



الجامعة الأوروبية بفس
EUROMED UNIVERSITY OF FES
UNIVERSITÉ EUROMED DE FÈS

SDG15 Report

Land life

2023





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SDG15 report : Life on land

Introduction

Sustainable Development Goal number 15, dedicated to Life on Earth, represents an essential pillar of our commitment to a planet in balance. It underlines the urgency of protecting, restoring and promoting the sustainable use of terrestrial ecosystems, forests and the biodiversity that sustains them. This report looks at the critical challenges and innovative approaches needed to achieve the ambitious goals of SDG 15, highlighting the critical importance of preserving biological diversity and ensuring the sustainability of terrestrial ecosystems for generations to come .

The fifteenth goal of the United Nations SDGs aims to establish sustainable management of terrestrial ecosystems (forests and mountains) by preserving biodiversity and soils, limiting the long-term impacts of natural disasters.

In this context, a certain number of educational and research activities are deployed by the Euromed University of Fez through teaching modules, end-of-study projects (PFE), research and patents.

Training

Master In Environmental Engineering and Water Management (GEGE)

- Natural and disturbed systems - Microbiology;
- Materials in the environment and methods of analysis;
- Pollution, nuisances and impacts;
- Environmental economics;
- Environmental policy and society;
- Water, soil and air;
- Water quality in watersheds - Aquatic ecology;
- Water treatment;
- Modeling of hydroecosystems;
- Water Management.

Master in Transport and Sustainable Mobility (TMD)

- Energy and climate change;
- Transport externalities: elements of analysis and calculations;
- Environmental and transport economics;
- Sustainable development ;
- Sustainable transport;
- "Transport and sustainable mobility" integrative project.

Civil engineering cycle (GC)

- Engineering geology;
- Load hydraulics and free surface hydraulics;
- Hydrology and hydrogeology;
- Road infrastructure;
- Building energy;
- Environment (EIA);
- River hydraulics and watercourse development;
- Maritime hydraulics and port engineering;

- Advanced Geotechnical Engineering;
- Railway infrastructure and remote-controlled systems;
- Land use planning and suitability for urbanization;
- Bridges and crossing structures.

End-of-studies projects

- Sanitation and health safety: application on a pilot case – STEP Ain Aouda;
- Valorization of wet pomace for feeding boilers;
- Biochar and biogas treatment;
- Activated sludge and MBBR fluidized bed for wastewater treatment;
- Physico-chemical characterization of industrial liquid waste and proposal of treatment solutions;
- Numerical simulations of supercritical flows at the location of narrowing channels: taking into account friction, dispersion and turbulence;
- Route of the Rabat-Fez high-speed line;
- Study of the construction of a crossing structure on the El Qati valley as part of the protection against flooding of the natural, architectural and built environments of Ighil N'Oumgoune;
- Sidi Abbou Dam – Hydraulic, hydrological study, sizing and verification of static and seismic stability (embankment dike system);
- Sizing of a reinforcement solution for the Wave project excavations in Tangier;
- Study of a wastewater treatment plant;
- Physico-chemical characterization of sludge from OCP WWTPs: Assessment of agronomic and environmental quality.

Research projects and doctoral theses

- Anti-bacterial and anti-viral coatings from marine waste (research project);
- Treatment of water contaminated by vegetable water using bio-sourced adsorbents (research project);
- CO₂ sequestration by sponge biomass (research project);
- New approach to formulating clay-based geo-polymers for additive manufacturing (research project);
- Synthesis of bio-sourced cementitious materials for construction using additive manufacturing (research project);
- Cellulose nanocrystals for the design of biodegradable plastics (defended doctoral thesis);
- Food packaging and catalyst by modification of crustacean shells (defended doctoral thesis).

Patents

- Antibacterial and antiviral adhesive films based on crosslinkable viologens (A. El Kadib, N. Katir, M. Boundor, MA Benzaouia, National Patent MA. N°60439. 05/15/2023).
- Sprayable antibacterial and antiviral formulations for surface coatings (A. El Kadib, M. Bousmina, MA Benzaouia, N. Katir, M. Elfahime, National Patent MA. N°58510. 11/21/2022).
- Construction process based on monolithic structure technology (Abderrahim Belabid, Hajar Akhzouz, Hanane Elminor, Hassan Elminor. 12/30/2022).

Scientific publications

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- O. Benmoussa "Population and Economic Development: A Counterintuitive Relationship for a Sustainable World". International Journal of Advanced and Applied Sciences 10(3), (2022), pp. 14-25, 2023
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- N Wronotska, * N Katir, M Nowak-Lange, A El Kadib, K Lisowska. Biodegradable Chitosan-Based Films as an Alternative to Plastic Packaging. Foods, 12 (2023) 3519
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- M. El Kadiri, T. El Assimi, P. Thébault, A. El Meziane, S. Royer, A. El Kadib, G. Gouhier, * M. Lahcini. * Bismuth Nanoparticles Supported on Biobased Chitosan as Sustainable Catalysts for the Selective Hydrogenation of Nitroarenes. ACS Appl. Nano Mater., 6 (2023) 4017-4027
- S. Blilid, M. Boundor, N. Katir, M. El Achaby, M. Lahcini, JP Majoral, M. Bousmina, A. El Kadib. * Expanding chitosan reticular chemistry using multifunctional and thermally-stable phosphorus-containing dendrimers. Macromolecules, 56 (2023) 1223-1235
- A. El Kadib, N. Wronotska, K. Lisowska, A. Anouar, N. Katir, K. Miłowska, B. Bielska, M. Bryszewska. Functional Bio-Based Chitosan Films: From Material Design to Biological Properties. In Functional Materials in Biomedical Applications Editing. Jenny Stanford Publishing, 2023, eBook ISBN 9781003411468
- E. Boutrouia, T. El Assimi, Mr. Raihane, R. Beniazza, H. BenYoussef, Mr. Khoulood, Mr. Hassen V. Baouab, A. El Kadib, Mr. Lahcini. * Polymethyl methacrylate-g-carboxy-methylcellulose as an amphiphilic coating material for slow-release fertilizer. Prog. Org. Coat., 172 (2022) 107102
- A. Anouar, A. Grirrane, E. Alvarez, N. Katir, A. Firstly, H. Garcia, * A. El Kadib. * Nanosized copper stabilized on ternary P, N, S-doped graphene from chitosan shellfish waste: preparation and catalysis of single and double A₃-type amine coupling. Materials Today Sustainability, 18 (2022) 100109
- N. Hammi, S. Chen, A. Firstly, S. Royer, H. Garcia, * A. El Kadib. * Shaping MOF oxime oxidation catalysts as three-dimensional porous aerogels through structure-directing growth inside chitosan microspheres. Green Chem., 24 (2022) 4533-4543
- N. Hammi, S. Chen, C. Michon, S. Royer, * A. El Kadib. * Cu nanoparticles embedded on reticular chitosan-derived N-doped carbon: Application to the catalytic hydrogenation of alkenes, alkynes and N-heteroarenes. Mol. Catalysis, 519 (2022) 112104
- A. Dra, K. Khallouk, K. Tanji, I. El Mrabet, Y. Fahoul, B. El Fathi, A. Arrahli, A. El Gaidoum, L. Mardi, A. Taleb, A. Chaouni, A. Kherbeche. Removal of Crystal Violet Dye from Aqueous Solution Using Oued Sebou Sediment (Fez-Morocco): Box-Behnken Optimization and

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- A. Ksakas, A. Arrahli, A. Dra, Y. Fahoul, M. Iboustaten, A. El Gaidoumi, K. Tanji, A. Kherbeche. Kinetic, equilibrium, and thermodynamic studies of heavy metal removal from aqueous solutions by natural material from Morocco. Euro-Mediterranean Journal for Environmental Integration DOI:<https://doi.org/10.1007/s41207-022-00298-3>
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Events and activities

CLUB WE GREEN IN ACTION: » IMPROVE THE IFRANE NATIONAL PARK: LET'S OPEN OUR EYES! »



Saturday October 28, 2023; the “We Green” club of students from the Euromed University of Fez (UEMF) organized an awareness day for the benefit of its members through the visit of several environmental centers as well as a cleaning action in the national park from Ifrane.

As part of these social activities, the “We Green” club kicked off this day aimed at raising awareness among the general public regarding environmental issues with the main objective: To encourage reflection around environmental issues, create ecological habits through a cleaning action and an awareness of biodiversity issues through a visit to the Ifrane national park, its fish farming station in Ras El Mae and its cedar house. The day was marked in particular by a cleaning action in the forest of the Zerouka I water body of Ifrane with the aim of reducing the negative impact of waste and residues which affect the environment.

Note that Zerrouka I is a small, shallow drainable artificial fish pond. It is located on the Zerrouka wadi (or Zrouka), the main tributary of the Tizguite wadi. The dike is located approximately 300m from the source, so that the waters from it flow directly into it. The reservoir is limited by a concrete wall, at least on the west bank. The waters of the spring are also used to supply the city of Ifrane with drinking water.

At this body of water which is an integral part of the Oued Tizguite Ramsar Site; The vegetation is not very varied (around fifteen species with a wide geographical distribution) and is very limited in space, the edges of the lake being concreted and mowing is frequent.

It is a fairly protected trout body of water, somewhat interesting for birds. It is home to few winter residents (less than 400 birds), the population being mainly composed of divers: coots and crested coots, little grebes, pochards, tufts and nyrocas, with sometimes shovelers and/or mallards. Among the breeders, the Eurasian Coot (20-25 pairs), the Crested Coot (around 10 pairs) and the Little Grebe (5-8 pairs) are the most regular.

Finally, it should be noted that the Euromed University of Fez is a public utility, non-profit institution with an eco-campus meeting international standards which constitutes a pleasant and stimulating environment for its students coming from more than 40 nationalities.

UEMF winners are equipped with training on soft skills, study skills, life-skills and professional skills and this profile; based on several pillars; allows students to acquire numerous skills linked in particular to multilingualism, multiculturalism, innovation and entrepreneurship, the digital environment, international mobility, and sustainable development in addition to the pillar of social responsibility and eco-citizenship through which we instill in students the values of respect for the environment, sustainable development and civic responsibility.

<https://www.oujdacity.net/national-article-157654-fr/club-we-green-en-action-sublimez-le-parc-national-di-frane-ouvrons-les-yeux.html>

<https://premiumtravelnews.com/2023/10/30/club-we-green-parc-national-di-frane/>

Hiking Taza Region - Chaara Cave UEMF STUDENTS

<https://www.youtube.com/watch?app=desktop&v=WbgyU5oYeZY>

<https://www.youtube.com/watch?v=erDEg1GsDyc>

The “Practical Workshops” of the FEMG and the EEMGC Master GEGE 1st year and GC 2nd year



As part of the practical illustration of the courses “Disturbed Natural Systems” & “Ecology and Sustainable Development” for the benefit of respectively the students of the 1st year of the Master “Environmental Engineering and Water Management” and the 2nd year of the civil engineering cycle, a field trip was carried out on January 29 and 30, 2020.

The first day was devoted to the study of the Moulay Bousselham lagoon (Merja Zerga), a wetland essential to the balance of ecosystems.

The different components of the biodiversity of this lagoon were reviewed, commented on and analyzed with systematic reference to the lessons taught. The rest of the day was devoted to visiting the archaeological site of “Lexus”, a city founded by the Phoenicians in the 12th century BC. BC and one of the oldest urban centers in the western Mediterranean. The Site Curator explained to the civil engineering students the techniques of construction, development, design and use of the components of this ancient Phoenician city.

The second day was devoted to visiting the Tangier Marina where the students were welcomed by the President of the SAPT (Société d’Aménagement du Port de Tangier-ville)

who indicated that the port of Tangier-ville is among large-scale projects contributing to establishing the city of the strait as a destination of choice for pleasure and cruise tourism on an international scale and in the Mediterranean basin in particular. A presentation of “Tanja Marina Bay” by the Marketing and Strategic Intelligence Director of SAPT was held, followed by a visit to the “marine” museum, as well as the presentation of the rehabilitation and enhancement program for the walls. antiques.

The students were also able to visit the Marina reconversion site, a project which perfectly materializes the slogan “Give the port back to the city, unite the port and the city”. Explanations were provided by the engineers responsible for carrying out the project and by the site divers. A fruitful student-engineer exchange then focused on the methodologies used in this reconversion.

Ultimately, a visit to the operational part of the Marina marina took place, detailing the technical aspects of its on-shore and off-shore components presented by the Port Director who also gave an overview of the history works, the developments carried out and the work in progress to return the marine domain to the Tangier population and make this city an essential destination for pleasure and cruise tourism in the Mediterranean basin.

<https://ueuromed.org/actualites/ateliers-workshops/les-practical-workshops-de-la-femg-et-de-leemgc-master-gege-1ere-0>

Canyoning at Ait Smail waterfall



A canyoning day for lovers of nature and great sensations. Activity reserved for non-beginners.

<https://ueuromed.org/evenements/activites-des-etudiants/canyoning-au-cascade-ait-smail?page=1>