natural gas sources close to the coastline.

Geographically, Nigeria can be subdivided into four different regions. Along the coast there is a belt from swamps and mangrove woods which stretches by more than 16 km into the inland of most of the regions.

In the Niger delta area the coast belt stretches more than 100 km into the inland. On the other side of the coastal plain follow the valleys of Niger and Benue where there is a broad, hilly forest belt which gradually mounts to the rocky area of Jos and the Bauchi Plateau. On the other side of this plateau there is a savannah which stretches up to the Sahel region, a semi-desert in the north. The great plain of the savannah area is Nigeria's most important cultivable area. In the east there is the Adamaoua massif which borders on Cameroon with Nigeria's highest point - the Dimlang (bird peak) - having a height of 2,042 metres.

Population and Politics

Nigeria is Africa's most populous state with 110 to 120 million inhabitants. According to the number of inhabitants, the economic power and the military potential, the country is the unchallenged regional power of ECOWAS (Economic Community of West African States) which was established in 1975.

The state which has been independent since 1st October 1960 is troubled by extreme ethnic, religious, regional, social and political differences.

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Depending on the definition, between 250 and more than 430 ethnic groups compete for political power and the use of the economic sources, particularly crude oil. The “black gold” the sources of which are mainly in the Niger delta on the Atlantic coast makes up between 95% and 99% of the export proceeds, two-thirds of the public revenue and nearly one-seventh of the gross domestic product. The rivalry for resources and power between the three largest groups of the population results in a north-south divide which is a threat to the cohesion of the state. The north holds the political dominance while the economically most active groups of the population and the economic potentials have settled in the south.

Health Care System

Nigeria’s health care system is a self-pay system - there is no health insurance. There are state hospitals and in the larger villages also modern psychiatric hospitals, however, the patients must pay for the admittance to the hospital, for food as well as for accommodation, drugs and necessary medical procedures, in private hospitals also for medical consultations. As a result of the bad management of the hospitals and a lack of well-trained personnel, the number of private clinics which can only be visited by wealthy patients increases.

Nsukka:

The village in the south of Nigeria has approximately 70,000 inhabitants. Besides Christians and Muslims, traditional religions are also strongly represented.

The unemployment rate is 30% - 40 % and despite of the fact that there are a lot of schools, the illiteracy rate is very high. More than 70 % of women are not able to read and write which is mainly due to the fact that the governmental school as well as many christian schools are short of material and teachers. The number of private schools for wealthy people is increasing and many teachers from public schools change to them. Many people cannot afford the school fees and uniforms, so that school education is only ensured if family members can bear the costs.

Besides of some private clinics and health care centres, which are, however, not worth at this term, there is only one hospital in Nsukka, managed by the diocese, which was built by Bishop Shanahan about 50 years ago. The next hospital and the university clinic are situated in the provincial village of Enugu which is approximately 80 km away.

Bishop Shanahan Hospital Nsukka:

The Nsukka Hospital has more than 200 beds. A school for nursing, midwives and assistant medical technicians is affiliated. Since the construction of the buildings 50 years ago, no renovation has been made for different reasons.

The number of personnel is too high for the prevalent conditions. Besides 8 doctors, 19 nurses, 7 midwives, 5 laboratory assistants, 2 anaesthetists, 1 hospital matron, 1 administrator and 1 pharmacist, a lot of unskilled labour are employed. An average of only 20 to 30 patients are treated as inpatients which is mainly due to the fact that every kind of work and also the accommodation must be paid by the Patients. The hospital does not receive any support at all neither from the Government nor from national or international aid organisations.

All drugs, materials, foodstuff and personnel costs must be covered from the revenues.



Many people cannot afford the stay in the hospital and prefer to go to traditional healers who might be cheaper and to so-called private doctors who often treat patients without training and expert knowledge. There is a high risk to receive a blood transfusion which is not tested for HIV.

Relatives often take patients out from the therapy too early for financial reasons, as the families cannot afford further treatment. Patients who can afford a further treatment are often treated in the private clinic which is far away, but well equipped. The transport and the treatment there is, however, not affordable for poorer patients. Therefore, it happens that patients, although they have already recovered, are still kept in the hospital until the family has raised the necessary money.

The most frequent diseases that are treated in the hospital are malaria, anaemia, diarrhoeal diseases, tuberculosis and pneumonia, but also cardio-vascular diseases with a surprisingly high share of cerebral apoplexies. Aids, gonorrhoea, syphilis, skin diseases and unclear clinical appearance are frequently found. The children's ward mostly faces malaria, diarrhoeal diseases, pneumonia, anaemia and measles of which many children in Africa still die, despite vaccination programmes. Malnutrition is often combined with tuberculosis or AIDS.

In the surgical ward the whole spectrum of surgery can be found. Abscesses, wound infections, injuries, burn injuries, intestinal obstructions, polytrauma and appendicitis are only a small selection of the patient's illnesses.

On the gynaecologic ward mostly the surgeon has to assist. The obstetric ward is very well frequented as a result of the well-run prenatal care which has been widely accepted by pregnant women.

School, training and study are very expensive. The hospital makes money out of the training and should get the opportunity to offer an adequate, expedient training on the jobs which is very important for an efficient health care system.

The hygienic conditions

The hospital's operation tract is divided into a septic and an aseptic area. As a result of the diversity of the operations carried out at the hospital, it is particularly important that preconditions for sterile and hygienic working are made. However, this condition is often not given, so that the patients are given prophylactic antibiotics after each larger operation as a result of which the spreading of antibiotic resistance increases and favourable drugs often no longer take effect.

The sanitary facilities cannot be used. There is no functioning water pipe, so that neither the toilet flush nor the showers can be used. Washing hands is not possible with flowing water which constitutes a great problem for the medical personnel when treating patients, as hand disinfection is hardly possible. In an emergency, disinfection could be made with pure alcohol which is, however, only done very rarely.



Operating room



Washhand basin

The surgical gloves are washed, dried, powdered and newly sterilised after each operation. A control of this sterilisation is not carried out. Mostly the materials used on the wards are only sterilised in boiling water and are used again. There are hardly any disposable articles, even the surgical caps and the face masks are from fabric and are re-used again. The water for the operating room is stored in an elevated tank beside the building. From there it flows through a pipe to the operating room. Often the tank is not filled and the water of a barrel is used for washing hands before an operation.

Drinking water supply is a great problem for the whole city. The pipes of the water works are broken and not repaired. The water for the hospital is delivered by tanker trucks which is then filled into an uncovered cistern. The patients, their relatives and the personnel take the water which is used for all purposes, also for drinking, with a soiled bucket at a rope. The water is not filtered, disinfected or boiled. The knowledge about water-borne diseases is very low.



The only watersource of the hospital is this cistern in which water is being gathered

The waste is burned in a big whole beside the hospital. There is no incinerator which would be urgently needed for the hospital waste. A lot of waste is distributed on the whole hospital premises. Old scrapped parts are laying around and are not disposed off.

There is no functioning refrigerator, so that the maintenance of the cold chain for vaccines, blood and other material is not guaranteed.

Reliable electricity supply is not always ensured. Sometimes little lamps are charged during the day in order to be able to carry out deliveries or operations at night. These lamps are often out of order and therefore it can happen that in case of an emergency deliveries or even operations must be carried out at candlelight or with oil lamps.

Expensive and special drugs must be obtained by the patients themselves. There is a great black market for drugs in Nigeria. Also with the drugs purchased officially it is not always sure that they contain the dose indicated. The dressing material and other medical supplies, as for example infusion systems are of a very bad quality.



Hospital bed

Health centres in the catchment area:

A further hospital at the distance of about 2 hours is affiliated to the catholic hospital in Nsukka.

A maternity home with 10 beds is situated at a distance of about 30 minutes by car. The medical care and equipment are so bad that the patients prefer to set off on the long and arduous way to Nsukka. In case of high-risk births this often leads to the fact that the newborn infants and their mothers do not survive the journey.

It is very important for the population of Nsukka and its environments to have a well-functioning and equipped hospital. Furthermore, it is important that the health care centres outside the city offer efficient health care.

Edith Fischnaller

Contact: edith.fischnaller@ukb.uni-bonn.de

Recent and future projects

Manual on Waterborne Disease Surveillance in Central Asia

The WHO Regional Office for Europe supports a multi-country public health initiative on gastro-intestinal diseases and water supply in the central Asian republics (CAR). Therefore, the WHO CC for Health Promoting Water Management and Risk Communication together with the Water and Sanitation (WSN) Programme of the WHO Regional Office for Europe organized a training course on waterborne disease surveillance with experts from different central Asian countries which took place in Bonn earlier this year. (see WaMRi- Newsletter 4/2003)

Following this meeting, a manual is being compiled presently, comprising all the lecture notes prepared for the training course and additional WHO guidance documents in order to obtain a basic guidance document on water-related diseases in central Asia.

The main topics of this manual are:

- Review of important water-related diseases of chemical and microbiological origin
- Water monitoring strategies for the assessment of drinking water quality - chemical parameters/ microbial parameters
- Waterborne disease epidemiology and surveillance
- Water Safety Plan
- Data management and analysis (Geographical Information Systems)

Friederike Dangendorf and Alexandra Wieland
contact: friederike.dangendorf@ukb.uni-bonn.de

Feasibility study on the use of GIS for the surveillance of waterborne diseases in the Volga Basin. An activity between the WHO Collaborating Centre for Health Promoting Water Management and Risk Communication, Bonn, and the Regional Office for Europe of the World Health Organization 2002-2003, Water and Sanitation Unit, Rome.

This feasibility study started end of 2002 and is now finalized. It had the aim to investigate the possibilities to use GIS for the surveillance of waterborne diseases in the Volga Region and to get information about the state-of-the-art of the use of GIS in the whole Russian Federation. Following an intensive Internet and literature research, Russian experts were consulted in Moscow by Hiroko Takasawa, WHO ECEH, Rome, representative. Three Russian experts were invited to come to a workshop about the use of GIS for the surveillance of waterborne diseases in the Russian Federation, which was held on 28 and 29th of June 2003 in Bonn by the WHO CC together with WHO ECEH, Rome.

On this workshop the presentations of the Russian experts demonstrated the current status of the use of GIS in the Russian Federation for the surveillance of waterborne diseases. An extensive discussion and synopsis of all available information led to the result that the use of GIS was assessed as feasible in the Russian Federation. It included future considerations to use GIS for the surveillance of waterborne diseases Russia-wide. The main decision was to develop concepts for the future use, to define priority tasks and to arrange a GIS training. All the planned activities should be based on a co-operation between the WHO ECEH, Rome, and the WHO CC Bonn together with Russian experts.

Angela Queste
contact: angela.queste@ukb.uni-bonn.de

Recent and future projects

Cooperation between WHO CC Bonn and Curtin University, Perth, Australia: Unit "Medical Geography" is on the way for integration into Postgraduate Studies on International Health.

In the last two issues of our newsletter, it was already reported about an e-learning unit "Medical Geography". Now the cooperation between the Universities of Bonn and Perth is consolidating. In July and September this year, conceptual meetings took place to discuss the content of the modules for this unit.

It is planned to teach the following topics:

- Introduction to medical Geography
- Application of medical geography: spatial patterns of health and diseases, environmental, social and political aspects,
- Methods: descriptive and analytical methods, Geographic Information Systems,
- Water and health: water supply and sanitation, water access and water stress, water contamination, water-borne diseases,
- monitoring and surveillance,
- disaster management, and
- approaches and projects to solve water and health problems in developed, developing and newly industrialized countries

Angela Queste

contact: angela.queste@ukb.uni-bonn.de

Special Events

2004

International Congress on infectious diseases

4-7 March 2004, Cancun, Mexico

The congress is one of the world's leading forums for the exchange of infectious disease advances and is unique in its ability to draw physicians, scientists, and public health officials from a range of backgrounds and countries. Based on previous congresses, about 3500 people from over 100 countries are expected to attend the 11th ICID.

An outstanding international faculty of 137 speakers from 29 countries has been assembled to participate in symposia that will cover developments in such areas as: vaccines and diagnostics for SARS and agents of bioterrorism, emerging viral diseases, infectious disease surveillance, HIV prevention and treatment, malaria, dengue, travel medicine, genomics and proteomics, antimicrobial resistance, foodborne pathogens, infection control, and sepsis.

The 11th ICID program will include 6 plenary lectures, 36 symposia, posters, workshops, and meet-the-professor sessions. The plenary speakers for the 11th ICID are Shizuo Akira of Japan, Paul Farmer of the United States, Eduardo Gotuzzo of Peru, Adrian Hill of the United Kingdom, Rino Rappuoli of Italy, and Jaime Sepulveda of Mexico.

et2004

30 March - 1st April 2004

NEC, Birmingham, UK

The UK's premier environmental technology & management services exhibition.

Technical Field: Wastewater Treatment

Environmental Management

Air Quality

Health & Safety

Water Resources

Waste/Recycling

Soil & Groundwater

Contact: Exhibitions Team

Phone/Fax: Tel: 0044 (0) 208 651 7100; Fax: 0044 (0) 208 651 7117

E-mail: exhibit@fav-house.com

Web: <http://www.et-expo.co.uk>

International Conference on Automation in Water Quality Monitoring - AutMoNet 2004
19-20 April 2004
Vienna, Austria

There is an increasing need for water quality information systems. These systems are mainly based on automated measurement devices. In order to discuss the state of the art and the future possibilities the main objective of the conference is to enhance the dialogue between water specialists, plant operators, chemists and instrument suppliers. This interdisciplinary dialogue is essential for the development of solutions for water quality management.

The scientific program of AutMoNet 2004 will cover a wide range of topics from leading edge sensor technology, wise use of novel technology, data to information transfer, successful end-user applications in municipal water quality management, environmental monitoring, to water system security.

Contact: Günter Langergraber
E-mail: autmonet2004@boku.ac.at
Web: <http://iwga-sig.boku.ac.at/autmonet/>

River Flow 2004
23-25 June 2004
Naples, Italy

River valleys have been the first places to develop a human civilization. They still are among the most populated areas on earth. Human activities are sometimes a threat to the rivers health, but the rivers are as often a resource as are a hazard to riverside communities. The need for observation, analysis and control of fluvial processes has thus increased dramatically. River Hydraulics is more than ever needed to guide engineering works, evaluate environmental impacts, and mitigate hazards. At the same time, new knowledge is developed from advances in physical understanding, computational methods and measurement techniques, and by the integration with modern technologies. Researchers involved in these developments are cordially invited to attend River Flow 2004. Organised under the auspices of the Fluvial Hydraulics and Eco-Hydraulics Sections of the International Association of Hydraulic Engineering and Research (IAHR), this international conference will constitute a forum for all scientists and engineers working for a better understanding of river hydraulics processes. The conference will cover both hydrodynamic and sediment related phenomena.

Technical Field: Water Resources
Soil & Groundwater
Contact: Massimo Greco
Phone/Fax: Tel: +39-081-7683427
Web: <http://www.studioesse.net/river/>

Fourth Ministerial Conference on Environment and Health
23-25 June 2004
Budapest, Hungary

The Budapest Conference is the fourth in a series started in 1989, bringing together ministers of health and of environment and major stakeholders. European ministers are expected to reach consensus and make political commitments to ensure safer environments for children through the adoption of a Conference Declaration and of the European action plan for children's health and environment (CEHAPE).

**6th International Trade Fair and Congress "Water: Ecology and Technology" -
ECWATECH-2004
1-4 June 2004
Russia, Moscow**

Water resources (surface and ground water), Water supply, Water disposal and wastewater treatment, Economics and law, Environmental monitoring of water works

Technical Field: Water Resources Environmental Management Wastewater Treatment

Contact: Sergey Malygin

Phone/Fax: Tel: +7 095 965 1364; Fax: +7 095 975 5104

E-mail: s.malygin@sibico.com

Web: http://www.sibico.com/waste-tech/_e/

**Aquatech Amsterdam 2004
28 September - 1st October 2004
Amsterdam RAI Exhibition and Conference Centre, Amsterdam, The Netherlands**

Aquatech Amsterdam 2004 is the place for you to meet water professionals from all over the world who wish to keep abreast of all the latest developments in the water market. Aquatech, the international trade event for water technology and water management, will as always provide the best possible surroundings in which to make new contacts and renew existing ones. At Aquatech Amsterdam 2004 you can present your products and services to technically oriented professionals and policy-makers from government and industry. At Aquatech Amsterdam 2004 different national and international target groups will be presented on a segmented basis.

Amsterdam RAI
Aquatech Project team
P.O. Box 77777
1070 MS AMSTERDAM
The Netherlands

Phone: +31 20 549 12 12
Fax: +31 20 549 18 89

New books and articles

Brebbia, C.A. & D. Fayzieva (2003): Environmental health risks II. WIT Press Southampton.

Matos, R., Cardoso, A., Ashley, R., Duarte, P., Molinari, A., Schulz, A.(2003): Performance Indicators for Wastewater Services. IWA Publishing.

McIntosh, A.C.(2003): Asian Water Supplies- Reaching the Urban Poor. IWA Publishing.

Timmerman, J., Langaas, S.(2003): Environmental Information in European Transboundary Water Management. IWA publishing.

Dufour, A., Snozzi, M. Koster, W., Bartram, J., Ronchi, E., Fewtrell, L.(2003): Assessing Microbial Safety Of Drinking Water- Improving Approaches And Methods. IWA Publishing.

Links

WHO CC for Health Promoting Water Management and Risk Communication

<http://www.meb.uni-bonn.de/hygiene/who/whocc.htm>

WHO Europe, Water and Sanitation Homepage

<http://www.euro.who.int/eprise/main/WHO/Progs/WSN/Home>

UNEP Net: Freshwater

<http://freshwater.unep.net/>

Properties of water and the hydrological cycle

http://www.ec.gc.ca/water/en/nature/prop/e_prop.htm

A pilot analysis of global freshwater ecosystems by C. Revenga et al, 2000. From the World Resources Institute, Washington DC

http://www.wri.org/wri/wr2000/freshwater_page.html

Solutions for a Water-Short World

<http://www.infoforhealth.org/pr/m14edsum.shtml>

A website about groundwater protection

<http://www.county.oxford.on.ca/groundwater/>

Links To Websites Related To Water Issues

<http://www.unep.org/vitalwater/links.htm>

For comments & contributions contact:

Alexandra Wieland
Institute for Hygiene and Public Health
Sigmund-Freud-Str. 25
53105 Bonn

Tel.:(0049) (0)228-287 9515
Fax:(0049) (0)228-287 9516
mail:alexandra.wieland@ukb.uni-bonn.de