

CURRICULUM VITAE

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Education:

- 1993 Ph.D. Soil Genesis / Land Use and Management, New Mexico State University, Las Cruces, NM, USA.
- 1987 M.Sc. Soil Genesis and Classification, Faculty of Agriculture, University of Jordan. Amman, Jordan.
- 1984 B.Sc. Soil and Irrigation, Faculty of Agriculture, University of Jordan. Amman, Jordan.

Professional Experience:

- 2/2013-present Professor, Department of Natural Resources and the Environment, Faculty of Agriculture, Jordan University of Science and Technology, Irbid- Jordan.
- 11/2009-2/2012 Chief Technical Advisor, United nations Joint Program, MDG-F (Millennium Development Goals Achievement Fund) Climate Change project, FAO-Jordan
- 9/2009-1/2010 Team leader-Technical Advisory Team, Higher Council for science & Technology, Amman-Jordan.
- 5/2008-9/2009 Adviser-Water Environment and Agriculture sector, Higher Council for science & Technology, Amman-Jordan.

1/2008-present	Professor, Department of Natural Resources and the Environment, Faculty of Agriculture, Jordan University of Science and Technology, Irbid- Jordan.
9/2004- 9/2006	Vice Dean of Research, Jordan University of Science and Technology, Irbid- Jordan.
3/2003-8/2003	Senior Researcher, Dept. of Agronomy & Horticulture, New Mexico State University, Las Cruces, NM. USA
9/2002-6/2003	Visiting Fulbright Scholar, Dept. of Geosciences at Univ. of Nevada, Las Vegas, NV. USA.
5/2001-8/2005	Land Use Team leader, Conservation and sustainable use of Dry land Agro-biodiversity in Jordan project. UNDP Funded project.
2000- 2002	Associate Professor, Faculty of Agriculture, Jordan University of Science and Technology, Irbid- Jordan.
9/1996-9/2000	Chairman, Department of Natural Resources and the Environment, Jordan University of Science and Technology, Irbid-Jordan.
8/1998-9/1998	Acting Dean, Faculty of Agriculture, Jordan University of Science and Technology, Irbid- Jordan.
9/1994-9/1996	Chairman, Department of Plant Production, Jordan University of Science and Technology, Irbid-Jordan.
10/1993	Assistant Professor, Faculty of Agriculture, Jordan University of Science and Technology, Irbid- Jordan.
3/1993-9/1993	Post doc., Department of Agronomy and Horticulture, New Mexico State University, Las Cruces, NM, USA. Study of McGregor Range soils, Ft. Bliss, El Paso, Texas.
1990-1993	Teaching Assistant, Department of Agronomy and Horticulture, New Mexico State University, Las Cruces, New Mexico, USA.
1990-1993	Investigator, Soil-Geomorphic-Paleoclimatic Studies, US Dept. of Defense, Fort Bliss, Texas, USA.
1987 –1989	Land Use Planner / Soil Conservationist, Zarqa River Basin Project, (ZRBP) Ministry of Agriculture. Amman, Jordan.
1984-1987	Research Assistant, Department of Soils and Irrigation, University of Jordan. Amman, Jordan.

Expertise:

Chief Technical Advisor- United Nations Joint program- Adaptation to Climate Change to sustain Jordan's MDG Achievements – FAO-Jordan.

Major Responsibilities

- Implementation of project activities and facilitate communications between parties, FAOR, LTU and JPC on project updates;
- Keep financial and monitoring records for required project reporting; prepare Quarterly and Annual reports and meeting minutes;
- Participate in recruiting project staff and consultants and supervise their performance with updates to LTU; Drawing of Letter of Agreements with institutions involved in project activities and monitor progress with clearance of LTU;
- Follow up with Ministries and legislative bodies regarding the consideration of agricultural, forestry and economic policies proposed by the program for adoption and implementation; and ensure linkages of the project outputs with global initiatives in climate change and related subjects including those spearheaded by FAO.
- Develop public awareness campaigns for introduction and promotion of adaptation to climate change concepts to concerned stakeholders including the local community.

Advisor- Agriculture, water and environment sector- Higher Council for science & Technology(HCST).

Major Responsibilities

- guide research and development activities in the different fields of the agricultural water and environmental sectors to achieve agricultural development which will contribute to sustainable development including the protection of bio-diversity and ensuring an environmental balance that would secure sustainable use of resources
- Support science and technology development and application, addressing the different needs and constraints of the agricultural water and environmental sectors.
- Prioritize research topics for the agricultural water and environmental sectors and secure funding.

- Networking with related institutes and organizations (locally, regionally and internationally) to augment research programs and exchange information and knowledge.
- Implementing policies that encourage greater agricultural productivity and sound natural resource management.
- Enhance public and private sector partnerships and fostering capacity for innovation.
- Follow up progress of HCST funded projects using key performance indicators.

Previous projects:

- ***Project: Categorization of (Climate Change, Desertification) capacity constraints according to NCSA (The National Capacity Self Assessment for Global Environmental management)priorities in synergies between the Rio conventions.***

Position: Project design expert.

Contact: Mr. Batir Wardam (UNDP-Jordan)

Main duties:

- In-depth analysis and development of action plan to provide analysis of the priority capacity constraints facing Jordan to implement the three Rio Conventions on Biodiversity, Climate Change and Desertification
 - provides a roadmap for national capacity development that would raise the national capacity for the required level of implementing the conventions
 - provides a suggested practical action plan national capacity building in response to the identified capacity constraints that is based on synergies between similar actions and common constraints.
 - Develop projects and programs according to the priorities to be included with the NCSA action plan.
- ***Project : OASIS : A global agricultural research-for-development partnership against desertification- ICARDA***
Position: Desertification expert

Contact: Dr. Nasri Hadad

Main duties:

- Identify Land Degradation common types of degradation in Jordan; Severity of each type and its scale.
- Identify agro ecosystem affected by the different land degradation types and the Relative importance of the selected type
- assess the cost of land degradation: economic and environmental
- collect available data for economic and environmental characterization of the technologies to combat land degradation and Identify available technologies to combat the selected type of land degradation

- ***Project : Conservation and Sustainable Use of Dryland Agro-Biodiversity, (UNDP_GEF project)***

Position: land use team leader (2001-2005)

Contact: Dr. A. Fardous (NCARTT director)

Main duties:

- Identify areas and communities with which to implement modified and alternative land uses.
 - Arrange field visits for farmers and local community to the sites to choose pilot study areas to demonstrate different land use techniques.
 - Carry out field demonstrations and field days) for the alternative land uses that will sustain agro-biodiversity
 - Hold seminars and group discussions about alternative land use for the local community.
 - Work with local communities to identify and agree sites designations within target areas for modifying and implementing alternative livelihoods including; water harvesting and soil conservation structures, habitat strips, corridors and uncultivated patches; field gene-banks; pasture nurseries; community based grazing management and other alternative livelihoods.
- ***Project: Review and analytical and comparative study among the various sectors and national strategies relevant to Desertification Strategy and Action Plan prepared by the Ministry of Environment. (Global mechanism funded)***
- Position: Environmental Policy planner
- Contact : Dr. Kamal Khdaier, Mopic

Main duties

- Reviewing the Desertification strategy, and associated action plans which enhance national efforts to combat desertification.
- Analyze current legislations, institutional arrangement, and any other measures relevant to the implementation of national anti-desertification plan.
- Suggest mechanisms for integrating relevant activities within a national action plan to combat desertification.
- Identify measures (activities, enabling environmental) which should be given priority during the implementation of national anti-desertification action plan.
- Suggest a coordination mechanism among stakeholders involved in the implementation of the desertification strategy and associated action plan.

Related Experience:

- Expert member of the Intergovernmental Technical Panel on Soils (ITPS), FAO, Rome
- Member of the Jordan National Committee for Desertification (NCCD).
- Member of the Climate Change Research Group.
- Member of UNDAF Environment group and various national committees in the country for evaluating land and environmental issues.
- Project design specialist for National Capacity for self Assessment for global environmental management (NCSA)-Jordan (2006).
- Team leader for the Desertification strategy and National Action plan review. Global Mechanism study (2005-2006).
- Consultant for Alqawafel industrial company, Faculty for Factory program (July-Sept. 2007). (JUMP program, European Union funded program).
- Senior Researcher for the Soil Survey project of northern Badia. Higher council for Science and Technology (Jordan), Badia Development and Research Center (1998-2006).
- Land use expert for the "Assessment of Soil Organic Carbon Stocks and Climate Change at National Scale" carbon sequestration project. June 2002-July 2005. GEF funded Project.
- Convener for the 18th World Congress of Soil Science Arid Soils: Genesis, Geomorphology, and Geoarchaeology Symposium, in Philadelphia, USA, July 9-15, 2006.
- Scientific Advisor and Editors in Chief member for Global Journal of Environmental Research, IDOSI, (2006-2007).
- Development of study plans and Curriculum for Natural resources management program in collaboration with Michigan State University (9/2007-present)

- Acting Director, Center of Agricultural Research and production, Jordan University of Science and Technology, Irbid- Jordan. (Sept. and Dec.1995)
- Chairman, Student affairs committee. College of Agriculture.
- Faculty Council member, 1994-2000.
- Chairman, Scientific Research Committee. College of Agriculture.
- Chairman, Scientific Research Committee. Department of Natural Resources and the Environment. (1996-2008)
- Chairman, Equipment and Supplies Committee. Department of Natural Resources and the Environment.
- Students Advising Committee, College of Agriculture.
- Graduate Studies Committee member, College of Agriculture.
- Curriculum Committee chairman, Department of Natural Resources and the Environment.
- Coach, Soil Judging Team, New Mexico State University (1993).
- Equipping soil science labs. In the Department of Natural Resources and the Environment.
- Member, Board of Trustees, Irbid University (1999-2009)
- Member, Board of Trustees, Ajloun National University (2010- 11/2013).
- Member, Board of Trustees, Middle East University (12/2013- present).
- Member, Accreditation Committee for Jarash Private University.
- Major advisor for twelve graduate students in Natural Resources and the Environment (2001-2011).
- Member on forty examining -committees for graduate students for their award of master degree in Natural Resources and soil science.
- External examiner for PhD students, Jordan University, Amman, Jordan.

Reviewing and evaluation experience:

- Peer reviewer for Journals:
Soil Science Society of America,
Geoderma,
Journal of arid environments,
Catena
Pedosphere
Mountain Research Development,
Sustainability: Science, Practice, & Policy Journal,
Archives of agronomy and soil science,
Jordan Journal for agricultural sciences,
Muata'h Journal,
Yarmouk applied studies Journal,
Jarash- Research and Studies.
- Peer reviewer for the following granting agencies:
International Arid Lands Consortium(IALC).
Higher Council for Science & Technology (HCST).
European research program (SRTD).

- Peer reviewer for the papers submitted for the Proceedings of 10th International Soil Conservation Conference, West Lafayette, USA (1999).
- Referee for the second conference for Science and Environment, Irbid Pilot Studies center 4/2006

Professional and Honorary Societies:

- Jordanian Agricultural Engineers Association.
- Soil Science Society of America.
- European Geosciences Union.
- The Jordanian Society for Desertification Control & Badia Development.
- Sam Steele Society (USA).

Selected Publications:

Khresat, S.A. 1993. Geomorphic investigation of a possible paleolake on McGregor Range. m: Monger H.C (ed.) *Soil-geomorphic and paleoclimatic characteristics of the Fort Bliss maneuver areas, Southern New Mexico and Western Texas*. Historic and Natural Resources Report no. 4. Environmental management office, Directorate of installation support. Fort Bliss, Texas.

Khresat, S. A. 1996. Effect of cultivation practices on soil properties. *Agricultural Engineer Journal* 59: 25-29.

Rawajfih, Z., M. J. Mohammad and S.A. **Khresat**. 1997. Status of potassium in soils and crops in Jordan, *Proceedings of the food security in the WANA region, (p. 94-100)*. International Potash Institute, CH-4001 Basel! Switzerland

Khresat, S.A. Z. Rawajfih, and M. Mohammad. 1998. Morphological, physical and chemical properties of selected soils in the arid and semiarid region in northwestern Jordan. *Journal of arid Environments* 40: 15-25.

Khresat, S.A. Z. Rawajfih, and M. Mohammad. 1998. Land degradation in northwestern Jordan: causes and processes. *Journal of arid Environments* 39:623-629.

Khresat, S.A. and A. Taimah. 1998. Properties and Characterization of Vertisols Developed on Limestone in a semiarid environment. *Journal of arid Environments*. 40-3: 235-244.

Khresat, S.A. 1998. The Use of carbon isotopes in determining soil age. *Proceedings of Fourth Arab Conference on the Peaceful Uses of Atomic energy*. Vol. 4:499-509.

Khresat, S.A .1999. Nature and Properties of Mollisols and in a semiarid region in Northern Jordan. *Communications in soils science and plant analysis*. 30, (17 & 18):2429-2436.

Khresat, S.A. and Z. Rawajfih. 1999. Morphological chemical, and physical Characteristics of Shrink-Swell soils in a Semiarid Mediterranean Region" . *Communications in soils science and plant analysis*. 30, (9 &10): 1291-1298.

Khresat, S.A. 2000 Stable carbon isotopes and soil geomorphic processes as markers of climatic changes. *Proceedings of Fifth Arab Conference on the Peaceful Uses of Atomic energy*. Beirut , Lebanon, 13-17/11/2000

Rawajfih Z., S. A. **Khresat** and J. Ryan. 2000. Phosphorous fractions in calcareous vertisols in northern Jordan with implications for cropping. American society of agronomy meetings abstract.

Buck B. J., Van Hoesen, J., **Khresat**, S., Rawajfih, Z., and Monger, H. Curtis, 2001, Eolian Processes and Their Effects on Soil Genesis in New Mexico, West Texas, and Jordan, *American Association of Geographers Program with Abstracts*.

Khresat, S. A. 2001. Calcic Horizon distribution and soil classification in selected soils of Northwestern Jordan. *Journal of Arid Environments*. 47: 145-152.

Buck Brenda J., Van Hoesen, J., **Khresat**, S., and Rawajfih, Z., 2002, Morphology, SEM, and Stable Isotopic Analyses of Pedogenic Gypsum, USA and Jordan, *Transactions of the 17th World Congress of Soil Science, Bangkok, Thailand*,20:451, p. 1-10.

Rawajfih, Z., **Khresat**, S., Buck, Brenda J., and Monger, H. C., 2002 Management of Arid Soils of the Badia Region of Northeastern Jordan for Sustainable Agriculture, *Transactions of the 17th World Congress of Soil Science, Bangkok, Thailand* , 20:1026.p. 1-7

Buck, Brenda J., Van Hoesen, J.G., **Khresat**, S., Rawajfih, Z., Merkler, D., Schiefelbein, I., Howley, R. and Lawton, T., 2002. Genesis and Morphology of Pedogenic Gypsum and other Sulfate minerals, USA and Jordan. Annual Meetings Abstracts [CD-ROM]. ASA, CSSA, and SSSSA, Madison, WI.

Buck, B. J., Lawton, T. F., Merkler, D., Howley, R. A., **Khresat**, S., Rawajfih, Z., Waidmann, B., and Hanson, A., 2003, Snowballs in the Devil's Anus and other adventures in the world of pedogenic sulfates, *GSA Program with Abstracts*, v 34, p. 257.

Buck, B. J., Merkler, D., **Khresat**, S., Rawajfih, Z., Lawton, T., 2004, Genesis of Salt Minerals in Soils: Implications for Geomorphology, Environmental Applications, Tectonics, Petroleum Exploration, and Paleoclimate, IN Selim Kapur, Erhan Akca, Luca Montanarella, Arda Ozturk, A. Mermut Eds., 12th

International Meeting on Soil Micromorphology, Adana Turkey; European Communities, v. EUR 21275 EN/2, p. 89-91.

Khresat, S. A., Z. Rawjfeh; B. Buck; and H.C. Monger, 2004. Geomorphic Features and Soil Formation of Arid lands in Northeastern Jordan. *Archives of Agronomy and Soil Science* .50, (6): 607-615.

Khresat, S. A. 2005. Distribution and Genesis of Inceptisols of major agricultural rainfed areas in Jordan. *Archives of Agronomy and Soil Science*. 51(1):15 – 23.

Mahjoory R., S. **Khresat** and A. Taimeh. 2005. Evaluations of Representative Soils in Relation to C-Dynamics on a Climo-Toposequence in Arid/Semiarid Ecoregions of Jordan. *The ASA-CSSA-SSSA International Annual Meetings*. Salt Lake City, UTAH, USA.

Rawjfeh. Z., S. A. **Khresat** and B. Buck. 2005. Arid soils of the Badia region of northeastern Jordan: Potential use for sustainable agriculture. *Archives of Agronomy and Soil Science*. . 51(1): 25 – 32.

Khresat, S. A. and E.A. Qudah. 2006. Formation and properties of aridic soils of Azraq Basin in northeastern Jordan. *Journal of Arid Environments*. 64:116–136.

Khresat, Sa'eb. 2006. Major Causes of Land Degradation and Desertification in Jordan. 18th World Congress of Soil Science July 9-15, 2006, Philadelphia, Pennsylvania, USA

Khresat S. A., J. Al-Bakri , and R. Al-Tahhan. 2008. Impacts of land use change on soil properties in the Mediterranean region of northwestern Jordan. *Journal of land degradation and development*. 19(4), 397- 407.

H. Curtis Monger, Rebecca A. Kraimer, and **Sa'eb A. Khresat**. 2008. Carbon Sequestration by Soil Carbonate—Classification and Genesis. Western Regional Cooperative Soil Survey Conference, Seattle Washington.

Khresat, S. 2009. Effect of climate change on agriculture sustainability in Jordan. EGU General Assembly, Vienna, Austria, abstract #EGU2009-5994

Khresat, S.A., Al- Bakri J. and Buck B. 2010. Formation and distribution of gypsic soils in Jordan. *Turkish Journal of Scientific Reviews*3(1): 55-71.

Lucero, M, Unc, A, Nalim, A, **Khresat, S.** 2010. Can Shrub microbiomes influence plant adaptation across ecological gradients? Wildland Shrub and Arid Land Restoration, May 15-16, Logan UT

Khresat, Sa'eb., Al- Bakri J. and Buck B. 2010. Formation and distribution of gypsic soils in Jordan. *Turkish Journal of Scientific Reviews* 3(1): 55-71.

- Tahtamouni, EM, Unc, A, Lucero, M, **Khresat, S.** 2010. Arid soils microbial enzymatic activity profile as affected by geographical location and soil degradation status. ISME 13 (Biodiversity and Community Analysis section), Seattle Aug 2010.
- Z. Rawajfih, **S. Khresat**, J. Ryan. 2010. Soil Phosphorus Fractions in Calcareous Vertisols and Aridisols of Northern Jordan. Jordan Journal of Agricultural Sciences, Vol 6, No 3 (2010). Pp. 411-422.
- Tahtamouni, M.E., Unc, A., Lucero, M.E., **Khresat, S.** 2011. Discriminatory power of MicroResp analyses across variable spatial scales in semiarid ecological zones. Nature Proceedings. dx.doi.org/10.1038/npre.2011.6204.1.
- J. Al-Bakri, H Saoub, W Nickling, A Suleiman, M Salahat, S **Khresat**, T Kandakji. 2012. Remote sensing indices for monitoring land degradation in a semiarid basin in Jordan. SPIE Remote Sensing, 853810-853810-10
- Adrian Unc, Mohammad EW Tahtamouni, Mary Lucero, **Sa'eb Khresat.** 2012. Biogeographical evaluation of Arid zone soils, role of climate vascular plant species and disturbance induced variability. Eurosil conf., Rome Italy
- J. Al-Bakri , M. Salahat , A. Suleiman , M. Suifan , M. Hamdan , **S. Khresat** and T. Kandakji . 2013. Impact of Climate and Land Use Changes on Water and Food Security in Jordan: Implications for Transcending "The Tragedy of the Commons". Sustainability, 5(2), 724-748; doi:10.3390/su5020724
- S. Khresat.** 2013. Soil erosion and land degradation in the Highlands of Jordan. EGU 2013-171
- Rakad Ta'any, Lama Masalha, **Sa'eb Khresat**, Tarek Ammari and Alaeddin Tahboub. 2014, Climate Change Adaptation: a case study in Azraq Basin, Jordan. Int. J. Curr. Microbiol. App .Sci 3(2): 108-122.
- Monger, Kraimer, **Khresat**, Cole and J.Wang. 2015. Carbon sequestration as soil inorganic carbon—a classification proposal for the second largest terrestrial carbon pool. *Geology*, v. 43; no. 5; p. 375–378 |doi:10.1130/G36449.1
- Buck, B.J., **Khresat, S.**, *in prep*, SEM Analyses of Rare Pedogenic Salts in northern Jordan.
- Al-Bakri, J., T. Brewer, M. Duqqah and S.A. **Khresat.** Integration of remote sensing and GIS for modeling and assessment of land use change in Jordan. Submitted, *Journal of land use*.

Books and Reports:

Monger, H.C., J.J. Martinez-Rios, and S.A. **Khresat**. 2005. Arid and semiarid soils. P. 182-187. In: D. Hillel (ed.) ***Encyclopedia of Soils in the Environment***. Elsevier Ltd., Oxford, U.K.

Monger Curtis, Russell E. Clemons, and Sa'eb A. **Khresat**. 2003. Regional Setting and Paleoclimate of the Pendejo Cave Region. In: Pendejo Cave; J.Libbey (ed.); University of New Mexico Press; 656 pages

Taimah, A. Y. and S. A. **Khresat**. 1988. *Vertisols in Jordan: Properties and distribution*. First edition. Publications of the University of Jordan, Amman. 60 pp.

Milne E, Easter M, Paustian K, Williams SA, Killian K, Swan A, Sessay M, Cerri CEP, Cerri CC, Kamoni P, Gicheru P, Wokabi S, Bhattacharyya T, Palo DK, Gajbhiye KS, Al-Adamar R, Shabbaz M, Rawajfih Z, **Khresat S**, Powlson D, Coleman K, Batjes NH, Bernoux M, Feller C, Falloon P, Fischer G and Tubiello F 2006. *Assessment of Soil Organic Carbon Stocks and Change at National Scale*. In: Milne E, et al., (eds), Reading (UK), pp 171

Introduction to soils - laboratory manual (SOIL 252L) 7th Edition, 1993, Department of Agronomy and Horticulture, New Mexico State University. NM, USA.

Teaching and training experience:

Workshops and training courses offered:

- Climate Change Adaptation and Mitigation, Swedish Meteorological Institute, Norrkoping, Sweden (2009 and 2010).
- Climate Change Challenges, UAE environment group, Dubai, 2010.
- Water scarcity and water management, UAE environment group, Dubai, 2011.
- Climate change effect on Agriculture (Jordan Meteorological department & SIDA)
- Application of GIS in Land Resources management.
- Use of Global positioning system.
- Remote sensing and Image processing in Land use and Management

Classes Taught:

- Environmental Management, Jordan Univ. of Science &Technology.
- Natural resources management, Jordan Univ. of Science &Technology.
- Land management, graduate level, Jordan Univ. of Science &Technology.

- Soil Conservation and Land Management, Jordan Univ. of Science &Technology.
- Physical Geography and Environment. University of Nevada, Las Vegas.
- Soil Mechanics, German Jordan University.
- Introductory Environmental Sciences, Irbid National University.
- Soil Mechanics and properties, German Jordan University.
- Introductory Soils (non- agricultural majors), Jordan Univ. of Science &Technology.
- Principles of Soil Science, Jordan Univ. of Science &Technology .
- Soil Science Principles laboratory, New Mexico State University.
- Soil Morphology, University of Jordan.
- Soil Genesis and Classification, University of Jordan.
- Advanced Pedology, Jordan Univ. of Science &Technology.
- Practices in Soil Science, Jordan Univ. of Science &Technology.
- Soils Seminar, Jordan Univ. of Science &Technology.
- Natural resources and Man, Jordan Univ. of Science &Technology.
- Land Management (graduate level), Jordan Univ. of Science &Technology

**Received letters of thanks for Teaching Excellence in USA.

Extension and community services:

- Keynote speaker (national and international) on environmental issues, climate change and land management.
- Conducted several public awareness programs on environmental issues, desertification , land management, soil conservation measures and best land use practices.
- Held field days on tillage practices and sustainable land management.
- Held seminars on Agro-biodiversity conservation during the period 2000-2005.
- Assisted high school students in preparing science and environmental projects.
- Regular soil sampling and analysis for local farmers and recommendations for land management.

Research Interests:

Research emphasis is on understanding and quantifying the processes involved with the genesis of arid soils and semi arid soils, and applying this knowledge to land management, geomorphic, paleo-climatic, land use, environmental, and management applications. Major areas of research include the following:

- Climate change effect on soil properties and agriculture
- Effect of climatic changes on soil pedogenesis, Land use and management, soil conservation

- Land Degradation and Desertification.
- Paleoclimatology and climate change, and applied environmental studies.
- Reconstruction of the chronology of climatic, and geologic events during the Quaternary.
- Carbon sequestration (organic and inorganic) and Global warming.
- Soil spatial variability and interpretations for land use planning.
- Classification, geomorphology, and genesis of arid and semi-arid regions soils.

Collaboration and joint research programs:

Established joint programs with the following Institutes:

<u>Institute</u>	<u>Contact</u>
Center for Environmental Research UFZ, Halle, Germany	Stefan Klotz
Purdue University , USA	James Vorst
University of Arizona , USA	Carla Casler
New Mexico State University, USA	Curtis Monger
International Arid Lands Consortium, USA	Ken Foster
Michigan State University , USA	Ramez Mahjoory
University of Nevada, Las Vegas, USA	Brenda Buck
University of California, Davis , USA	Khaled Bali
University of Reading, UK	Elanor Milne

Funded Research:

- Diversity, Ecology, and Reclamation Potential of Atriplex Endophytes (Funded by IALC, International Arid Lands Consortium, USA (\$ 75,000).
- Assessment and monitoring of desertification in Jordan using remote sensing and bio-indicators.(Funded by NARTO SPS, \$ 21,000).
- Developing A Web Resource on Soils and Land Management in Jordan (Funded by IALC, International Arid Lands Consortium, USA (\$ 26,000).
- Atmospheric CO₂ sequestration in desert soils of Jordan and New Mexico- Partitioning total Soil CaCO₃ into (1) primary, (2) lithogenic, and (3) atmogenic CaCO₃ pools. Principal Researcher: Dr. H.C. Monger, NMSU (Funded by IALC, International Arid Lands Consortium, USA- \$75,000).
- Modification on Selected Soil properties due to shifting in Land Use in northern Jordan (\$ 3,500).
- Land use and Management of Arid lands in Badia region (\$ 3,000).
- Changes in soil properties as a result of Forest clearing (\$3400).

- Assessment of Soil Carbon Stocks and Change at National Scale (GEF Funded project- \$ 27,000).
- The Use of stable isotopes in pedogenic carbonates to evaluate paleo-environmental and climatic conditions in Northern Jordan (\$7,000).
- Jordan Arid Lands Research and Development, Private Donation to UNLV Foundation. 1998 – 1999 (\$4068.36)
- Mineralogy of cracking soils in Northwestern Jordan (\$5,500)
- Soil Survey and Characterization of Jordanian Badia soils (\$ 25,000).
- Desertification in Northern Jordan: Major causes and processes (\$ 20000).
- Phosphorus availability in soils of northern Jordan in relation to soil properties and the Phosphorous retention characteristics of these soils.
- Residual effect of soil phosphorus in dry land cropping system.
- Geomorphology and Survey of the upper Azraq basin soils (\$5,000).

Conferences:

Presented papers in the following international conferences:

- Aeolian Processes and Their Effects on Soil Genesis in the Mediterranean region of northern Jordan. IUSS: Soils in Space and Time; Germany; October 2013.
- Soil erosion and land degradation in the Highlands of Jordan. EGU General Assembly 2013, April, 2013, Vienna, Austria.
- Adaptation measures to reduce the impact of climate variability on crop production in Jordan: EGU General Assembly 2012, April, 2012, Vienna, Austria.
- Assessment of the risks from climate change and water scarcity on agriculture production in Jordan EGU General Assembly 2011, April, 2011, Vienna, Austria.
- Deforestation effect on soil quality and climate change. EGU General Assembly 2010, May, 2010 Vienna, Austria.
- Effect of climate change on agriculture sustainability in Jordan, EGU General Assembly 2009, April, 2009 Vienna, Austria.
- The MARD symposium, Balancing Water Scarcity and Growing Demands in Agriculture, Dead sea-Jordan, June 26-28/2007.
- Soil organic carbon budget in Jordan Soils, ISRIC, Vienna, Austria 26-30/9/2004.
- Uses of GIS in Natural resources Management. GIS uses conference held at Yarmouk University, Irbid 16/11/2005.
- Assessing Capabilities of Soil and Water Resources in Drylands. The Role of Information Retrieval and Dissemination Technologies; Tucson,

- Arizona. USA, 20-25 October 2002.
- Environmental Problems of the Mediterranean Region; Near East University, Nicosia, North Cyprus 12-15 APRIL, 2002
 - Fifth Arab Conference on the Peaceful Uses of Atomic energy. Beirut 13-17/11/2000
 - Fifth international Conference on Desert development, Lubbock, Texas. 12- 17/8/1996.
 - 10th International Soil Conservation Organization Conference. Purdue University, West Lafayette, Indiana. 24-31/5/99.
 - Fourth Arab conference on the peaceful Uses of Atomic energy Tunis, Tunisia, 14-18/11/1998.
 - 54th Annual meeting, Soil science society of America, October 1990, San Antonio, Texas.
 - 56th Annual meeting, Soil science society of America, November 1992, Minneapolis, Minnesota.
 - Second International conference on Learning from the past-global Environmental Changes, Desert Research Institute (DRI), USA in collaboration with Yarmouk University, Irbid, Jordan May 1998.
 - First International Conference on Dimensions of Environmental stress, Yarmouk University Irbid, October 1998.
 - Management of water resources and applications in arid regions, 12/1999.
 - Participated in the second conference for the International union for conservation of Nature (IUCN), Amman-Jordan, 10/2001.

Workshops:

Participated in the following workshops:

- Extra-curriculum activities workshops series in collaboration with British Council, Jordan (1999-2000).
- Combating desertification National action plan (NAP) for Jordan (2000).
- Regional workshop for Rangelands strategies (2001).
- Linking academic institutes with the private sector (2004).
- Causes and drivers of land degradation in Jordan (6/2006).
- Role of rural women in integrated water resources management in Jordan (2007).
- Sustainable land management in southern Jordan (8/2006).
- Integrated Financing Strategy for UNCCD/NAP Implementation in Jordan (9/2007).
- Land use planning for important environmental and tourist areas. Ministry of Environment (6/2007).
- Organized a workshop entitled " Combating desertification-Joint responsibility" in collaboration with Jordanian Society for combating desertification and Badia development 4/1998.
- Preparation of the national strategy for Biodiversity 5/2001.
- Total quality management in higher education, JUST, 2001.
- Strategic planning and creative thinking, JUST, 2006.

Awards:

- Al-Hasan Excellence appreciation Award, 2009.
- Fulbright Award (Council for International Exchange of Scholars, Dept. of State, USA, 2002.)
- Competitive Graduate Teaching Assistantship, New Mexico State University (1990- 1993).
- Outstanding Teaching assistant, New Mexico State University (1991- 1993).
- NMSU Graduate Student Association Travel Grant (Fall 1992).