

**The Danube Delta:
A natural laboratory for trans-disciplinary
education, research, innovation and
development**

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The Danube Delta

- **A European and global ecological treasure**
- **A rich, diverse flora & fauna**
- **98% of the European aquatic fauna**
- **3400 animal species**
- **160 fish species**
- **300 bird species – Arctic, Siberian, Mongolian, Chinese, Mediterranean, European**

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The Danube Delta

- **Abundant and diverse natural resources**
- **1150 plant species**
- **Over 4178 square Km Delta**
- **A Danube Delta Biosphere of 5800 square Km**
- **Significant cultural diversity**
- **Source of energy**
- **Corridors of energy transport**

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The Danube Delta

- **The Danube from the Black Forest to Caraorman Forest**
- **Romania & the Danube Delta**
- **Bridge between EU, the Black Sea region**
- **Regions with diversity of cultures and traditions**
- **Rich in natural & human resources**
- **Aspiring for higher education, development**
- **Ties with the EU and the Euro-Atlantic communities**

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The Danube Delta & Environs

- **Limited knowledge of the Delta, Black Sea regions**
- **In the Euro-Atlantic educational, research and policy communities**
- **The Danube Delta trans-disciplinary project**
- **Involving universities, the business community & NGOs**

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The Danube Delta Project

- ***The Danube Delta Institute of Advanced Trans-Disciplinary Studies (DDIATS)***
- ***The Danube Delta International Summer School of ATS (DDISSATS)***
- **To stimulate knowledge generation, translation, transmission**
- **Application, via education, research, innovation, development**
- **Human capital development**

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The Danube Delta Project, *continued*
DDIATS & DDISSATS

- **To close the development gap between the region and the world**
- **Open up new opportunities for collaboration among**
- **Students, scholars, professionals, business, policy makers,**
- **Of the region as well as with those from EU and USA**
- **Across disciplines & continents**

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The Danube Delta Project, *continued*

- **Focusing on history, cultures, & traditions**
- **Ecology**
- **Energy**
- **Health systems' strengthening**
- **Technology, green growth, and sustainable development**

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The Danube Delta Project, *continued*

- **Identify and secure educational, human, financial resources**
- **For bilateral & multilateral aspects of the projects**
- **Specify all resources necessary for implementation**
- **Involve public, private, institutions, governments, foundations, & benefactors for financing the projects**
- **Produce a projects' hierarchy & implementation timeline**
- **Agree on a leadership workgroup**

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The Danube Delta Project:
Anticipated Outcomes

- **Knowledge generation, innovation, human capital development**
- **Energy, ecology, green growth, sustainable development**
- **Science, technology, innovation, & health systems' strengthening**
- **Measuring societies' progress in tandem with OECD**

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The Danube Delta Project, *continued*
Energy, Ecology, & Health

A Public/Private/NGOs Partnership:

- **Governments-ministries of health, education, defense**
- **Academic centers, universities, professional organizations**
- **OECD, EU CDC, US CDC, USAID, WB,WHO, NATO**
- **European Observatory on Health Systems**
- **business community, oil, gas, alternative energy industries**
- **Foundations and NGOs**
- **The media**

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The Danube Delta Project
Energy, Ecology & Health, *continued*

- **Ecology – water, air, and soil safety**
- **Energy & Ecology**
 - **deep sea gas & oil exploration, preventing disasters**
 - **fossil fuel v. wind, solar, geo, other**
- **Health**
 - **Communicable diseases (CD) Avian flue prevention project**
 - **Non-communicable diseases (NCDs) & ICT projects**
 - **Health systems' management & strengthening**

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The Danube Delta Project,
Anticipated Outcome, *continued*

- **Enhance educational, employment & scholarly opportunities for**
- **Young people, scholars, development communities of the region**
- **Enhanced collaboration with counterparts in the EU & USA**
- **Close the knowledge, understanding, & action gaps between**
- **The region, the Euro-Atlantic community**
- **Deliver innovative, education, research, development projects**
- **The free flow of people, ideas, goods, & services**

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The Danube Delta Project, *continued*,
Innovative Educational Laboratory

- **21st Century educational transformations**
- **A dynamic process of teacher & student learning together**
- **In a relationship of trust**
- **Teaching/Learning values & criteria rather than figures & facts**
- **Think, decide, make choices rather than memorize**
- **Generating trust through promoting students' own initiatives**
- **Stimulating their creative impulses, ingenuity, imagination**

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The Danube Delta Project,
Innovative Educational Laboratory, *continued*

- **Embracing information communication technology (ICT)**
- **Discern fact from fiction using empirical & scientific evidence**
- **Technology is no substitute for the individual's ability to reason**
- **Intellectual & ethical tools complimenting each other**
- **Value system-based decisions**
- **Inspiring, leadership, commitment generating, not authoritarian**
- **An education that puts some heart into thought**

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The Danube Delta Project,
Innovative Educational Laboratory, *continued*

- **Preparing students not for a job, but for any job**
- **How to obtain knowledge about any issue**
- **Understanding & applicability of interdependent variables**
- **Systemic, systematic & integrative thinking & acting**
- **Mindful of the ecology, energy, health, development equilibrium**
- **Profit motives and societal responsibilities**

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The Danube Delta Project, *continued*

- **Nurture human ingenuity and entrepreneurial spirit**
- **Business enterprises key to translating knowledge/ideas into jobs**
- **Government support needed for innovative networks**
- **High speed broadband connections**
- **Improvement of markets & intellectual property rights**
- **Governance policies for innovation**
- **Access to finance essential to develop projects and markets**

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The Danube Delta Project's Evaluation
DDIATS & DDISSATS

- **Transparent, qualitative & quantitative**
- **Educational, research, services, development projects**
- **Annual public reports, recommendations, & follow-up actions**
- **Each projects' annual report in the English language, and in**
- **The languages of all partners**
- **Posted on a timely & regular basis on all partners' websites**
- **Open to feedback from all involved and affected by the projects**

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References

Sorel, E. & Padoan, P.C., *The Marshall Plan: Lessons Learned for the 21st Century*, OECD Press, Paris, 2008

OECD, “OECD Ministerial Report on the OECD Innovation Strategy” Ministerial Council, 27-28 May 2010, Paris

Arias Sanchez, O., “The Key to New Worlds,” Laureate Leadership Summit, Ft. Lauderdale, Florida, 13 June 2010

Gaddis, J.L., “The Interdependency of Variables”, Balliol College lecture, Oxford University, 5 February 2001

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References

Balaban, A., Daianu, D., Gheorghiu, E., Haiduc, I., Ruckenstein, A., Sorel, E.,
Romanian Institute for Advanced Studies – Bucharest (RIAS),
Academica, V. 193-194 pp. 50-52 (Bucharest: December 2006)

Sorel, E., editor, *21st Century Higher Education: Quality, Leadership, Innovation*
The Bucharest Consensus, October 2010

Lubin, D.A. & Esty, D.C., “The Sustainability Imperative,” *Harvard Business*
***Review*, www.hbr.org/2010/05/the-sustainability-imperative/ar/pr**
(accessed May 2010)

Aghion, P. et al, “Academic freedom, private sector focus and the process of
innovation”, *The Rand J of Economics* Vol. 39, issue # 3, pp. 617-635,
2008