Name: Mahgoub G. Zaroug

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Date & Place of Birth: 16th April 1944 Khartoum North, Sudan

Sex:MaleNationality:SudaneseReligion:Muslim

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English (working knowledge & good report writing skills)

Summary of Expertise: a) Range management and pastoral development, forage

production and conservation and natural resources

management.

b) Particular development competencies include environmental conservation, project design and evaluation, environmental impact assessment.

c) Training in the above mentioned fields

Regions of Experience: The Near East, the Horn of Africa, East & Southern Africa.

Experience:

- A) Member Executive Committee and Chairman of Work Plan and Budget Committee, Mahdi Azrag Charity Organization, Omdurman Sudan. This is an emerging national NGO working in the fields of health, education and emergency services. Work in the Organization is on voluntary basis January 2007 to December 2008. B) Adviser/Consultant Mandy National Charity Association (MANCHA), 1st. April 2004 to May 2005. I am volunteering to work as an adviser to this national NGO which is active in rehabilitation of IDPs, assisting returnee farmers in South Kordofan State, improvement of living conditions of the poor, organizing training and providing social services; and enhancing peace and co-existence in the State which has been adversely affected by armed conflict. My role include outlining a strategy for the post conflict era, facilitating contacts and building working relations with international organizations, bilateral aid agencies and international NGOs, identifying and preparing projects and programmes for sustainable use of resources and for assisting small holders production systems; and organization of workshops including natural resources conflict resolution. The Workshop on "Conflict Resolution and Development of Pastoralism" was organized in collaboration with IFAD South Kordofan Rural Development Programme, UNDP Peace Building Unit and Friedrich Ebert Foundation under the Guardianship of the Wali of South Kordofan State, in Rashad SKS, during the period 20-22 December, 2004.
- C) Chief International Consultant/ FAO Project GCP/SYR/009/ITA Range Rehabilitation and Establishment of a Wildlife Reserve in the Syrian Steppe Palmyra, Syria. January July 2002. My duties covered the following:

- Provide technical input to the various range management activities and assure continuity of the activities initiated concerning range monitoring and vegetation studies.
- Responsible for the management of the international staff and consultants. Ensure the implementation of the technical activities as scheduled. In collaboration with national staff, elaborate a detailed work plan and monitor delivery, ensure increased devolution of responsibility to national staff in relation to sustainable management of the project and follow up after it ends.
- Ensure adoption of a participatory approach and the direct involvement of the communities in rangeland rehabilitation and wildlife management activities. Ensure the transfer of the technologies developed and the lessons learned during the main phase of the project.

D) Irrigated Fodder Production Expert / Arab Organization for Agricultural Development & Ministry of Works and Agriculture – State of Bahrain. September 1996 - February 1997.

The purpose is to advise "A Programme on Alternative Fodder Crops" which has the objective of selection of adaptable and productive fodder crops with low water requirements to replace alfalfa and to achieve the highest dry matter production per unit of water used.

A detailed work plan has been submitted and its implementation initiated with the following main activities: Conduct a Farm Survey, Conduct Pilot Trials on Annual and Perennial Forage Species, Establishment of Adaptability Nursery, On-Farm Demonstrations, Training and Extension, and Prepare comprehensive final report about my mission, which was then submitted to AOAD and the Ministry.

E) Director Range and Pasture Administration (RPA)/ Ministry of Agriculture Natural Resources and Animal Wealth – Khartoum, Sudan. June 1993 – September 1994.

Under the supervision of the first Under-Secretary, I was responsible for the following duties:

- Re-organization of RPA to play its leading role in conservation and development of forage resources and to provide the necessary support and guidance to pastoralists in the country. Two new divisions, one for pastoral affairs and another for ranching were created.
- Identify new and enhance on-going RPA programmes at national and state levels.
- Promote cooperation and coordination between RPA, teaching and research institutions in the fields of degree and non-degree training.
- Organize workshop on Pastoralism and Forage Resources Development to assist in formulating government policies and strategies towards both resources and the groups that depend upon them.
- Prepare a draft proposal for the establishment of a rangeland and pastoralists council, which will be responsible for planning, coordination, and supervision of the range resource sustainable development and pastoralists affairs.
- Review collaborative programmes with Agricultural Research Corporation and other natural resources departments in the areas of common interest.

F) Range Management Expert / Chief Technical Advisor UNDP/FAO- Range Management Project, the Southern Region of Oman. August 1988 – December 1990.

As the project leader, I was responsible for its management and implementation of its activities which included the following:

- Training of national staff both locally through the organization of four short courses and abroad by implementing two study tours for technicians and one M.Sc. fellowship to the USA for a counterpart university graduate.
- Testing of pertinent range management and forestry methodologies.
- Extension-education programme.
- As CTA, I played a coordinating role between the project and other government units in order to identify and implement joint activities within the region in accordance with the responsibilities of the project. I was also responsible for the drafting of range and forestry legislations for the Sultanate. My responsibilities also covered the preparation of a detailed proposal for the establishment of a Range and Forestry Department in the southern region of Oman. This proposal comprised structure, staff requirement, budget, training and staff development and responsibilities.

G) Range Management Officer / FAO Regional Office for the Near East-Rome, Italy. May 1983 – July 1988.

During this period I prepared a regional programme on rangeland management and improved pasture and fodder production. This programme has four elements:

Integrated management of arid and semi-arid grazing resources.

Development of improved pasture and forage crops.

Forage resources training and information.

Use of biological nitrogen fixation for enhancing pasture and forage legume production. During this assignment, field visits were made to 19 countries in the Region to identify national or regional activities within the context of the Regional Programme Elements. Several projects (TCP, UNDP, UTFN and GCP) were formulated, national activities initiated or promoted and a training course and technical meetings organized. Technical assistance to national programmes has been provided in the fields of utilization of salt affected lands for forage production, evaluation of native forage species for pasture crops and demonstration of range management improved practices.

H) Range Management Expert / Ministry of Agriculture and Fisheries- Muscat, Oman. May 1981 – April 1983.

During this assignment my responsibilities included but not limited to the following: -

- Advising both Director General of Agriculture and Director of Animal Wealth Department on aspects of range and forage resources development.
- Initiated a pilot programme for testing methodology for monitoring, management and improving range in selected grazing areas.
- Submitted a detailed proposal for the establishment of a Range Management Department within the setup of the Directorate General of Agriculture.

- Surveyed areas affected by sand dune movement in eastern Oman and prepared a proposal for sand dune fixation and improvement of agricultural productivity in the affected areas in collaboration with UNEP expert.
- Advised MAF on the utilization of fodder crops and irrigated pasture for the establishment of small- scale sheep and goat production units.
- Conducted agronomic trails on irrigated pasture and fodder crops in collaboration with the agricultural Research department.
- Represented MAF and acted as a focal point for the Range and livestock Survey Project implemented by a private firm.

I) Head Irrigated Pasture Division / Range and Pasture Administration, Ministry of Agriculture in Sudan. February 1979 - April 1981.

My main responsibility was planning and supervising the implementation of a programme on research and demonstrations of the production of pasture and fodder crops under irrigation.

J) Research Assistant and Post-graduate Researcher / Department of Soils and Plant Nutrition, University of California, Davis. July 1975 – January 1979.

My duties covered laboratory, greenhouse and field research related activities and data collection.

K) Range Management Officer: Range and Pasture Division, Ministry of Animal Wealth, Sudan, April, 1969-September, 1974.

During this assignment, my duties covered range reseeding trials in conjunction with the application of soil moisture conservation techniques, agronomic trials of irrigated fodder and pasture species, trials for the introduction of forage legumes in crop rotation in rainfed mechanized farming areas particularly in Agadi State Farm, establishment of fire breaks to protect dry grass from uncontrolled burning, range survey to identify constraints and propose suitable interventions for range resources development and establishment of herbarium for Khartoum and Northern provinces.

L) Other Activities.

Missions with Arab Organization for Agricultural Development.

- Evaluation of Livestock Resources in the Islamic Republic of Mauritania, June and July 1979.
- Project Identification for Livestock Sector in the Islamic Republic of Mauritania, April- May 1980.
- Team Leader (four specialists team: Environmental Economist, Animal Production, Environmental Conservation and Forage Resources) to conduct a study on "Environmental Effects on Rangelands in Arab Countries". November December 1994. Khartoum, Sudan.
- Team Leader: The Conservation and Development of Baja Natural Resources-White Nile State, Sudan. May-June 1996.
- Team member techno-economic feasibility study for the development of dairy production project in Ghana. July-August 1999.

- Preparation of a project proposal entitled: Regional Network for Land Resources Management in the Maghreb Countries to be implemented by AOAD. September 1999.
- Preparation of the national reports on the UNCCD implementation in Jordan and Syria for AOAD, December 1999. I then participated in a regional workshop for West Asia countries organized by UNCCD secretariat in Beirut, Lebanon. February – March 2000.
- Team Leader (three specialists) for the preparation of a study on the role of NGOs and CBOs (community based organizations) in the conservation of biodiversity in the Arab Region. August 2001.
- Member of two specialists' team for the compilation of Sudan National Action Plan for Combating Desertification. September October 2001.
- Team Leader (13 specialists' team) Preparation of the National Livestock Development Strategy for the Sultanate of Oman, AOAD, February December 2010.

Missions for the Sudan Government:

- Visit to the National Research Station, Kenya Seed Company and UNDP/ FAO Forage Evaluation Project in Kitale, to investigate possible cooperation with RPA and to prepare a similar programme for central Sudan, December 1980.
- Visit to Earth Sciences Institute (ITC) Enschede- Netherlands, and preparation of a joint proposal on "Training and Research Programme on Rangeland Ecology, Rangeland Survey and Rangeland Management" to be conducted with the assistance of the government of the Netherlands, June 1980.
- Visit to the Republic of South Africa as a member of a delegation headed by H.E. Minister of Agriculture to discuss possibilities for collaboration between the two countries in the field of agriculture and natural resources. The visit covered activities of the private sector in feedlots, sugar industry and irrigation technology, September 1995.
- Member of the Consultative Council of the Minister of Agriculture and Forestry.
- Chairman of the Committee for the preparation of the natural resources sector strategy 2002-2027, Ministry of Agriculture and Forestry- Khartoum, Sudan 2001.
- Co-chairman of the committee for the preparation of the terms of reference, specifications and conditions of contract for two studies: i) Range Management Strategy and ii) Khor Abu Habil Water Development, for IFAD projects SKRDP and NKRDP.
- Chairman of the committee for follow-up of the implementation of the two above studies by a consultancy firm.
- Member of the Committee for Preparation of a National Plan for Scientific Research in the Field of Desertification. University of Khartoum, Sudan.
- Member of the committee for the organization of a conference on the future of water resources in the Sudan, responsible for preparation of the conference report and co-editor of the conference proceedings. Centre for Future Studies, Khartoum.

 Chairman of the Committee for the Preparation of the Report on the Development of Pastoral Sector in the Sudan, Ministry of Agriculture, Khartoum, March – April 2008.

Consultancies:

- Socio-economic Aspects of Arid Land Management in the Southern Region of Oman, FAO, July 1990.
- Forage Production and Conservation (Butana Dairy Farm), Khartoum Animal Production Company, October-February 1992
- Preparation of paper on the rangelands of the Horn of Africa, which was presented at the workshop on "Maintenance and Development of the Rangelands and its Role in Combating Desertification in the Arab Region". I also translated the workshop report into English. FAO/RNEA, September 1993.
- Preparation of a report covering the range component of "A Study on Sustainable Range Dependent Small Ruminant Production System in the Near East". FAO/RNEA, October 1993.
- Mission Leader- Shagarab Energy Supply Pilot Scheme, Eastern Region. UNHCR, Khartoum, Sudan, December 1993. Two draft project documents were prepared:
- i) Shagarab Energy Supply Pilot Scheme
- ii) A Programme for the Rehabilitation of Refugees Affected Lands in Shagarab Area.
- UNDP/ Ministry of Finance and Economic Planning, Khartoum, Sudan, 1994.
- i) Preparation of a background paper on "The Integration of Pastoral Nomads into Area Development Schemes in Sudan". The paper was prepared to provide participants with the status of pastoralists in the five project areas and to orientate the discussion in order to focus on major issues related to practical and efficient ways for the integration of pastoral nomads in ADS projects.
- ii) Presentation of the paper at a national workshop on the above subject held at El-Obeid, Sudan, January 1995.
- iii) Preparation of the workshop report. This assignment has been carried out in collaboration with a socio-economist and it has included field visits to review on-going activities and to hold discussions with officials, traditional leaders and pastor lists on the issue of integration of the latter group in the ADS project activities.
- OXFAM (UK&I) Representation- Khartoum, Sudan. Review of OXFAM National Livestock Programme in Sudan. The review was done by a three-specialist team (Socioeconomist, Animal Health and Production and Natural Resources). Visits were carried out to sites of the programme in southern and western Sudan. On-going activities were reviewed, discussions held with OXFAM partners, government officials, other NGOs and beneficiaries. Proposals for orientation of the programme and additional activities were submitted. February –March 1995.
- Coordinator and Chairman of the Steering Committee for the Conference on Pastoral Development in the Sudan- Ministry of Agriculture, Natural Resources and Animal Wealth, October 1995.
- Member of a national team of experts assigned the preparation of a report entitled "Towards a National Environmental Plan"- Sudanese Environmental Society and Fredrich Ebert Foundation, July-December 1995.

- Preparation of a synthesis report on "Management and Sustainable Development of Dry Lands in Arab Region"- FAO/RNEA, Cairo, Egypt, November-December 1995.
- Member of a national team assigned to prepare a National Action Plan for Combating Desertification in the Sudan- UNDP/Ministry of Finance and Economics, Khartoum Sudan, June-September 1997.
- Member of FAO Evaluation Mission Team Project GCP/SYR/003/ITA Range Rehabilitation and Establishment of a Wildlife Reserve in the Syrian Steppe, 6-24October 1997.
- Member of FAO Review/Formulation Mission Team Project UTFN/SAU/008/SAU Range and Animal Development Research Center Al Jouf, October-December 1997.
- International Consultant on Traditional Management of Grazing Reserves with UNDP Project YEM/97/100 Sub-programme: "Community Participation in Land Resources Management". The assignment covered interviews and joint work with resource persons in the field of traditional community pasture management. Criteria for pilot sites selection were proposed and suitable interventions recommended. The findings of the mission were presented in a seminar in Sana'a for relevant officials and personnel participating in the implementation of land resources planning and management programme, June-August 1998.
- International Consultant for Range Re-seeding and Range Monitoring Project GCP/SOM/043/EEC "Soil Erosion Control in Boroma District, Somaliland, 25 October-16 November 1998.
- Range Management and Livestock Consultant: 4th External Programme and Management Review of ICARDA, April-May 1999, the Technical Advisory Committee of the Consultative Group of International Agriculture Research. My specific duties were: i) To familiarize myself with ICARDA range management and livestock activities.
- ii) To analyze their quality, relevance and efficiency in the context of ICARDA's mission and the CGIAR's priorities and strategies.
- iii) To visit with two members of the EPMR panel and ICARDA staff Uzbekistan and Kazakhstan in Central Asia to witness some of ICARDA's collaborative work in those countries.
- Team Member (Range Management and Fodder Crop Specialist) Feasibility study of Elzein H.Abu Ghadi complex for production and exportation of meat and livestock. Comatex Nilotica Company- Khartoum, Sudan, August-September 1999. The assignment covered selection of two sites:
- + A ranch to establish range-based livestock production system and,
- + An irrigated holding for fodder and pastures crops production to finish cattle and sheep for slaughter or export as live animals.

Specifically the assignment comprised the following:

- + Assess the present situation of grazing and stock water resources
- + Propose a range management and improvement for the ranch
- + Propose a programme for irrigated fodder crops and pasture mix for the irrigated holding.
- + Prepare environmental impact of the project.
- Resource Person- Regional Training Seminar on Characterization and Analysis of Range Dependent Small-Ruminant Production Systems in the Near East Region FAO/RNEA -IRA- Medenine, Tunisia. 8-12 November 1999. My duties covered:

- + Reviewing the manual used for training.
- + Participating in the training by giving presentations on: physical resources and climate, feed resources and use, general characteristics and constraints of small ruminant production systems.
- + Participate with other resources persons and FAO/RNEA staff in finalizing the manual.
- Advisor/ Coordinator of the Evaluation Mission for UNICEF Household Food Security Project. I provided technical advice to the evaluation team during the course of the assignment, participated in the preparation of the evaluation report and its technical editing. Comatex Nilotica Company- Khartoum, Sudan. November 2000 January 2001.
- Member of the Mission for the Evaluation of the Special Programme for Food Security in East and Southern Africa (Eritrea, Tanzania and Zambia). FAO-Rome, Italy, July 2001.
- Range Specialist/Team Member: FAO/UNHCR Joint Formulation Mission. The FAO Team has been assigned two responsibilities: (i) provide support to the Joint Mission during its field visits to Gedarif and Kassala states and assist in the preparation of the Environment Sector Report and project proposals for the rehabilitation of refugees affected areas in eastern Sudan states and (ii) preparation of FAO Technical Paper on "Environmental Rehabilitation of Refugees Affected Areas in Eastern Sudan States". This paper comprised seven project summaries of short and long-term nature.
- Team member, Evaluation of FAO Southern Africa Programme 25 May-18 July 2003. The evaluation covered emergency and development assistance in Southern Africa countries with emphasis on priorities and lessons for the future. The evaluation team visited four case study countries namely Angola, Malawi, Mozambique and Zambia for discussions with government, UN agencies, donors and NGOs and visiting representative activity sites.
- Consultant: Pilot Activities Related to the Use Grasses as Source of Human Food, 22 July to 31 December 2003, AGPC, FAO, Rome. The purpose of this consultancy is to document, in collaboration with national NGOs native plant species used in the Sudan as non-traditional food, their geographical distribution, present status of conservation, their multiple uses, harvesting, management methods and their marketability.
- Consultant: Preparation of a paper on Strategies and Support Policies Towards Integrating Rangeland, Pasture and Livestock Systems for Sustainable Agriculture for Countries in the Near East Region, September, 2003, FAO/RNE, Cairo, Egypt.
- Consultant: Preparation of draft project document entitled: Improvement and Management of Rangelands. Met with FAO Representative in Yemen and relevant officials in national institutions; and visited proposed sites to select four in three Governorates. Discussed draft document with FAOR and officials of the Ministry of Agriculture and Irrigation. December, 2003, FAO/RNE Cairo, Egypt.
- Consultant: Preparation of a draft project document entitled: Participatory Management of Steppe Resources. Met with FAO Representative in Syria, officials of the Ministry of Agriculture and Agrarian Reform, Chairman of the Peasant Union and other relevant officials. Visited the project area, held discussions with officials and target cooperatives leaders and presented a proposed project frame to a workshop in which all stakeholders were invited. A draft project proposal was then prepared taking into account comments and views expressed during discussions with officials and cooperatives as well as those made during the workshop. March 2004 FAO/RNE, Cairo Egypt.

- Consultant: Conduct a study on Integrated Production for Sustainable Natural Resources Utilization in the Arid "Qoz" of North Kordofan State, Sudan. December 2004, FAO/RNE Cairo, Egypt.
- International Consultant Range Management/Ecology Project TCP/OMA/3001 (A): Range Resource Information Monitoring and Evaluation in the Dhofar Region. The aim of the assignment was to coordinate and supervise project activities and providing support in the areas of vegetation monitoring and mapping and training of national staff. December 14, 2004 to January 16, 2005, FAO/RNE, Cairo, Egypt.
- International Range Management Consultant: The purpose of this assignment was to review Phase IV of Project: UTFN/SAU/008/SAU-AlJouf Range and Animal Development Research Centre, in the Kingdom of Saudi Arabia, to identify problems and constraints encountered and prepare a detailed project document to contribute to the Kingdom's comprehensive environmental protection by strengthening national capacities of applied research and technology transfer. A detailed project document entitled "Promotion of Integrated Range and Livestock Research" has been drafted and submitted. February 28 to April 4 2005, FAO/RNE, Cairo, Egypt.
- Consultant, preparation of Case Study Paper on Irrigated Fodder Crops Systems in the Sudan. July-September 2005, FAO/RNE, Cairo, Egypt.
- Natural Resources Management Specialist, preparation of guidelines for natural resources survey and natural resources management strategy for Western Sudan Resources Management Project, Kordofan, April-May, 2006, IFAD, Rome.
- Consultant, Editorial Work and Preparation of Proposals for Two Expert Consultations on Range Monitoring and Irrigated Fodder Production. 12 November-12 December 2006, FAO/RNE, Cairo, Egypt.
- Consultant/Resource Person Range Monitoring Expert Consultation, and preparation of the Consultation Report. November 2007, FAO/RNE, Cairo, Egypt.
- Natural Resources Consultant Preparation of Natural Resources Management Strategy for Kordofan States, GOS/IFAD Western Sudan Resource Management Programme. November 2008 March 2009.
- Consultant/Resource Person Expert Consultation Irrigated Fodder Crops in the Near East Region Forage Production, Conservation and Utilization for Sustainable Animal Production, presented a paper on Fodder Crops Production Systems in the Sudan and prepared the Consultation Report 12 23 June 2009, FAO/RNE, Rabat, Morocco.
- Consultant Livestock and Environment, FAO-SNO. December 2010 March 2011. Responsibilities:
 - o Undertake rapid assessment on livestock activities impacts on the environment in peri-urban areas of Egypt, Lebanon and Syria.
 - Assess and identify gaps and current policies related to livestock and environment as well as national policies, strategies and programmes.
 - o Present mission report at sub-regional workshop in Amman, Jordan.
- International Consultant Policy, FAO-SNO. 12 November 2011 20 December 2011. Responsibilities:
 - o Revise Syrian NAP and align to the 10-years Strategy of the UNCCD.
 - o Complete project information sheet along with the concept note and project document for GEF funding.

- Revise and update a project document on Participatory Recovery and Management of Steppe.
- Range Management Consultant to contribute with a Water Resources Consultant to the formulation of Trust Fund Project on Improving Water Use Efficiency for Plant and Animal Production in Water Scarce Areas of UAE, FAO SNG and UAE Ministry of Environment and Water, 14 January to 3 February, 2012.
- Natural Rangelands and Forage Crops Consultant with The International Treaty "Development of Strategy for Building the Resilience of Pastoral Communities to Climate Change in Two Ecosystems of Sudan Project" 15 September to 15 December, 2013. Tasks and responsibilities included: Formulation of Pastoralists Strategic Action Plan for the Project areas, proposing project/program ideas which can be forwarded to potential donors for possible funding. Among these are ideas on the following:
 - Integrated Management and Sustainable Use of Rangelands
 - Community forest development and sustainable use for food security
 - Conservation and utilization of range plant genetic resources for rangelands rehabilitation and enhancing food security
 - Restoration and management of multi-purpose trees and shrubs for poverty reduction and conservation of biodiversity
 - Enhancing Agro-forestry Systems in Traditional Farming Areas Using Multi-purpose Trees and Shrubs.

Teaching/Training Activities:

- □ Lecturer: Range Management and Fodder Production in the Sudan. Animal production training course organized by FAO Dairy Development Project- Kuku, Khartoum North- Sudan, April 1979.
- □ Lecturer: Range Management and Fodder Production Course (both theoretical and practical). Animal Production and Veterinary Institute- Kuku, Khartoum North, Sudan, 1979-1980.
- □ Lecturer: Fodder crops and feeding stuffs course/ Faculty of Veterinary Science-University of Khartoum, Sudan, 1979-1980.
- □ Lecturer: Pulse crops/ Faculty of Agriculture-University of Khartoum, Sudan, 1980.
- □ Lecturer: Management of grasslands of southern Oman/ FAO tropical pasture training course- ILCA Addis Ababa, Ethiopia, 1983.
- □ Lecturer: Range Management in Arid and Semi-arid Parts of the Near East, Range management training course organized by UNSO/DES/DJI/001 in collaboration with FAO/RNEA, Djibouti, 1987.
- □ Lecturer and Acting Coordinator: FAO training course on pasture- Egerton University, Kenya, 1988.
- □ Lecturer: Range conservation and development, UNICEF Community Development Project- Salalah, Oman, 1989.
- □ Lecturer: Range Management / Omdurman Ahlia University, Sudan, 1993-95.

- □ Lecturer: Training workshop to strengthen sustainability issues and environmental considerations in agriculture policy analysis and project planning, FAO/FES/Faculty of Agriculture, University of Khartoum, March 1996
- □ Chairman of examiners board for M.Sc. Students/ Faculty if Animal Production and Faculty of Agriculture, University of Khartoum, 1994.
- □ Co-supervisor M.Sc. Student: research project on response of dairy cattle to feeding on forage sorghum, Faculty of Animal Production, University of Khartoum, 1993.
- □ Co-supervisor M.Sc. Student: research project on range improvement by seeding and application of soil moisture conservation techniques, Faculty of Agriculture, University of Khartoum, 1994.
- □ Supervisor Ph.D. student: research on the use of remote sensed data and GIS in monitoring the impact of land degradation on grazing resources, Faculty of Environment and Natural Resources, University of Juba, 1999-2000.
- □ Lecturer: Natural Resources Management and Sustainable Development. M.Sc. Students Department of Extension and Rural Economics, Faculty of Agriculture University of Khartoum, 1999-2001.
- □ Co-supervisor Ph.D. student: research on the Ecological Effects of Fire on North Kordofan Rangelands, Faculty of Agriculture, University of Khartoum, 2005-2007.
- \Box Supervisor Ph.D. student: research Towards Strategies to Enhance Pastoralists Adaptation to Climate Change, Institute of Environmental Studies, University of Khartoum, 2012 2014.

L) Education:

- ❖ Ph.D. Ecology / University of California, Davis 1979.
- ❖ M.Sc. Range Management / University of California, Davis 1976
- ❖ B.Sc. Agriculture (Crop Production)/ Faculty of Agriculture, University of Khartoum 1969.

Other Training:

- ❖ FAO/SIDA- Training Course on Tropical Pasture- Morogoro, Tanzania. January-February 1981.
- ❖ FAO/SIDA- Training Course on Tropical Range Management Morogoro, Arusha, Tanzania. February 1981.
- Training course on Technical Cooperation Project Formulation, FAO Rome.
- ❖ Workshop on Project Monitoring and Evaluation, FAO Rome.

M) Technical Meetings Attended:

Over 50 in Africa, Europe, Latin America and the Near East.

N) Publications: (Total number of reports and publications 61)

- Evaluation of Forage Production in Sohar and Salalah Dairy (Oman Sun Farms), December 1981.
- The status of rangelands of the Southern Region of the Sultanate of Oman (Dhofar) and prospects for their conservation and sustained development. FAO Rome, 1983.
- ♣ Importance of fodder trees and shrubs in the productivity of rangelands and agricultural systems in the Near East. Arica, Chile, 1985.

- * Rangelands of Sub-Saharan Africa: Their present use and prospects for their improvement. Khartoum, Sudan, 1985.
- ♣ Socio-economic aspects of the traditional arid land management in the Southern Region of Oman, FAO Rome, 1990.
- ♣ Forage production at Butana Dairy Farm. Present situation and prospects for improvement, Khartoum, Sudan, 1991.
- ♣ Rangeland Conservation and Development in the Horn of Africa and its Role in Combating Desertification, FAO/RNEA, 1993 (Arabic).
- ♣ Sustainable Range Dependent Small Ruminant Production Systems in the Near East-Rangelands- FAO/RNEA, January 1994.
- Lo-author: The Integration of Pastoral Nomads into Area Development Schemes in the Sudan. Paper presented to the workshop on the subject, El-Obeid, Sudan, 1995 (Arabic).
- 4 Co-author: 'Towards a National Environmental Plan for the Sudan'. Sudanese Environmental Conservation Society and Fredrich Ebert Foundation, December 1995.
- 4 The Pastoral Sector: Present Status and Possibilities for Development. Paper presented to the Agricultural Conference, Khartoum, Sudan 1996.
- ♣ Environmental and Resource Management in the Sudan. A lecture presented to FAO training workshop to strengthen sustainability issues and environmental considerations in agriculture policy analysis and project planning, Khartoum, Sudan, 1996.
- ♣ Management of Rangeland Resources within the Watershed Concept. Paper presented at FAO Regional Office for the Near East Expert Consultation on Integrated Management of Land and Water Conservation within an Agro-sylvo-pastoral System, Safita, Syria, 1997.
- ♣ Forage and Pasture Seed Production in the Sudan. An Overview. Paper presented at the forage and pasture seed seminar organized by ICARDA and ILRI Addis Ababa, Ethiopia, 2000.
- ♣ Participatory Grazing Management Success Story: Camel Grazing in the Talila Reserve in the Syrian Steppe. FAO, Rome, 2002.
- Livestock Systems for Sustainable Agriculture for Countries in the Near East Region, 2004.
- ♣ Integrated Production for Sustainable Natural Resources Utilization in the Arid "Qoz" of North Kordofan State. FAO/RNE, Cairo, Egypt, 2004.
- 4 Case Study on the Fodder Crop Production Systems in the Sudan. FAO/RNE, Cairo, Egypt, 2005.
- 4 Co-author Water and Environment. A paper presented at the Conference on the Future of Water Resources in the Sudan. Centre for Future Studies, Khartoum, Sudan, 2006
- ♣ Co-editor of the proceedings of the Conference on the Future of Water Resources in the Sudan. Centre for Future Studies, Khartoum, Sudan, 2007.
- ♣ Development of a Natural Resources Management Strategy for Kordofan (North and South Kordofan States), IFAD, Rome, May 2006.
- ♣ Senior editor of the proceedings of the Expert Consultation on Range Monitoring Including under Forest Systems in the Near East, FAO Regional Office, Cairo, Egypt, 2008.

O) References:

 Professor Musa Mohamed Musa, Former State Minister- Ministry of Agriculture and Forestry.

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• Mr. Mohamed Mirreh, former Regional Range Management Officer, FAO/RNE, Cairo, Egypt.

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I certify that all the information stated in this CV is true to the best of my knowledge.

Date: 15/12/2011 Signature:

Mahgoub G. Zaroug