

Curriculum Vitae

Personal Information:

Name : Bashir Mohamed El-Hassan

Nationality : Sudanese.

Date of Birth : 1943

Languages : Arabic, English, Russian.

Address : Faculty of Engineering, University of Khartoum, Khartoum, Sudan.

Tel. : +249912918898

Education:

- Ph.D. in Water and Wastewater Engineering, Strathclyde University, Glasgow, UK, 1973 – Civil Engineering Department.
- Post Graduate Diploma (M.Sc.) in Sanitary Engineering, IHE, Delft, Netherlands, 1969.
- B.Sc. (first class honours) in Chemical Engineering, Mendeleev Institute of Technology, Moscow, Russia, 1967.

Professional Training:

- Postgraduate certificate in water and wastewater, Loughborough University, UK, 1979.
- Postgraduate certificate in coastal pollution control, Copenhagen, Denmark, 1978.

Memberships:

- Member, Sudan Engineering Society.
- Member of the Sudanese Environmental Conservation Society (SECS).
- Associate member of the American Institute of Chemical Engineering (AIChE)

Post Held:

- 2004 to date: Associate Prof., Faculty of Engineering, University of Khartoum, Khartoum, Sudan.
- 2002-2004: Head, Chemical Engineering, Department Faculty of Engineering, University of Khartoum, Khartoum, Sudan.
- 2000-2002: Associate Prof., Faculty of Engineering, University of Khartoum, Khartoum, Sudan.

- 1992-2000: Dean, Faculty of Public and Environmental Health, University of Khartoum, Khartoum, Sudan.
- 1991-1992: Head, Chemical Engineering Department ,Faculty of Engineering, University of Khartoum, Khartoum, Sudan.
- 1987-1991: Associate Prof., Faculty of Engineering, University of Khartoum, Khartoum, Sudan.
- 1982-1987: Dean, School of Hygiene and Environmental Studies, Khartoum, Sudan.
- 1980-1982: First Coordinator of M.Sc. Sanitary Engineering Course, in the Civil Engineering Department, Faculty of Engineering, University of Khartoum, Khartoum, Sudan.
- 1980-1982: Head, Chemical Engineering Department ,Faculty of Engineering, University of Khartoum, Khartoum, Sudan.
- 1980-1999: Coordinator, Urban Zone Management Option, Institute of Environmental Studies, University of Khartoum, Khartoum, Sudan.
- 1980-1990: Coordinator, Coastal Zone Management Option, Institute of Environmental Studies, University of Khartoum, Khartoum, Sudan.
- 1973-1980: Lecturer, Faculty of Engineering, University of Khartoum, Khartoum, Sudan.
- 1967-1973: Senior Scholar, Faculty of Engineering, University of Khartoum, Khartoum, Sudan.

Postgraduate Research Supervision: Supervised Successfully:

- More than 190 M.Sc.
- 24 Ph.D.
- At present supervising 10 Ph.D.

Professional ExperienceL

1. The main investigator on appropriate technologies for water supply and sanitation in developing countries, World Bank Project, 1991.
2. Researcher, application of slow sand filters for water supply, a joint project with the International Reference Centre (IRC) for community water supply (Netherlands), the Rural Water Corporation (Sudan and Gazira Board (Sudan), 1979-1983 (three phases).
3. Sanitation expert and deputy team leader, Evaluation of UNICEF water supply and sanitation project in South Kordufan, Sudan, 1982.
4. Short-term consultant, Evaluation of Sanitation services in Darfur region, UNDP, 1985.
5. Sanitation expert, Management problems of greater Khartoum, a joint project between IDRC- Canada and Institute of Environmental Studies, University of Khartoum, Sudan, 1984.
6. Team leader, pilot-scale study of the liquid waste treatment for Sinnar Sugar Factory, Sudan, 1986.

7. Short-term consultant, Evaluation of the Health Institute in Qatar, WHO assignment 1987.
8. Short-term consultant, Evaluation of Wad El-Mgboul Institute for water Technologies, UNICEF assignment 1987.
9. Sanitation expert, Evaluation and upgrade of water supply and sanitation at Wad Taktook and El-Gedarif hospitals and Hantoub Secondary School, with Promang Consultants for UNHCR, 1988.
10. Water expert, evaluation of the surface water program of the UNICEF in South Kordifan, two assignments: 1985 and 1989.
11. Short-term consultant, Organizer of workshop on the use of ventilated improved pit-latrines, design parameters, UNICEF and Rural Water Corporation, 1990.
12. Short-term consultant, Team leader, Evaluation of water supply in 50 villages in El-Ralhan Irrigation Scheme, 1990.
13. Sanitation expert for the Evaluation of "Services in the Residential Area Kenana Sugar Factory", 1992 (with Promang Consultants)
14. Team leader for the Evaluation of the "Industrial Waste for wad Medani Industrial Area", 1992 (at the request of the Government of the Central Region)
15. Development and Execution of a three-months course on "Water and Sanitation" for the UNICEF local field staff, 1984. At the request of UNICEF Sudan office.
16. National Coordinator for two WHO assisted workshops on "Stabilization Ponds in Sudan", 1987, 1991 at the request of WHO-EMRO.
17. Member of a (three men) team that organized a national workshop on "slow sand filters in Sudan "-financed by IRC-the Netherlands, 1985
18. Evaluation and upgrading to b Sc, level of environment health department- Jima Health Institute Ethiopia – Consultancy for Ethiopia Government.
19. Member of the team and sanitation expert for the master plan of Darfur university, 1992
20. Member of team (formed at the request of the Netherlands embassy in Khartoum) for the "Evaluation of the curricula of the b Sc. Degree on Environment Studies " offered by Ahlia University in Omdurman 1992.
21. Member of the UNDP international team for the evaluation of a 18.5 million us dollars project for evaluation of " Especial UN 1991 Drought Operation Project for the Sudan (SUNDOS 1992"
22. Technical advisor for a WHO financed National Workshop on " Personal hygiene and behavior " – Khartoum 1997
23. Member of the that carried special studies on the behalf of The National Rural Corporation and The Government of Netherlands for " the Management of the Drinking Water Resources and Related Environmental Activities " in Kassala Town and Nyala Town" 1992-1993(with AWASCO consultants).
24. Organizer and main resources person (on behalf of Unicef Office and the National Rural Water Corporation) of a national workshop on " Water Supply Sanitation and Health Education" – September, 1993 el-Obied , Kordofan

25. Head of a team organized by the German Technical Organization (THW) to evaluate a " Modified Slow sand Filtration Plant " (built by a German Contractor) being a donation For the German Government for the refugees in eastern Sudan "for 60 thousand persons) and to develop a manual for the operation and maintenance of the plant, training of the operators before handing the plant over to the United Nations High Commission of Refugees in Khartoum (UNHCR)(Personal Contract)- February,1995.
26. Environmental study on " Sugar Industry In Sudan " July-August ,1995 "- A short Term Consultancy For the WHO-EMRO.
27. Head of the team to rehabilitate the " Water Supply and drainage" in the faculty of medicine- University of Khartoum-1996>
28. Member of the steering committee of UESCO chair for water resources established in faculty of Engineering of Omdurman University, during 1995.
29. Member of a team formed by Kordofan State Government to evaluate the " Water Supply of El-Obied Town" in North Kordofan, 1996
30. Chairman of a team to work out the syllabi for the Faculty of public & Environmental Studies to be established in the university of El-Gadarif-July 1996.
31. Took part in drafting the syllabuses for the " Planned Faculty of Chemical Technology " in university of Juba,1996.
32. The appointed (by WHO) National Consultant for National Workshop on the "Environmental Health Impact Assessment of Development Projects"- December ,1995.
33. Shouldered the responsibility for " Upgrading Of School Of Hygiene : from an institute that was offering a three-years post secondary Diploma (for more than 50 years)(1933-1980) to the b Sc. Degree Level, as confirmed by the attachment letter of The Ministry of Higher Education in 1987.
34. One of the international experts who reviewed The WHO-EMRO Technical Production N-10 on " Waste Stabilization Ponds" , Published By WHO-EMRO,1987
35. One of the eight international experts who , on the Invitation of EMRO-WHO participated in the " International Expert Group Meeting in Waste Stabilization Ponds " Organized by WHO-EMRO-Lahore,Pakistan,1987.
36. One of the seven experts who reviewed the CEHA.S (Centre For Environmental Health Activities) document No. TLM-6 : "Guidelines on Technologies for Water Supply Systems in small communities' published by WHO-EMRO/CEHA,1993
37. One of the seven international Experts who reviewed CEHA'S (Centre of Environmental Health Activities) document no TLC-5:" Guidelines on Technologies for Water Supplies Systems in small communities " WHO-EMRO/CEHA,Amman,1993.
38. Team leader for the evaluation of " Groundwater Pollution in Khartoum"-1997.
39. One of the two designers for an activated sludge unit to treat waste water for a diary factory (KAPO) in Khartoum at the rate of 50 meters cube per day (operating now), 1996

40. At the request of The Khartoum Ministry of Agriculture and Animal resources undertook with a colleague, the contract for the assessment of present waste treatment facilities in Omdurman slaughter house and developed a design to rectify the situation (1997)- three Volume Report (in Arabic).
41. Commissioned by AMIPHARMA pharmaceutical laboratories to develop a pretreatment unit for water treatment to meet pharmaceutical requirements and to be there consultant in this respect for the year 1998.
42. Member of a team to evaluate UNICEF inputs in some rural areas of Khartoum state since, 1997.
43. Appointed member of the ‘ Managing Board of Khartoum Sewerage and Storm Drainage Company ‘ of The Khartoum state Ministry of Housing and Engineering as from April 1996 until 2008
44. Appointed consultant to the construction and Environmental Laboratories Center- Khartoum state ministry of Housing and Engineering Affairs – Khartoum as (from 1996- to 2007) .
45. Member of teams that conducted the following EIA studies on behalf of :
 - 1- Greater Nile petroleum operating company (GNPOC), EIA for the petroleum export pipeline (Heglig-Port Sudan)-1998-team leader.
 - 2-Greater Nile Petroleum Operating Company (GNPOC),EIA for field production facilities (FPFs) in Thoma south, El Nar, Unity,Eltor and the Central Production facility (CPF) in Heglig (1999).
 - 3- Greater Nile Petroleum Operating Company (GNPOC), EIA for Field Production facilities in Monga And Bamboo.
 - 4- Greater Nile Petroleum Operating Company (GNPOC),EIA for Balila Field Production Facilities-2000
 - 5- Greater Nile petroleum Operating Company (GNPOC), EIA for Neem field production facility,2004.
 - 6- Greater Nile Petroleum Operating Company (GNPOC),EIA for Bashyer two Oil Terminal-2004.
 - 7- Greater Nile Petroleum Operating Company (GNPOC),EIA for Differa Field Production facility,2004.
 - 8- Petrodar, EIA for field Production facilities in Aderal and BOULOCH,and Central production facility at El Gabalein,2004.
 - 9- White Nile Petroleum Operating Company (WNPOC),EIA for Oil exploration in block 5B,2006
 - 10- National Electricity Corporation,EIA for Garri Power Plant-2005.

11. National Electricity Corporation, EIA for Mohamoud Sharief Power Station-Khartoum North Power Station (Extension) – 2005.
12. Ministry of Mining, EIA for a factory to produce chrome in Eldamazin 2004.
13. Mamoun Elberier, EIA for a factory to produce detergents – Khartoum North industrial area, (2004).
14. Rida Gold Mining Company, EIA for gold mining in Abeedia, 2005.
15. Omdurman Company for soap and detergents, EIA for a factory to produce detergents, 2006.
16. EIA for water pipeline to convey water from Arbeedia, to Ariab Company Mining Site at Hassai Mining Site – 2013.
17. Dubai International Mining Company – EIA for their Mining Site in North Korofan – 2014.
46. Evaluation of the " Environmental Impact of the Factory (in Sinkat) for the Protective Coating" of the pipes of the Petroleum Exporting Pipeline, 1998.
47. Evaluation of the "Solid Waste Management for El-Gedarif Town" and organizing a workshop to the same effect, 1998.
48. The Chairman of the Scientific Committee of a workshop on Environmental pollution in Khartoum State that was organized by the Sudanese Engineering Society, 1998.

Publications:

a. Papers

1. B. M. El-Hassan, (1978)
(Sudan-Country Studies)
Vol. VI: Country Studies in Appropriate Sanitation Alternatives.
pp 95-106 World Bank – Washington D.C
2. B. M. El-Hassan, (1982)
(Environmental Impact of Industrial Wastes in Sudan).
Water Quality Bulletin
Vol. 7 pp31-33 – Canada
3. B. M. El-Hassan, (1978), Awad El-Karim, et al., (1984).
On Water Quality and Quantity and Their Impact on Health in Khartoum Province – Sudan)
Water Quality Bulletin Vol. 9 pp 225-230 – Canada

4. A/Magid I. M., M. El-Hassan, B. M., (1987).
(Reflection on Drinking Water Quantity Guidelines for the Sudan)
Journal Water International
Vol. 12 pp 330-335
5. A/Magid I. M., M. El-Hassan, B. M., (1987).
(Recycling of Agriculture/Industrial Waste – The case of waste water from sugar factories in Sudan)
Vol. 12 pp69-102
Middle East Waste and Sewage
6. Awad El-Karim, M., El-Hassan, B. M., Hussein K. K., (1995)
(Social and Public Health Implications of Water Supply in Arid Zones)
Soc. Sei. Med. Vol. 20 pp 393-298
7. A/Magid I. M., M. El-Hassan, B. M., AlRahman, H. A., El-Siddig, M. E., (1993)
(Evaluation of Slow Sand Filters in the Sudan).
July – August, 1993 pp 30-31
Arab Construction World Journal.
8. Gaily M. H., El Hassan B. M., Abashed, A. E., Zahrani, S. M., (2010)
(A direct process for the production of high Fructose Syrups from dates extracts)
International Journal of food engineering, Vol. 6 (2010), ISS, 3. Art. 12.
9. Gaily M. H., El Hassan B. M., Abassaeed A. E., Al-Sharhan, M., (2010)
(Isomerization and kinetics of Glucose into Fructose)
International Journal of Engineering and Technology, Vol. 10. No. 3.
10. El-Hassan, B. M., (1984)
(Khartoum Water Supply)
Sudan Engineering Society Journal
Vol. 27 pp 27-31
11. El-Hassan, B. M., Murtada, R. Z., (2003)
(Environmental Impact of Industrial wastes in El Baggair Industrial Area)
Sudan Engineering Society Journal
Vol. 49 pp 27-38.
12. B. M. El-Hassan, (1981)
(Household Units for Coagulation).
pp 221-223

(Shore Filtration)

pp 242-243

(Water Coagulation)

pp 243-245 in "Tradional Water Purification in Developing Countries" edit by GTZ

13. Bashir M. El-Hassan B. M., Rabah A. A., (2011)
(Assessment of stand-by Evaporators as an energy conservation measure: Case of Sudanese Sugar Industry)
Sugar Technology Journal.
14. E-Hassan, B. M., et at., (1995)
(The Effects of Retention Time and Length to Width Ration of the Removal Efficiency of BOD, SS, and TS in Septic Tanks).
Bulletin of the High Institute of Public Health
Vol. 254th Qct. 1995
University of Alexandria, Egypt.
15. El-Hassan, B. M., et al., (1995)
(The Effects of Soil Characteristics on the Disposal of Septic Tanks Final Effluent).
Vol. 254th Qct. 1995
University of Alexandria, Egypt
16. El-Hassan, B. M., (1998)
(Sugar Industry in Sudan).
El-Beeaa Environmental Journal
Higher Council for Environmental and Natural Resources – Khartoum.
Vol. 1, June 1998
17. El-Hassan, B. M., (1977)
(Impact of Industrial Waste on the Environment)
Industry and Development Journal N. 11, Published by Industrial Research and Consultancy Institute, Khartoum, Sudan
18. El-Hassan, B. M., A/Magid I. M., (1896)
(Water of the Nile)
(in the proceedings of international conference on water needs and planning in drought prone areas)
Sudan Engineering Society
19. El-Hassan, B. M., (1981)
(Appropriate Sanitation Techniques for the Third Class Housing in Sudan)
In a special issue on housing pp 140-145

Scientific French Servicing Unit, University of Khartoum.

20. Adam I. A., El-Hassan, B. M., (2009).
(Drinking water quality Characteristics of En-Nahud Town)
W.C University Journal of Science and Humanities, Vol. 2, Issue 3, pp 29-41.
21. Adam, I. A., El-Hassan, B. M., (2011).
(Potential sources of water pollution in En-Nahud town, West Kordofan)
Peace University Journal of Science and Arts, First Issue.
22. Hamad, O. A., El-Hassan, B. M., (1974).
(Prospects of the Asbestos Mining and Industrialization in the Sudan)
National Council for Research, Khartoum.
23. El-Hassan, B. M., Hamad, O. E., (1975).
(Production of Soda Ash from Natural Trona In Sudan) (Report).
National Council for Research, Khartoum.
24. El-Hassan, B. M., (1981).
(Appropriate Sanitation Techniques for the Third Class Housing in the Sudan).
In a special issue on housing pp 140-145
Scientific French Servicing Unit, University of Khartoum.
25. El-Hassan, B. M., (1982).
(Water Recycling)
Pp 94-97 – Water Quality Control pp 198-200
There are contributions in the book on “Water Resources in Sudan”
Published by the National Council for Research, Khartoum
Edited by Salih, A. M. A, and Khadam M. A. M.
26. El-Hassan, B. M., AlMagid, I. M., (1886).
(Water of the Nile)
(In the preceedings of International Conference on Water Needs, and Planning in
Drought Prone Areas).
Sudi Engineering Society
27. El-Hassan, B. M., et al., (1998).
(Sugar Industry in Sudan)
El-Beeaa Environmental Journal
Publisher Higher Council for Environmental and Natural Resources, Khartoum
V. 1, June 1998.

b. Reports:

For UNHCR/THW German Government:

1. El-Hassan. B. M., Alloba M. A., Yousif Y. A., (1995)
 - a. (Final Evaluation Report – Shagarab Water Treatment Plant)
 - b. (Operation Manual – Shagarab Water Treatment Plant).
 - c. UNHCR/THW – Sudan

For WHO-EMPRO:

2. El-Hassan B. M., (1987)
Assignment Report : Institute of Health Science – Doha, Qatar)
Evaluation and Strengthening
Project NO. Qat./HMD/001.
WHO – Eastern Mediterranean Region

For Ethiopian Government

3. B. M., El-Hassan, (1994)
Assignment Report: (Upgrading Curricula of Environment Health Sciences)
Jima Institute of Health Sciences – Ethiopia

For Unicef:

4. B. M., El-Hassan, Assas W. I., (1985)
Assignment Report: (Evaluation of Was El-Magboul Institute)
For Unicef Khartoum Office

For El-Rahad Corporation:

5. B. M., El-Hassan, et at., (1990)
(Evaluation of the Drinking Water Supply Services in the Village of El-Rahad
Agricultural Scheme).
Final Assignment Report (English/Arabic) for El-Rahad Corporation.

For WHO-EMPRO

6. B. M., El-Hassan, (1995).
Report on (Waste Generated by Sugar Industry In the Sudan) prepared as a Short
Term Consultancy for WHO-EMPRO
7. B. M., ElHassan, (1995).
Report on: (The Environmental Aspects of Guneid Sugar Factory) A Short Term
Consultancy for WHO (in Arabic with Summary in English).

For the Netherlands Embassy in Khartoum

8. A/Latif E. M., El-Hassan, B. M., Mohammed M. M., Abusin M. M., (1992)
(Evaluation of the Environmental Studies B.Sc. Programme in Omdurman Ahlia
University)

This report was prepared as a short term Consultancy for the Toal Netherlands Embassy in Khartoum. (Netherlands being a doner to the programme)

For Goethe Institute – Khartoum

9. Abu Salma O. Y., El-Hassan, B. M., (1991).
(Waste Management and Environmental Protection)
Paper presented in the National Seminar on Municipal and Industrial Waste Management in Developing Countries organized by Ministry of Housing and Public Utilities and the German Goethe Institute in Khartoum.

For Rural Corporation and Netherlands Government:

10. El-Hassan, B. M., Abu Salma O. Y., (1992)
Assessment of some Environmental and Public Health Hazards in Nyala Town – Darfur State, Sudan
11. El-Hassan, B. M., Abu Salma, O. Y., (1992)
Design of a Monitoring System for the Drinking Water Supply of KAssala Town – Eastern Region, Sudan.
Reports (10-11) are the outcome of a consultancy of the National Rural Water Corporation and the Government of the Netherlands under the Water Resources Management Project financed by the Netherlands Government.

For the Slaughter House Company of Khartoum State

12. El-Hassan, B. M., Khadamn, M. A. A., (1997)
A three volume report on the assessment of the present status of waste treatment development of design parameters and a complete design of a Waste Treatment Plant.

Report For Dugap:

Assessment and Upgrading of the Solid Waste Management of El-Gedarif Town

A Contract with Dugap Committee between El-Gedarif Town (Sudan) and Eindhoven (The Netherlands) – December, 1998

Assignment and Conducting a Three-day workshop in El-Gedarik Town on Solid Waste Management and presented the findings of the research on El-Gedarif Solid Waste, attended among others by experts from Eindhoven (The Netherlands) – December, 1999

A Contract with Higher Council for Environmental and Natural Resources and the UNDP.

Report For the National UNESCO Office – Khartoum, Sudan.

Member of a national team that conducted a study on ground water quality in the Sudan.

A contract with UNESCO Office – Sudan under the Auspices of MAP (Man and Biosphere project) with funds channeled from UNESCO – Paris, November, 1999

Report for Shell Company – Sudan.

The leader of the team that undertook the implementation of NERA-Phase I and II. (Network Environmental Risk Assessment Phase I and II – Sudan) for Shell Company, Sudan. On behalf of Shell International Company, being part of a project implemented internationally in a number of countries by Shell Company to assess the environmental pollution of air, soil, and water risk of Shell Company's petroleum products retail sites. The study included all Shell retail sites throughout the Sudan (according to contract terms of reference the report is confidential)

a. Books in Arabic:

1. El-Hassan, B. M., A/Magid I. M., (1996)
Industrial Waste Treatment
Khartoum University Press
2. El-Hassan, B. M., A/Magid I. M., (1996)
Water Supply for the Sudan
Khartoum University Press
3. El-Hassan, B. M., A/Magid I. M., Siddig M. E., (1993)
Manual for the Operation and Maintenance of Sand Filters for Rural Sudan
Published by IRC for Community Water Supply in Hague – The Netherlands.
4. El-Hassan, B. M., A/Magid, I. M., Siddig, M. E., (1993)
5. Manual for the Operation of Sand Filters in Developing Countries
The author: IRC (Arabic translation by El-Hassan, et al.)
Published by IRC.

Name	Field	University	Present Post
1. Dr. Mohammed A. A. Khadam	Water Supply	Uni. of Khartoum	Faculty of Eng. U. of K
2. Dr. Yousif Ali Yousif	Water Treatment	Uni. of Khartoum	Faculty of Eng. Sudan Uni.
3. Dr. Mohammed Zaidean	Sludge Management	Uni. of Khartoum	Beirut, Lebanon
4. Dr. M. A. A. Alloba	Sanitation	Uni. of Khartoum	V.C Nyala Uni.
5. Dr. Mona G. Zaeib	Sugar Waste Treatment	Uni. of Khartoum	Hamis Uni. – Syria
6. Dr. Abu Talib. M. Abu Talib	Ind. Water Treatment	Om. Isl. Uni.	Saudi Arabia
7. Dr. Mohammed E. Gaily	Fermentation of Dates	Uni. of Khartoum	Riyadh Uni.
8. Dr. Imad Eldin Abdo	Petroleum	Uni. of Khartoum	Saudi Arabia

9. Dr. Masood Gamil	Coastal Pollution	Sudan Uni	Faculty of Eng. Sudan Uni.
10. Dr. Osama El Hussein	Ind. Air Pollution	Uni. of Khartoum	Private Sector
11. Dr. El Tigani Osman	Water and Sanitation	Shendi Uni.	Saudi Arabia
12. Dr. Suhair Khalil	Air Pollution/ Brick M.	Juba Uni.	Bahari Uni.
13. Dr. Mohamed Tahir	Water Treatment	El Azhari Uni.	Saudi Arabia
14. Dr. Rihab Marghani	Water Coagulation	Uni. of Khartoum	Kordufan Uni.
15. Dr. Mahadi Basheir	Sugar Industry	Uni. of Khartoum	Private Sector
16. Dr. Babiker A. Babiker	Solid Waste Management	Uni. of Khartoum	State Minister – U of K
17. Dr. Hamza A. M. Adam	Water Hygiene	Uni. of Khartoum	Saudi Arabia
18. Dr. Mohd. A. Al Karim	Water Supply	Uni. of Khartoum	Saudi Arabia
19. Dr. Benjamin G. Apai	Water Hygiene	Uni. of Khartoum	South Sudan
20. Dr. Najim Eldin Elsser	School Sanitation	Uni. of Khartoum	Saudi Arabia
21. Dr. Omar Y. M. Ali	Water Supply	Shendi Uni.	Saudi Arabia
22. Dr. Taj Elsir M. Dingo	Produced Water-Petroleum	Sudan Ac. Sci.	Petrodar
23. Dr. Arif Bundugi	Water Sanitation	Uni. of Khartoum	South Sudan
24. Dr. Sit Elbanat A. Hashim	Water Hygiene Treatment	Uni. of Khartoum	Ministry of Health