



Beni-Suef University (BSU):

Presence of Research Centres with a specific focus on environmental sustainability

1. Centers and laboratories of the Faculty of Earth Science and Faculty of Postgraduate Studies for Advanced Sciences are dedicated to the conservation, development, and effective administration of water resources through the purification of potable water and effluent treatment. In addition, they contribute to the advancement of research and studies that address a variety of environmental issues, thereby facilitating the attainment of sustainable development objectives, including the reduction of carbon dioxide emissions. As detailed below:

1.1. The Faculty of Postgraduate Studies for Advanced Sciences is distinguished by its robust infrastructure of integrated devices and laboratories, as well as its diverse and innovative programs and plans focused on renewable energy:

- a) The faculty encompasses a Department of Renewable Energy Science and Engineering, which is the first of its kind to integrate energy sciences. This department is dedicated to the engineering manufacturing of energy tools from solar energy, batteries, and fuel cells, with a focus on energy storage and conversion. Its objective is to contribute to alternative solutions for electricity and fuel.
- b) It is equipped with a central laboratory that is dedicated to the preservation of thin films in solar cell applications. The current generated can be stored in batteries for future use or used to power a variety of appliances.
<https://www.facebook.com/advancedsciences/videos/437018341678633/>
https://www.psas.bsu.edu.eg/ContentSide.aspx?section_id=11742&cat_id=18
https://www.psas.bsu.edu.eg/Content.aspx?section_id=5780&cat_id=18
- c) The cement sector is the third greatest industrial source of pollution, emitting over 500,000 tons of greenhouse gases annually, and cement manufacture contributes greenhouse gases. Therefore, the Faculty of Postgraduate Studies for Advanced Sciences provides a unique and distinctive program in cement chemistry and technology, which is the sole program of its kind in Egyptian universities. The objective of this initiative is to enhance the characteristics of cement and to establish

alternative methods for the production of low-carbon cement.



Cement chemistry and technology lab

- d) The Environmental and Energy Department is dedicated to the awarding of numerous master's and doctorate degrees, as well as diplomas, in over ten programs that specialize in the disciplines of energy, environment, climate change, cement chemistry and technology, and quality control. A substantial number of degrees were registered and bestowed between 2014 and 2023, as illustrated in the accompanying figure: https://www.psas.bsu.edu.eg/ContentSide.aspx?section_id=696&cat_id=18&fbclid=IwAR3jEC1bRlotL

year	<u>M.Sc.R</u>	M.Sc. A	<u>Ph.D.R</u>	<u>Ph.D.A</u>	<u>Diplome R</u>	<u>DiplomeA</u>
2014	2	0	6	0	65	51
2015	38	0	17	0	88	67
2016	39	1	7	1	130	80
2017	27	7	9	2	181	120
2018	44	9	9	2	360	262
2019	28	16	10	5	466	364
2020	36	10	8	2	853	637
2021	49	19	10	4	119	286
2022	39	22	15	5	221	210
2023	49	14	10	11	167	122
total	349	98	101	32	2652	2199

[Iid4ib9grBZl9iYVCtiqCylINUfFDQ0gN3hnJW1HnP92uj8](https://www.psas.bsu.edu.eg/ContentSide.aspx?section_id=696&cat_id=18&fbclid=IwAR3jEC1bRlotL)

- e) The Central Laboratory and Environment and Water Lab at Faculty of Postgraduate Studies for Advanced Sciences. It contains many devices and tools necessary to conduct analyzes and measurements of water pollutants, and analyzes for different companies and factories inside and outside Beni-Suef Governorate. It helps in making decisions and recommendations necessary to solve many environmental problems related to water pollution and its negative impact on the health of the citizen, which consequently affects the national economy.

<https://www.almasryalyoum.com/news/details/1334930>

<https://www.facebook.com/Central.Lab.AdvancedScience>

https://www.bsu.edu.eg/Content.aspx?section_id=5739&cat_id=18



Environment and water and Energy laboratories (Beni-Suef University –Faculty of Postgraduate Studies for Advanced Sciences, Beni-Suef)

<https://www.facebook.com/advancedsciences/videos/437018341678633/>

<https://onedrive.live.com/?authkey=%21ACSSZACPjy8IKhQ&cid=A7313899D7BABF6E&id=A7313899D7BABF6E%21116&parId=root&o=OneUp>

<https://www.facebook.com/advancedsciences/videos/459802619399287/>

https://www.psas.bsu.edu.eg/ContentSide.aspx?section_id=11742&cat_id=18

https://www.psas.bsu.edu.eg/Content.aspx?section_id=5745&cat_id=18

https://www.psas.bsu.edu.eg/Content.aspx?section_id=5780&cat_id=18

- f) f) The Excellence Center for the Economic Production of Approved Nanometric Materials is dedicated to the establishment of a small, certified factory that will produce specific and approved nanometric materials that are required by both society and industry. This is intended to serve as an example of how research and industry can be integrated. Safe and highly efficient energy devices that are capable of storing clean energy can be developed through the use of blended nanometric materials. At the Academy of Scientific Research, the Science and Technology Development Fund is utilized to finance the center initiative. A number of items are established by the Science and Technology Development Fund to guarantee the project's success.,

<https://www.shorouknews.com/news/view.aspx?cdate=25022019&id=03d06323-2a6e-48fe-816b-c28d0c4325e7>

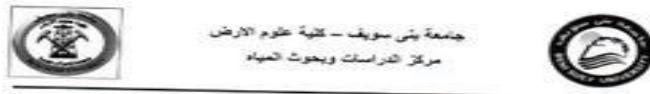
1.2. An environmental assessment of the university's laboratories and workshops is being conducted by the Water Studies and Research Center at the Faculty of Earth Sciences. It is equipped with numerous apparatuses that can assist in the monitoring of the environment, the preservation of air quality, and the mitigation of climate change. This pertains to the subsequent strategic objectives;

- Designing and implementing treatment units for all types of sewage, agricultural and industrial water.
- Conducting studies for the establishment and rehabilitation of wastewater treatment plants
- Existing stations and raising their efficiency
- Conducting studies for the establishment and rehabilitation of existing wastewater treatment plants and raising their efficiency
- Water desalination (sea water and ground water)
- Purification of surface and ground water
- Conducting studies on rising groundwater levels and their negative effects on the surrounding environment and infrastructure, as well as the quality of agricultural soil.

<https://www.facebook.com/100024024607600/videos/1330582720708432/>

https://www.earthsc.bsu.edu/Content.aspx?side_id=1611&cat_id=50

<https://www.earthsc.bsu.edu/Backend/Uploads/PDF/%D9%85%D8%B7%D9%88%D9%8A%D9%87%20%D8%A7%D9%84%D9%85%D8%B1%D9%83%D8%B2-%D9%85%D8%AD%D9%88%D9%84.pdf>



جامعة بني سويف - كلية علوم الأرض
مركز الدراسات وبحوث المياه

كلية الهندسة

فيما يلي التقرير الفصلي لبعض القياسات البيئية التي أجريت لبعض النقاط داخل كلية يوم الثلاثاء الموافق 4/5/2021 بمعرفة مركز الدراسات وبحوث المياه بكلية علوم الأرض جامعة بني سويف.

أولاً: قياسات الغازات

H2S mg/m3	VOC mg/m3	NO2 mg/m3	SO2 mg/m3	CO mg/m3	CO 2 mg/m3	معدل القياس
0.00	2.10	0.02	0.00	3.22	322	معدل الطرق
0.00	3.11	0.55	0.00	1.96	523	معدل الخرسانة
-	-	150	150	10 ⁷		(1)

(1) لمصلحة القياسات المسبقة لقياس الحد الأقصى لدرجة التلوث البيئي على النحو المتضمن عليه في القانون 1994/4 وتعديله (قانون 2009/9).

توقيت 8 ساعات

ثانياً: قياسات المواد العالقة

PM10 µg/m3	معدل القياس
0.727	معدل الطرق
0.616	معدل الخرسانة
150	(1)

(1) لمصلحة القياسات المسبقة لقياس الحد الأقصى لدرجة التلوث البيئي على النحو المتضمن عليه في القانون 1994/4 وتعديله (قانون 2009/9).



جامعة بني سويف - كلية علوم الأرض
مركز الدراسات وبحوث المياه



ثالثاً: بعض القياسات البيئية Environmental measurements

Heat stress (°C)	Illumination intensity (lux)	Noisy (dp)	امكان القياس
32	165	111	معدل الطرق
31	72	103	معدل الخرسانة
		90	(1)

الملاحظات والتوصيات:

شدة الإضاءة تحتاج لتعديل في ورشة التجارة لتحقيق الرؤية المطلوبة.
سجلت شدة الصوت قيم جميعها أعلى من الحد الأقصى المسموح به للوردية الواحدة (8 ساعات) وهو 90 سجلت قيم درجة الحرارة متقاربة.
المعملان في مكان ضيق مقارنة بنسبة الصوت وينقصهما التهوية ولا يوجد شفاطات بالمكان.
الأخصائي في المعمل يحتاج ضرورياً لأدوات حماية شخصية وخاصة سماعات الأذن والكمامات.
قياسات الاتبعات الهوائية تمت في ظروف عادية وتوصي بالقياس في ظروف أخرى يصغها العمال بتواجد غازات كثره.
المكان بحاجة ماسة للوحات ارشادية علي كل الأجهزة والوحدات الكهربائية وتحديد مسار الخروج أو الهروب.
توفير أمان لمسوت جهاز كساره نظمت الزكام ووجوب الكنتف الدوري لتسنع للعمالين.
وتفضلوا بقبول فائق الاحترام

د. محمد عبدالوهاب عطالله
مدير مركز الدراسات وبحوث المياه

د. أ. علي قرني سليم
رئيس مجلس إدارة مركز الدراسات وبحوث المياه
عالم
2021/5/4



Technical report of some environmental measurements for some points within the Faculty of Engineering on 4/5/2021 by The Water Studies and Research Center



The Water Studies and Research Center at Faculty of Earth Science

2. The objective of the Center for the Development of Means of Preserving the Environment at BSU is to identify environmental issues in the province and implement scientific solutions to mitigate them. It also forges extensive partnerships with advisory offices, governmental and industrial entities, and community and scientific institutions to address environmental issues and offer specialized technical guidance. Furthermore, it is actively involved in the development and implementation of policies, regardless of whether they are at the governorate or national level.

<https://www.elwatannews.com/news/details/4316926>

<https://www.elbalad.news/4414088>

<https://www.elwatannews.com/news/details/4316926?t=mpush>

3. The University Performance Development Center through the Office of Consulting and linking research with industry. It aims to the following;

- a. Opening unconventional permanent channels of communication between the university, industry and society.
- b. Determining market and industry needs, whether training needs, technological or production needs.
- c. Providing suggestions for directing scientific research at Beni-Suef University towards the needs of the market and industry.
- d. Marketing the results of applied scientific research projects for industry and the private sector, whether local or international, in coordination with the beneficiary authorities and heads of research projects.
- e. Strengthening and activating cooperation between the industrial zones in Beni Suef or other governorates and between the universities on the other hand, which contributes to the development of the educational process and realizing the applied benefit of research at the university.
- f. The office, through experts in the university with various and different specializations, and the university units, provides technical and training consultations for the various industrial sectors.

<https://www.youtube.com/watch?v=LDz59R7pPoM>

https://www.bsu.edu.eg/Content.aspx?section_id=14560&cat_id=414

https://www.bsu.edu.eg/Sector_Home.aspx?cat_id=382

4. The university conducts regular meetings with various BSU centers to promote environmental sustainability and to deliberate on the energy and water conservation strategies for the upcoming academic years. Additionally, the university oversees and evaluates the implementation of the campus plans. For instance;

- a) Meeting with the Office of International Ranking and Sustainable Development to discuss its reports and discuss proposed recommendations about the goals of sustainable development for the university according to the vision of Egypt 2030 for the following year.
- b) Meeting with Center for the Development of Means of Preserving the Environment to identify environmental problems, to combat their causes, and to show monitoring reports and referring violations of the environment.

<https://www.shorouknews.com/news/view.aspx?cdate=26082020&id=dc23f069-d73e-4ff9-b907-cbcdeee013b3>

<https://www.elwatannews.com/news/details/4316926?t=mpush>

https://www.bsu.edu.eg/News.aspx?NID=151567&cat_id=1

https://www.bsu.edu.eg/Content.aspx?section_id=11198&cat_id=1
<https://www.facebook.com/env.bsu/>
https://www.science.bsu.edu.eg/ContentSide.aspx?section_id=6392&cat_id=10

5. Beni-Suef University made a partnership with the Center of Excellence for Water, a USAID funded project where;
- a) Centre of excellence in water research in cooperation with 5 Egyptian universities and 5 US universities funded from USAID is concerned with Exchange and training, education, governance, sustainability and research. It develops scientific solutions to water problems from lack of supplies and pollution, and develops the infrastructure for water research laboratories. It is also concerned with the discussion of the current and future challenges, innovative solutions and outlook for industrial waste water treatment in Egypt.
 - b) Beni-Suef University is the co-chair for the sustainability phase.
 - c) The Center of Excellence for water COE-Water is involved in third public private partnership PPP with Egypt aiming to long-term sustainability of the COE-water activities.
 - d) Six Research teams from Beni-Suef University won 6 competitive projects in the water research field.
 - e) BSU was the top university from the list of the winning Egyptian universities that won 48 master's scholarships from the water Excellence Center.

<https://www.almasryalyoum.com/news/details/2407801>

<https://www.facebook.com/egyptcoewater/posts/406066994067902>

https://www.bsu.edu.eg/News.aspx?NID=86718&cat_id=1&fbclid=IwAR2i3qZcCALJIWmlu#

https://www.bsu.edu.eg/News.aspx?NID=150952&cat_id=1

https://bsu.edu.eg/SingleNews.aspx?NID=152109&cat_id=1#:~:text=%D8%A7%D9%84%D8%B9%D8%A7%D9%85%D8%A9%20%D9%84%D9%84%D9%85%D8%B4%D8%B1%D9%88%D8%B9%D8%A7%D8AA%20%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%8A%D8%A9-%D8%AC%D8%A7%D9%85%D8%B9%D8%A9%20%D8%A8%D9%86%D9%8A%20%D8%B3%D9%88%D9%8A%D9%81%20%D8AA%D8AA%D8%B5%D8AF%D

<https://www.rayalauma.com/2022/09/15/%D8%B1%D8%A6%D9%8A%D8%B3-%D8%AC%D8%A7%D9%85%D8%B9%D8%A9-%D8%A8%D9%86%D9%89-%D8%B3%D9%88%D9%8A%D9%81-%D8%A7%D9%84%D8%AD%D8%B5%D9%88%D9%84-%D8%B9%D9%84%D9%89-6-%D9%85%D8%B4%D8%B1%D9%88%D8%B9%D8%A7/>

<https://www.youm7.com/story/2019/9/4/%D8%AC%D8%A7%D9%85%D8%B9%D8%A9-%D8%A8%D9%86%D9%89-%D8%B3%D9%88%D9%8A%D9%81-%D8AA%D8B4%D8A7%D8B1%D9%83-%D9%81%D9%89-%D9%85%D8B4%D8B1%D9%88%D8B9-%D8A5%D9%86%D8B4%D8A7%D8A1-%D9%85%D8B1%D9%83%D8B2-%D8AA%D9%85%D9%8A%D8B2-%D8B9%D9%84%D9%85%D9%89/4403354>

<https://www.egyptcoewater.eg/sustainability/>

<https://wrc.wsu.edu/organization/beni-suef-university/>



Center of Excellence for Water

CENTER OF EXCELLENCE FOR WATER
BRIEF ON
BENI SUEF UNIVERSITY
PARTICIPATION IN THE CENTER OF EXCELLENCE FOR WATER

Project Name: Center of Excellence for Water
Award Number: 72026319CA00001
Reporting Period: (February 2019 – October 2022)

Submitted by: Prof. Essam Shaban, Chief of Party of the Center of Excellence for Water

Brief on Beni Suf University Participation in the Center of Excellence for Water Activities

Participation of Beni Suf University in the Center of Excellence for Water's Activities

The following sections describe the participation of Beni Suf University in key activities from February 2019 to October 2022:

- Component I: Governance
 - Beni Suf University (BSU) participated in the governance workshop held in Cairo from October 24-29, 2021 (3 participants).
- Component II: Instructional Innovation and Curriculum Development
 - Undergraduate Courses Development: 17 courses were assigned to 24 Egyptian faculty from the 5 EPU's, among them 1 course-developer from BSU assigned for 3 courses.
- Component III: High-Quality Applied Research
 - Small, Medium and Large Research Grants: The largest number of research proposals were submitted by BSU: 20 research proposals, 6 Research grants contracted with Beni Suf University (BSU), 5 Large-size projects - 8 medium-size projects - 4 small-size projects
 - Out of 21 shortlisted proposals 6 are ~~are~~ contracted (1 Large, 2 medium & 3 small).
 - Cairo Water Week: active participation of BSU in CWW2020, CWW2021 and CWW2022.
 - International Symposium: active participation of BSU in the Center of Excellence for Water International Symposium held in September 2022.
- Component IV: Exchange, Training and Scholarships
 - Training and Workshops (Total of 17 participants from BSU):

The Center of Excellence for Water Organized 10 training for EPU's as follows:

 - Learning Management System using Moodle; held at Alexandria University from February 4-6, 2020 (25 participants; 2 from BSU)
 - Advanced Learning Management System (LMS) Workshop; held from February 28 - March 4, 2020, at El-Bah State University; (8 participants; Nono from BSU)
 - Water-Energy-Food (WEF):
 - WEF 2020: held from November 9 - December 9, 2020, (12 Participants, 1 from BSU)
 - WEF 2021: held from December 12 2021 to March 31 2022 (28 Participants, 10 from BSU)
 - Innovative Teaching Strategies workshop; held online from January 28 - March 10, 2021, with face-to-face follow-ups in Ain Sokhna (April 2021) and Alexandria (October 2021). (9 participants; 1 from BSU)
 - Governance and Strategic Planning Workshop; held in Cairo from October 24-29, 2021. (19 participants; 3 from BSU)
 - A series of tailored training were delivered for the EPU's (in cooperation with the Pedagogical Innovation and Distance Learning Unit at Alexandria University) including a face-to-face training on "Learning Management Systems" at BSU (10 participants).
 - Three Water Quality workshops:
 - First Water Quality Workshop: 19 Participants non from BSU

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Center of Excellence for Water

Brief on BSU partnership in the Center of Excellence for water

6. The implementing of the center for environmental monitoring and limiting the risks of climate change at Beni-Suef University will be completed by next year. It will be a unique center at the level of Egyptian universities that will strength the university's role in facing climate changes and in order to achieve the principle of sustainability and Egypt's vision of 2030.

It will aim to the following;

- Monitoring all environmental problems in Beni-Suef Governorate
- Determining the type and sources of these problems, and their relationship to potential climate changes
- Providing appropriate scientific solutions according to the type of each problem
- Making a map of climatic challenges and all risks that threaten water and agricultural resources and air pollution
- Creating a database of problems which results in negative effects on the environment and directing them to be enrolled in master's and doctoral degrees.
- Establishing a number of environmental monitoring stations in cooperation to monitor carbon emissions.
- Providing scientific advices in the field of wastewater treatment, and assessing the environmental impact of all development activities and projects at the governorate level.

<https://www.youm7.com/story/2022/7/28/%D8%A5%D9%86%D8%B4%D8%A7%D8%A1-%D8%A3%D9%88%D9%84-%D9%85%D8%B1%D9%83%D8%B2-%D9%84%D9%84%D8%B1%D8%B5%D8%AF-%D8%A7%D9%84%D8%A8%D9%8A%D8%A6%D9%89->

<https://medplants.bsu.edu.eg/>
<http://www.laserinst.bsu.edu.eg/>

7. Medicinal and Aromatic Plants Research Institute. It offers remarkable programs to prepare scientific competencies who conduct advanced and qualified research to compete in labor market, to maximize the importance of producing aromatic and medicinal plants, to provide solutions raising the efficiency of crops and various other things through different departments; i) Department of Biotechnology for Medicinal and Aromatic Plants, ii) Department of Medicinal and Aromatic Pharmaceuticals, iii) Production and Post-Harvest Department, and iv) Department of Chemistry of Medicinal and Aromatic Plants.
<https://medplants.bsu.edu.eg/>
8. Laser Institute For Research and Applications. The institute seeks to prepare specialized cadres with high efficiency in the use of lasers in various disciplines such as medical, engineering, basic and agricultural sciences in order to meet the requirements of the communities of these governorates.
<http://www.laserinst.bsu.edu.eg/>

About Faculty of agriculture at Beni-Suef University:

The environment is considerably benefited by sustainable agriculture, which promotes soil health, conserves water, and enhances biodiversity. Ultimately, laboratories contribute to a more sustainable agricultural system by supporting these efforts through research, diagnostics, education, and monitoring.

Sustainable agriculture plays a crucial role in environmental conservation and has significant implications for laboratory research and practices.

Organic Matter: The incorporation of organic materials improves soil health and water retention, while sustainable practices promote biodiversity and reduce erosion. **Nutrient Management:** Incorporating organic materials enhances soil fertility and structure.

Efficient Utilization: Methods such as trickle irrigation reduce water pollution and improve efficiency.

Pollution Reduction: Sustainable practices mitigate the contamination of water and discharge caused by pesticides and fertilizers.

Carbon Sequestration: The reduction of greenhouse gas emissions can be achieved through the implementation of practices such as agroforestry and cover cultivation, which capture carbon dioxide.

Resilience: Sustainable systems are frequently more resilient to climate extremes and changes.

Local Production: Sustainable agriculture promotes the development of local food systems, which in turn improves food security and decreases dependence on imports.

Nutritional Benefits: The utilization of a variety of crops can result in the production of more nutritious food sources.

Research and Development

Innovative Practices: Laboratories conduct research on sustainable practices, developing new techniques and technologies that enhance productivity while minimizing environmental impact.

Soil and Water Testing: Farmers are able to make informed decisions about nutrient and irrigation

management by analyzing the condition of soil and water.

Pest and Disease Management

Natural Pest Control: The utilization of chemical pesticides is diminished through the investigation of biological pest control methods.

Disease Diagnostics: Laboratories offer diagnostic services to promptly identify plant diseases, thereby minimizing crop losses.

Genetic Research Crop Improvement: Genetic research is instrumental in the development of more resilient crop varieties that can withstand environmental stresses.

Biodiversity Conservation: Laboratories can help preserve indigenous and heirloom plant varieties.

Education and Outreach Training Programs: Laboratories frequently conduct training sessions for farmers on the advantages of utilizing environmentally favorable inputs and sustainable practices.

Information Dissemination: The dissemination of research findings to the agricultural community is instrumental in the promotion of sustainable practices.

Evaluation and Monitoring

Environmental Impact Assessments: Laboratories evaluate the environmental consequences of agricultural practices to inform policy and practice in order to promote sustainability.



Faculty of Agriculture labs at Beni-Suef University



Natural Pest Control and Environmental Impact Assessments, faculty of agriculture, Beni-Suef University

A researcher at Beni-Suef University wins the Best Scientific Poster Award at the International Wheat Research Conference in the People's Republic of China.

Dr. Mansour Hassan, President of Beni-Suef University, announced today that Dr. Sherif Ragab Mohamed El-Arid, Assistant Professor in the Department of Crops at the Faculty of Agriculture and Director of the Project Support and Funding Office, received the Best Scientific Poster Award at the Second International Conference on Wheat Research, held in Beijing, China with the participation of numerous universities, scientific institutions, and international research centers.



WWC 2ND INTERNATIONAL
WHEAT CONGRESS

September 11-15, 2022, Beijing, China

Outstanding Poster Award

EL-Areed SRM

was selected to receive the outstanding poster award
on wheat research

Curtis Pozniak
Chairman of International
Organizing Committee

LIU Xu
Chairman of Local Organizing
Committee

September 15, 2022, Beijing, China

https://www.bsu.edu.eg/NewsDetails_New.aspx?NID=156250&cat_id=1

Also different researches at the faculty of agriculture, Beni-Suef University for environmental sustainability of agriculture in Egypt



Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: www.elsevier.com/locate/scitotenv

Improving environmental sustainability of agriculture in Egypt through a life-cycle perspective



Sara Lago-Oliveira ^{a,*}, Sherif R.M. El-Areed ^b, Maria Teresa Moreira ^a, Sara González-García ^a

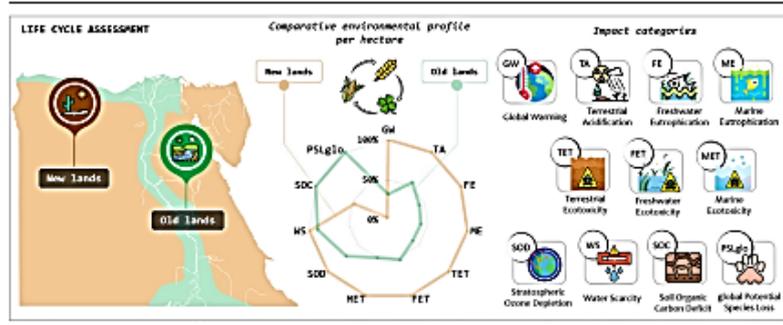
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HIGHLIGHTS

- Agricultural practices on fertile and irrigated desert areas of Egypt are analyzed
- Crop rotation in fertile regions had higher environmental impact on most indicators
- Irrigation and emissions from N-fertilizer use are key environmental factors
- Biodiversity loss is predominantly driven by land transformation
- Soil organic content depletion is attributed to land use intensity

GRAPHICAL ABSTRACT



About the Faculty of Veterinary Medicine;

Shanghai Ranking: Beni-Suef University ranks 151-200 globally and second locally in veterinary medical sciences.

Role of Veterinary Medicine in Sustainable Animal Farming Animal Health and Welfare Preventive Care:

Regular health check-ups and vaccinations help prevent disease outbreaks, reducing the need for antibiotics and minimizing environmental impact.

Welfare Practices: Promoting humane treatment of animals enhances their well-being, which can lead to improved productivity and sustainability.

Disease Management Biosecurity Measures: Implementing biosecurity protocols helps prevent the spread of diseases, reducing the need for culling and minimizing waste.

Diagnostics and Treatment: Early diagnosis and effective treatment reduce the economic losses associated with animal diseases. Sustainable Production Practices

Nutritional Guidance: Veterinarians provide advice on optimal feeding practices that enhance growth and reduce waste, thereby decreasing environmental impact.

Integrated Farming Systems: Promoting integrated systems that combine crops and livestock can optimize resource use and enhance sustainability.

Role in Environmental Sustainability Antimicrobial Stewardship Responsible Use: Veterinary medicine advocates for the judicious use of antibiotics to prevent resistance, which is crucial for both animal and human health.

Alternative Therapies: Researching and promoting alternatives to antibiotics can reduce environmental pollution from pharmaceutical runoff. Waste Management Nutrient Recycling: Veterinary practices can help design systems for

recycling animal waste into fertilizers, reducing environmental pollution and enhancing soil health.

Environmental Assessments: Conducting assessments of farm practices helps identify areas for improvement in waste management and environmental impact.

Research and Development Innovative Practices: Veterinary researchers develop and promote sustainable farming practices, such as precision livestock farming, which enhances efficiency and reduces environmental footprints.

Climate Change Studies: Investigating the impacts of climate change on animal health and productivity helps farmers adapt practices to mitigate these effects.

Contributions to Research Data Collection and Analysis Health Monitoring: Collecting data on animal health and productivity helps researchers understand the links between animal care and environmental impact.

Epidemiological Studies: Veterinary epidemiology contributes to understanding disease dynamics and their environmental implications.

Sustainable Breeding Programs Genetic Research: Researching genetic traits that enhance disease resistance and feed efficiency supports sustainable breeding practices.

Biodiversity Preservation: Efforts to preserve local breeds contribute to genetic diversity and resilience in animal agriculture.

Education and Outreach Farmer Training: Veterinary professionals often provide training and resources to farmers on sustainable practices, improving overall farm management.

Community Engagement: Engaging with communities to promote welfare and sustainability in animal farming enhances public awareness and support.



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ShanghaiRanking's Global Ranking of Academic Subjects 2020 - Veterinary Sciences 2020

Field: Life Sciences Subject: Veterinary Sciences Methodology

World Rank	Institution*	Country/Region	National/Regional Rank	Total Score	Score on Q1
101-150	Uppsala University		2		26.7
151-200	Alexandria University		2-6		21.7
151-200	Anhui Agricultural University		19-24		23.1
151-200	Beni-Suef University		2-6		21.7
151-200	Cairo University		2-6		28.2
151-200	Chiang Mai University		3		29.3
151-200	Chonnam National University		3-7		28.5