



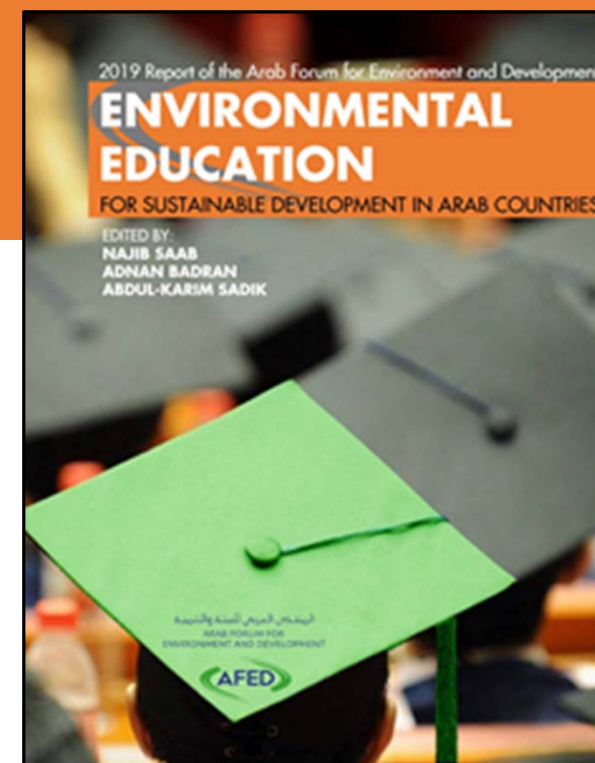
2019 Report of the Arab Forum for Environment and Development

ENVIRONMENTAL EDUCATION

FOR SUSTAINABLE DEVELOPMENT IN ARAB COUNTRIES

Environmental Education in Arab Universities

Riyad Y. Hamzah
President University of Bahrain



Arab universities witnessed a rapid increase in programs related to the environment and sustainable development.



AFED Survey

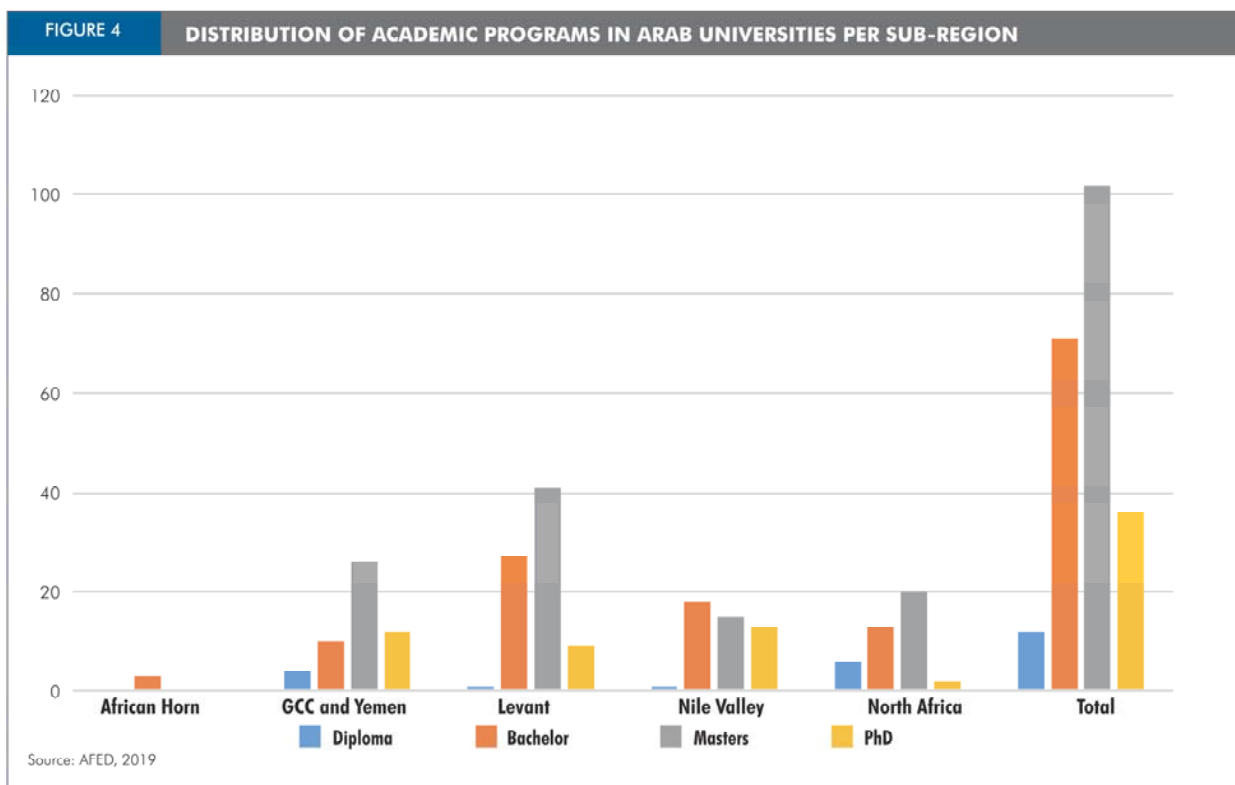
57 Arab universities surveyed offer 221 degree programs on environmental topics.



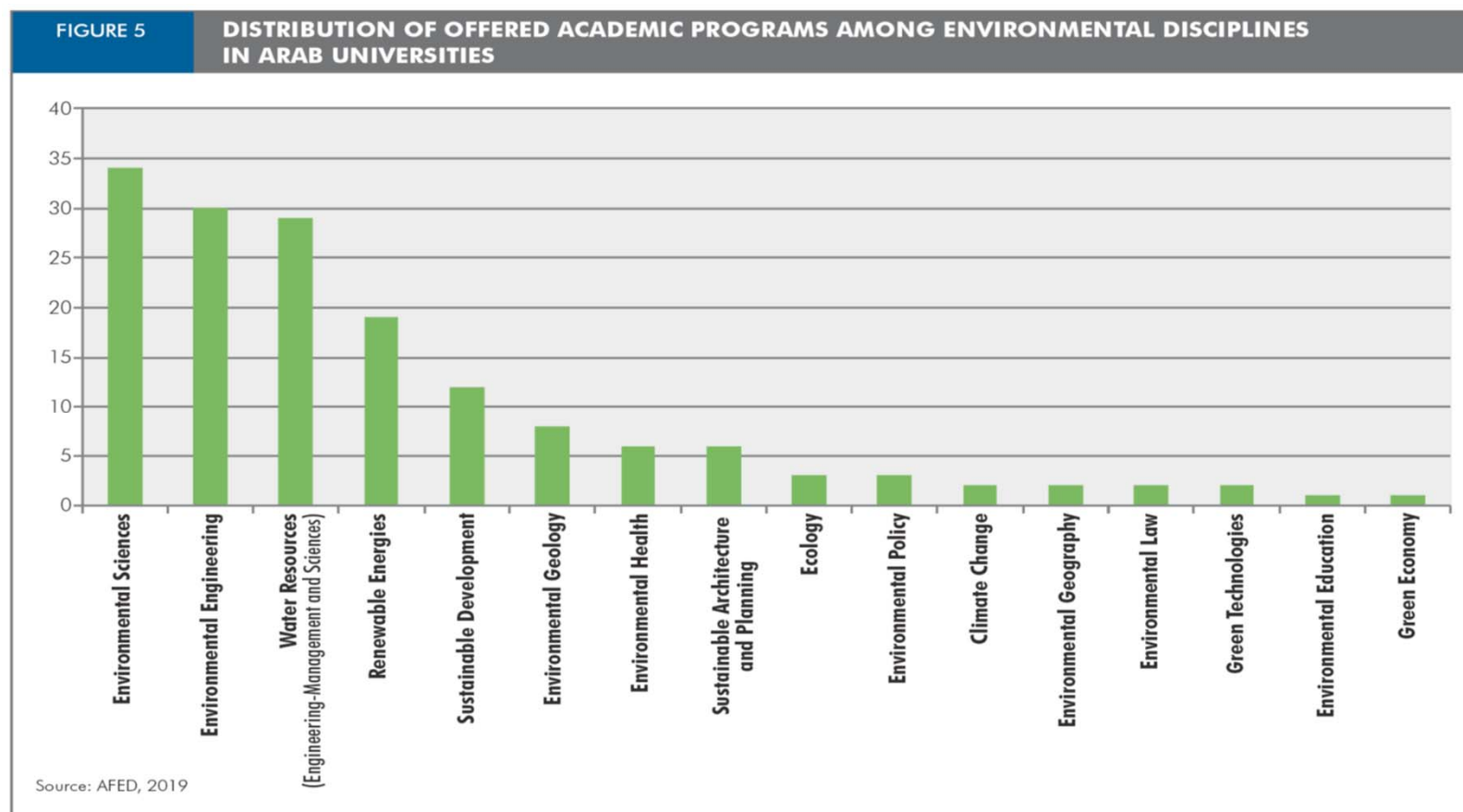
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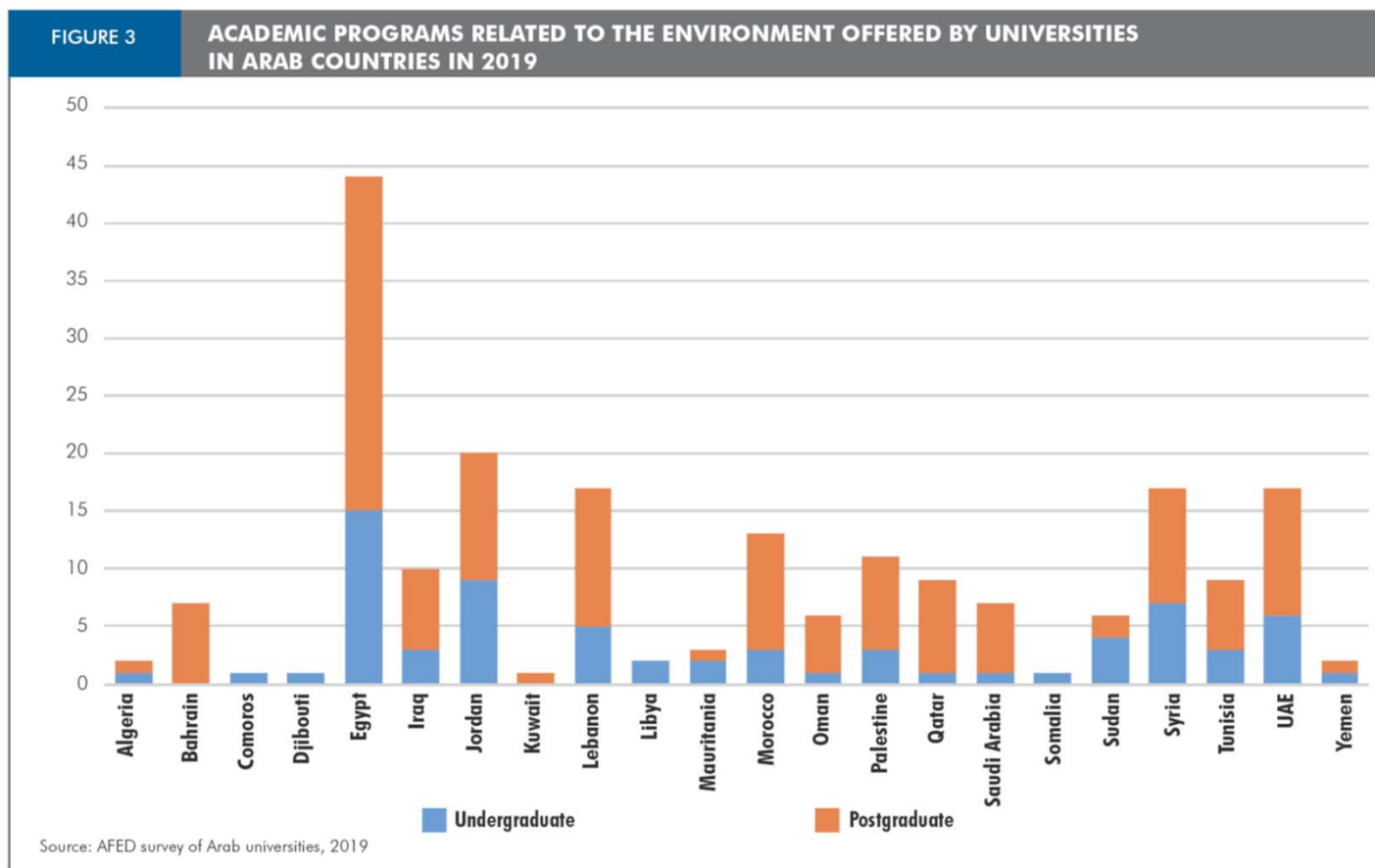
DISTRIBUTION OF ACADEMIC PROGRAMS IN ARAB UNIVERSITIES PER SUB-REGION



DISTRIBUTION OF OFFERED ACADEMIC PROGRAMS AMONG ENVIRONMENTAL DISCIPLINES IN ARAB UNIVERSITIES



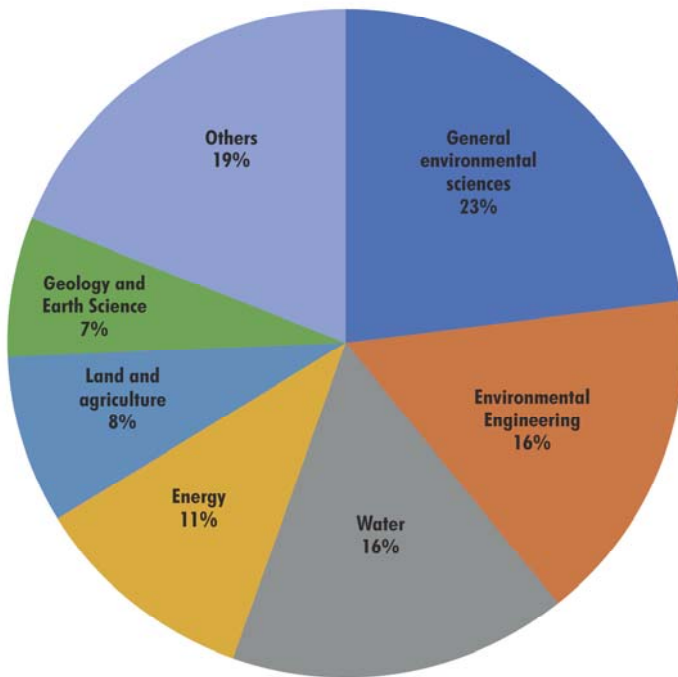
ACADEMIC PROGRAMS RELATED TO THE ENVIRONMENT OFFERED BY UNIVERSITIES IN ARAB COUNTRIES IN 2019



UNDERGRADUATE and POSTGRADUATE

FIGURE 7

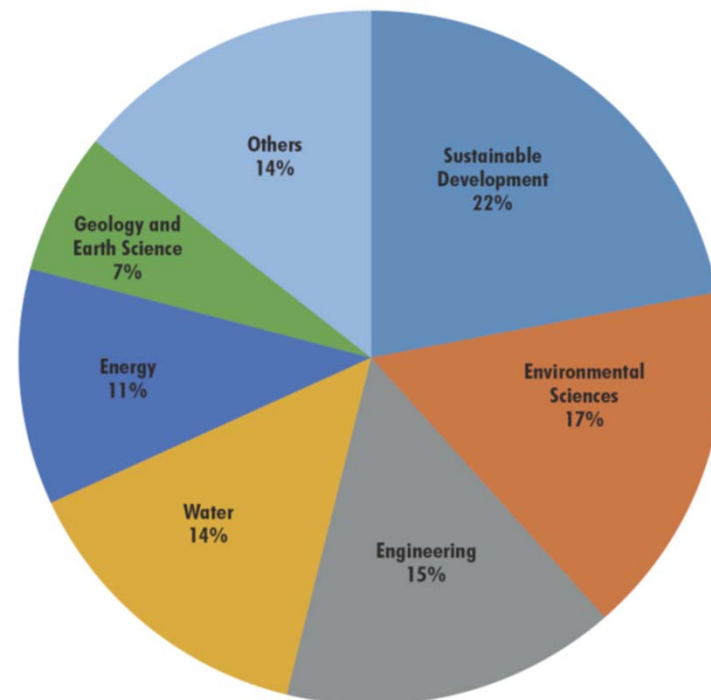
MAJOR DISCIPLINES OF BACHELOR'S DEGREES RELATED TO ENVIRONMENT OFFERED BY ARAB UNIVERSITIES



Source: AFED, 2019

FIGURE 8

POST-GRADUATE DEGREES RELATED TO THE ENVIRONMENT OFFERED BY ARAB UNIVERSITIES



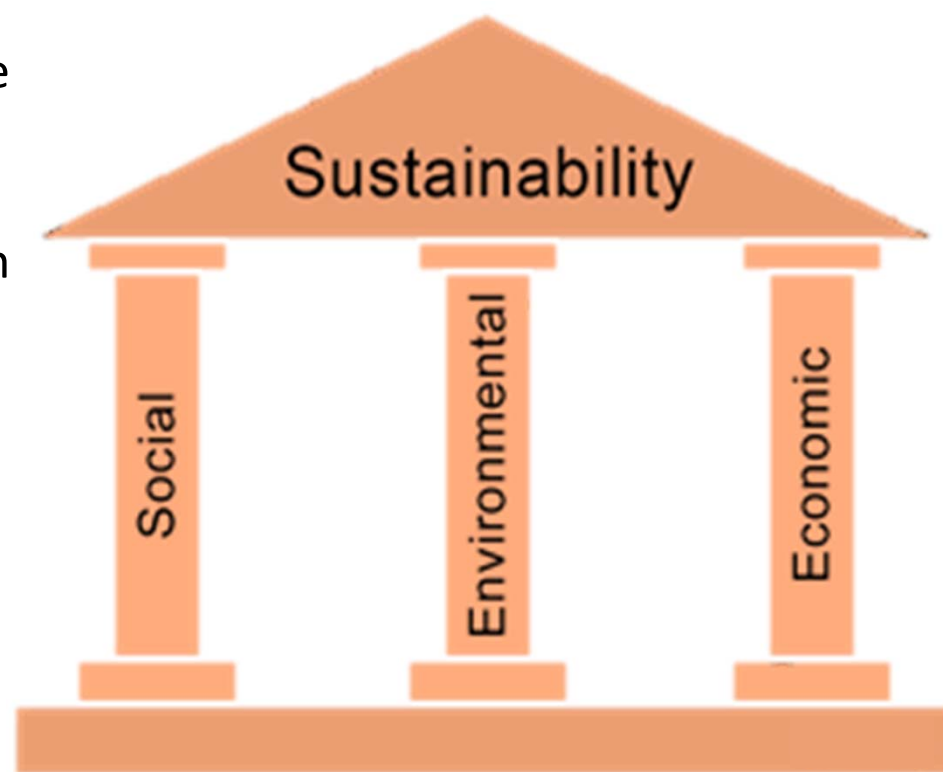
Source: AFED, 2019

Research output of Arab universities and research centers on environmental sciences



Recommendations

- Integrate these three pillars of sustainable
- Strengthen topics such as Environmental Law in law schools, and Green Economy in faculties of economics
- Ecological Footprint and Natural Capital Accounting to be included in economics and policy studies
- Inter-academic and multi-disciplinary cooperation between different faculties



Recommendations

- Student exchanges and more scientific collaboration programs between universities and research institutions
- Introductory course on Environment and Sustainability for first year students



Proposed Course Syllabus

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ANNEX1 INTRODUCTION TO ENVIRONMENT AND SUSTAINABLE DEVELOPMENT Proposed Course Syllabus

COORDINATED BY IBRAHIM ABDELGELIL

✓ Course Description:

This course is designed to introduce the essential concepts of environment and sustainable development to junior-level university students from all faculties and specializations. It examines the complex environmental issues in a multidisciplinary approach. The course will focus on the environment through its many diverse interrelationships with the social and economic aspects of sustainable development, through various modes of delivery, including case studies from the Arab region. The course might be split over 2 semesters, with basics in semester 1 and advanced topics in semester 2.

✓ Course Objectives & Learning Outcomes:

Upon completion of this course, the student is expected to:

- Better understand the basic concepts of ecology and environment.
- Better understand challenges facing the environment and means to achieve sustainable development, including financial aspects and the transition to green growth.
- Better understand the services provided by ecosystems to human life.
- Analyze the complex relationships between the socioeconomic systems and the environment.
- Identify the human impacts on the ecosystems.
- Appreciate environmental ethics.
- Understand the concept and importance of sustainability and its historical evolution.

- Gain basic skills to conduct academic research, technical writing and presentations in environment-related subjects.

✓ Required Readings & References

The required readings for the course will be selected from international and local sources. Ultimately, one textbook or more would be produced, specifically developed to teach the course in Arab universities. Additional readings will be given to students as handouts.

✓ Course topics

I. Basic Definitions (environment, ecology, natural resources)

II. Ecosystems and their Function

1. Definition and origin
2. Types, components and structure

III. Environment and Development

1. Background and definition
2. Interactions between socio-economic systems and ecosystems
3. Concepts of carrying capacity and pollution
4. Ecological Footprint
5. Sustainable Development (definition, evolution and concepts)
6. Sustainable Development Goals (SDGs)
7. Green Growth

IV. Biodiversity

1. Definitions
2. Values of biodiversity (economic, social, ethical, etc.)
3. Threats to biodiversity

V. Land-use and Urbanization

1. Environmental impacts of urbanization
2. Transportation and its impacts on land and air
3. Urban services: waste, water, sanitation (details in VII, X and XI)

VI. Agriculture, and Food Security

1. Agriculture productivity
2. Agrochemicals and their environmental impacts
3. Land degradation
4. Organic food
5. Genetically modified crops
6. Food security

VII. Water Sources and Management

1. Hydrological cycle
2. Water pollution
3. Marine pollution
4. Integrated water resources management
5. Usage and efficiency

VIII. Energy Sources

1. Fossil energy (Coal, oil, and gas)
2. Renewable energy (biomass, solar, wind, hydro, geothermal)
3. Nuclear
4. Sustainable energy options

IX. Energy-Water-Food Nexus

1. Definition of the nexus
2. Synergies and trade-offs
3. Management issues

X. Air Quality Issues

1. Sources and types of air pollutions
2. Air quality standards and monitoring
3. Strategies/technologies for air quality management

XI. Waste Management

1. Solid wastes types, sources and management
2. Wastewater types, sources and

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- management
3. Hazardous materials definition, types, sources and management

XII. Global environmental issues

1. Climate change and its impacts
2. Ozone depletion
3. Desertification
4. Biodiversity
5. Oceans and international waters

XIII. Environmental Policy and Governance

1. Environmental laws and regulations
2. Global environmental institutions and governance
3. International conventions and treaties on environment and climate change
4. Environmental Management System- ISO 14001
5. Capacity building, training, and public awareness

✓ Proposed references and reading materials:

1. G. Tyler Miller and Scott Spoolman (2018) "Living in the Environment", International Edition
2. Eldon D. Enger (2016) "Environmental Science: A study of interrelationships"
3. Richard T. Wright, Dorothy F. Boorse (2017) Environmental Science: Toward A Sustainable Future, Pearson, 13th Edition
4. <http://www.ourplanet.com>, Accessed May 2019.
5. <https://www.undp.org/content/undp/en/home/sustainable-development-goals.html>, Accessed May 2019.
6. www.myfootprint.org Accessed May 2019.
7. <http://www.globalchange.umich.edu/globalchange1/current/lectures/klimg/ecosystem/ecosystem.html>, Accessed May 2019.
8. Series of AFED reports on Arab Environment (2008-2019) www.afedonline.org



Thank you
