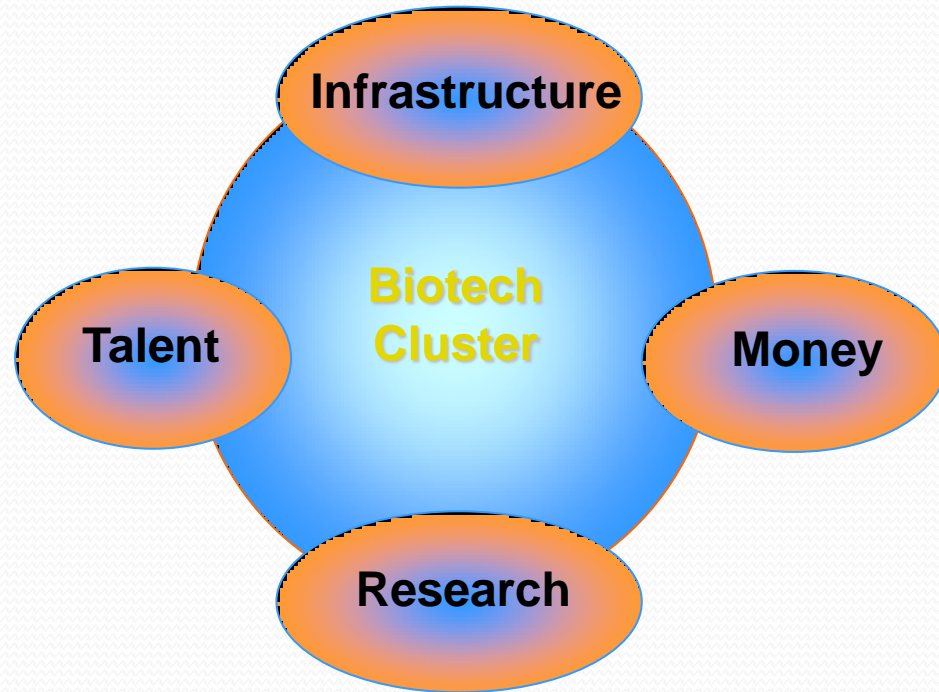




Biotechnology - Life Sciences Cluster in South East Europe

What Is A Cluster?

- “A group of industries and organisations that are linked together in buying and selling relationships, or who share the same infrastructure, customers or skills base and whose linkages enhance competitive advantage”.
 - Prof. Michael E. Porter, Harvard Business School.
- Schwartz (2004) “ Cluster is a regional concentration of industries or firms that gain advantages through such concentration”.



Key elements of a
Technology Cluster

EU Cluster Policy

- Life sciences and biotechnology have become pivotal to certain sectors of the EU economy.
 - Biotech activities include **Healthcare and Pharmaceuticals**, but also **Environmental Sciences**, industrial processing and primary production / agro-food.

been prepared jointly by the DGs Research (RTD) and Enterprise (ENTR), although it is entirely financed by the KBBE programme at DG RTD. The consultant company PriceWaterhouseCoopers (PWC) has been selected for carrying out the research work by using an elaborated method agreed upon by all participants. First results will be presented during a workshop on 10th December 2010, and the final report will be available in January 2011.

The special method consists of several stages: first, a large set of potentially useful indicators is created; next, a series of bioclusters is visited and analysed using all available data and interview results; then, the original list of indicators is revised and adapted; finally, to validate the final selection, the revised set of indicators is applied to another series of bioclusters, this time even in North America and Japan. The majority of bioclusters had been chosen among those representing mainly activities in KBBE-relevant areas. The results are also applied to establish the concept of a 'bioregion', or 'supercluster', meaning a geographical entity comprising several bioclusters and, sometimes, reaching across regional and even national borders.

The selected bioclusters are (first round/second round):

Cambridge Cluster (UK)
Lebensmittel-Cluster Austria
BioCat (Spain)
Ass. industries et agro-ressources (France)
Biotech Umea (Sweden)
Ghent Bio-Energy Valley (Belgium)
Oslo Teknopol (Norway)
Bioval (Spain)
Genopôle Paris (France)
Saint-Hyacinthe Technopolis (Canada)
Medicon Valley (Sweden/Denmark)
Food Valley (Netherlands)
Biovalley (Switzerland/France/Germany)
San Diego Cluster (USA)
Biotech-Region München (Germany)
Heidelberg Biocluster (Germany)

Regional Biotechnology

Establishing a methodology and performance indicators for assessing bioclusters and bioregions relevant to the KBBE area

03 February, 2011

European Cluster Policy Group

Consolidated Set of Policy
Recommendations on Four Themes

Biotechnology Clusters in Europe

EuroBioWest

EuroBioNorth

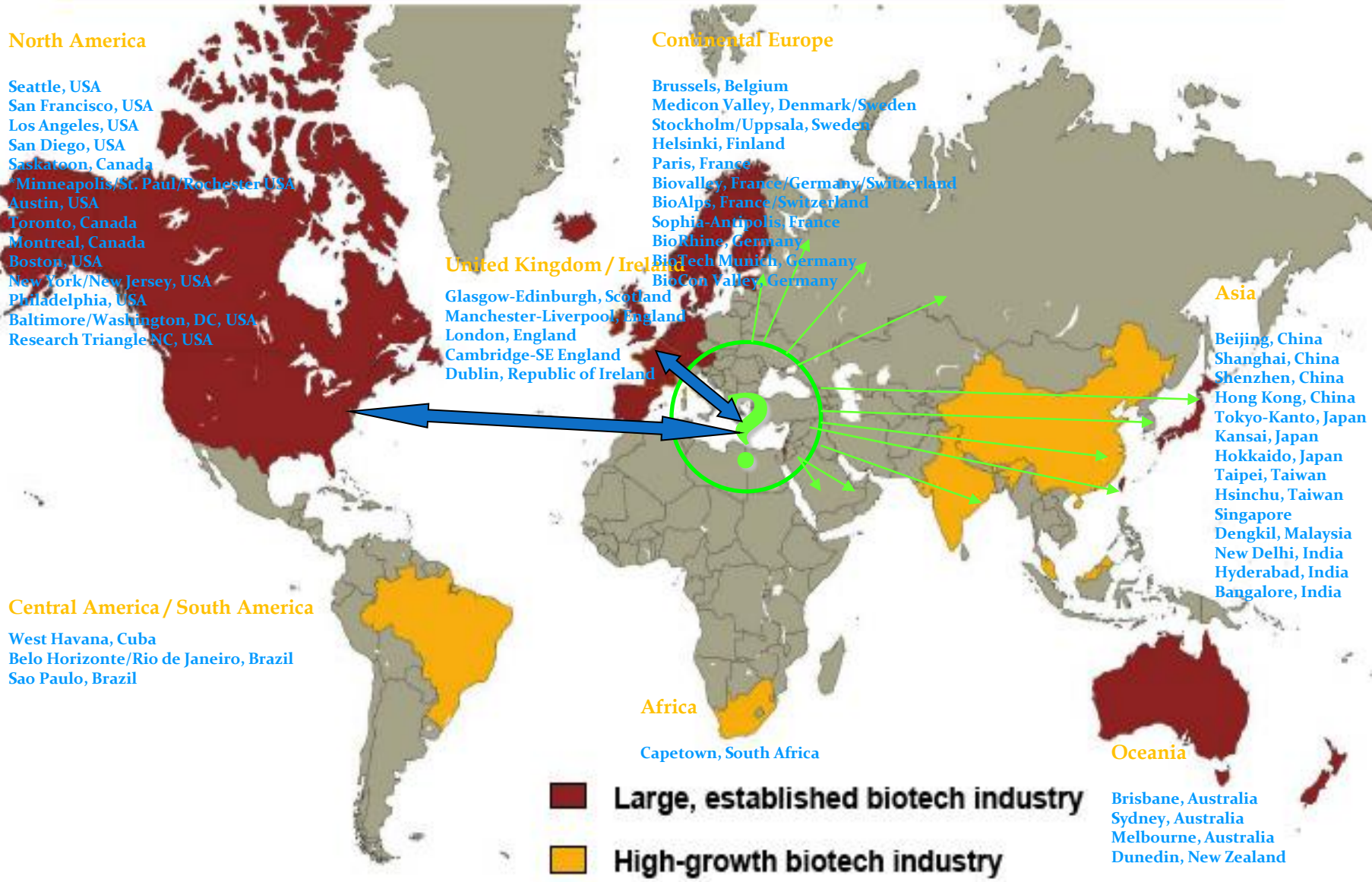
EuroBioEast

EuroBioSouth

- Cambridge cluster – UK
- Bio-Cat – Spain
- Ass. Industries & Bioresources – France
- Biotech Umea – Sweden
- North Bio-Energy Valley – Belgium
- Oslo Technopol – Norway
- Bioval – Spain
- Genopole Paris – France
- Medicon Valley – Sweden / Denmark
- Food Valley – Netherlands
- Biovalley – Switzerland / France / Germany
- Biotech Region Munchen – Germany
- Heidelberg Biocluster – Germany
- Maastricht Biovalley – Netherlands / Germany / France

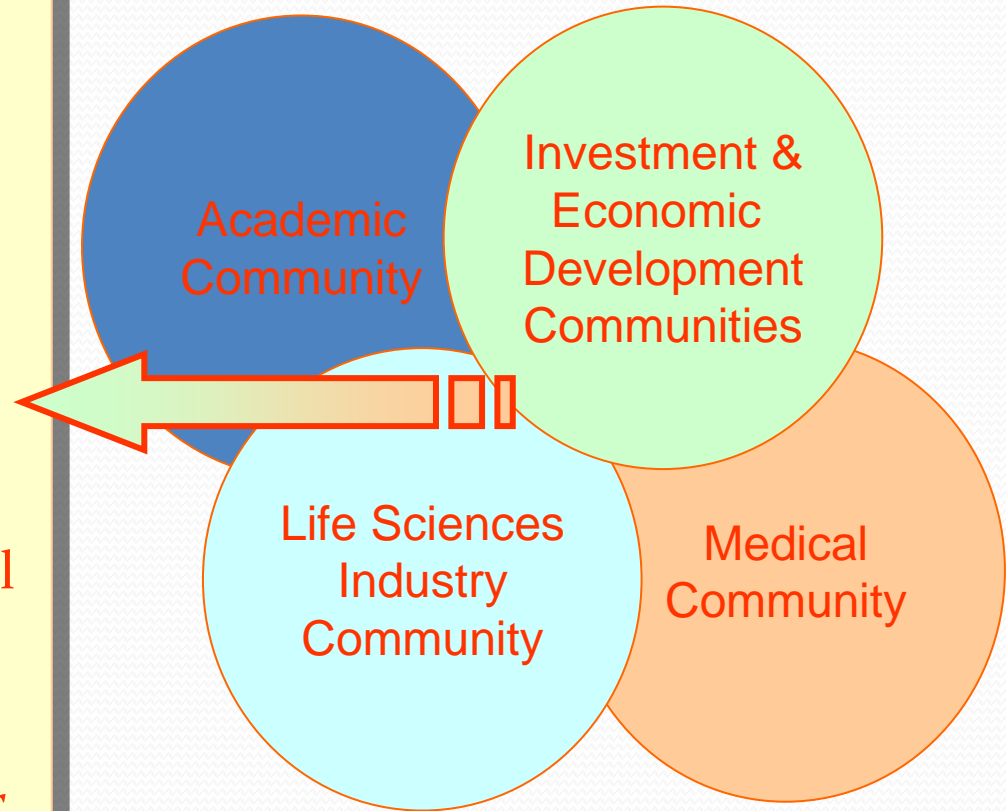
?

Established Biotech – Health Clusters



Strategic Priorities

- Create a World-class **Biotech Cluster** in SE Europe located in Greece
- Establish a Clinical Investigation Center and an Environmental Sciences Institute and as the nucleus of the Cluster
- Strengthen the Competitive Position of the Regional Biotech Academic and Research Community
- Support Regional Human Capital development
- Fund Early-Stage Companies to improve Innovation Capacity
- Serve as a Convener, Coordinator & Facilitator for the SEE Life Sciences Industry



Life Sciences-Biotech Cluster

A Knowledge Cluster in Greece – Multi-disciplinary Approach



Health Sciences & Environment

Molecular Medicine – Gene Therapy

Clinical Investigation - Pharmacology

Immunotherapy – Targeted Therapies

Environmental - Air Pollution Health Effects



Biotechnologies

Stem Cells - Transplants

Medical Devices, Small Molecule Pharma

Biosensors - Diagnostics



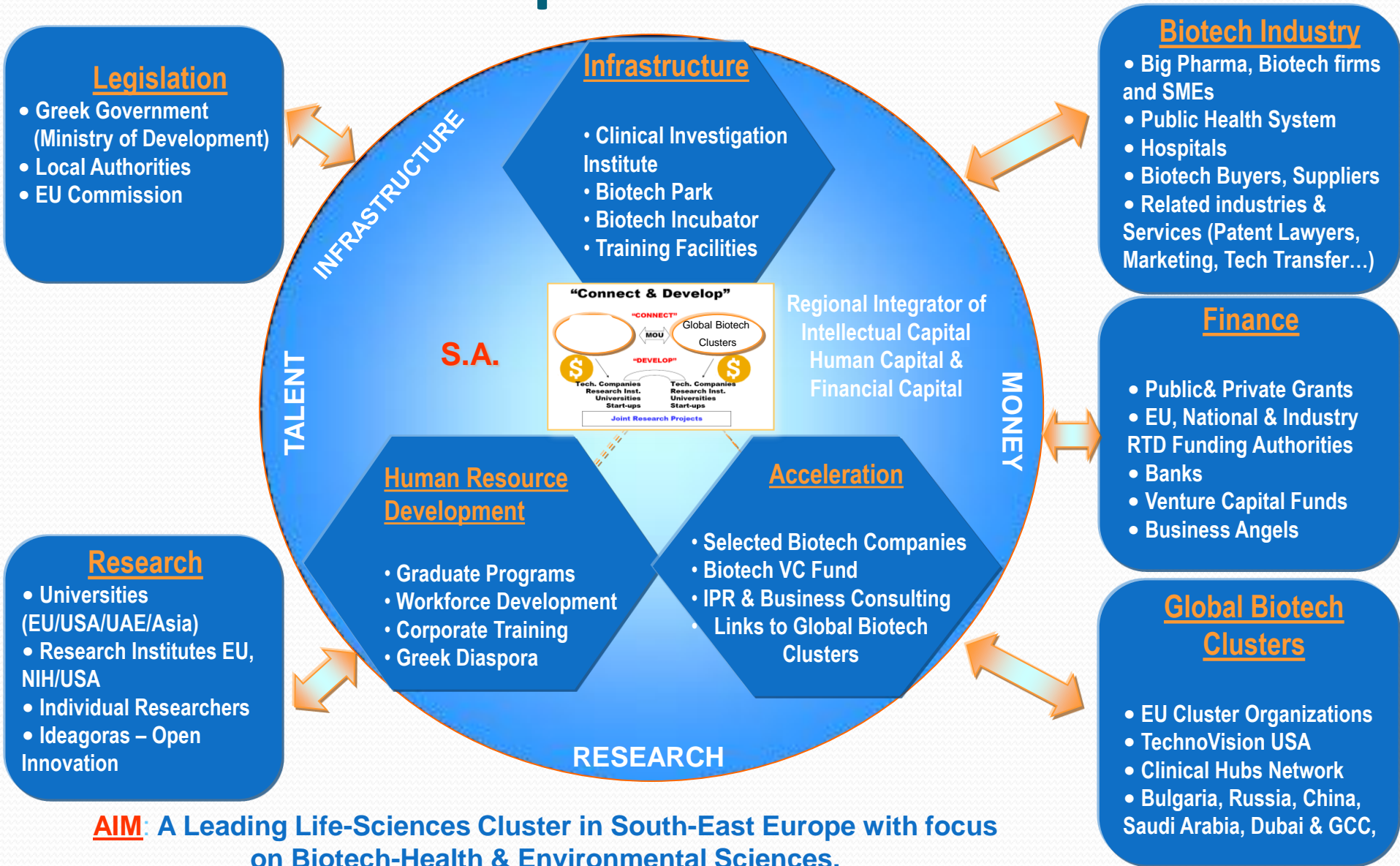
Information Sciences

Bio-informatics

Biomedical Signal Processing

Micro-Array Development

Participants in the Cluster



AIM: A Leading Life-Sciences Cluster in South-East Europe with focus on Biotech-Health & Environmental Sciences.

BIONIAN - Network Participants

A. PROPOSED FACILITATOR

ΑΣΤΙΚΗ ΕΤΑΙΡΕΙΑ ΒΙΟΤΕΧΝΟΛΟΓΙΑΣ, ΒΙΟΕΠΙΣΤΗΜΩΝ ΚΑΙ ΠΟΛΙΤΙΣΜΟΥ

B. ENTERPRISES

- B1. MERCK
- B2. GENZYME
- B3. PHARMASERVE LILLY
- B4. GLAXO SMITH KLINE
- B5. PFIZER
- B6. SANOFI-Aventis
- B7. VIDA VO
- B8. CELLGENEA
- B9. PHARMATHEN
- B10. MICRO'S LEADER

BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY INFORMATICS / TELEMEDICINE
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOTECHNOLOGY / BIOPHARMACEUTICALS
BIOMEDICAL INFORMATICS HEALTHCARE SOFTWARE APPLICATIONS

C. ACADEMIC / RESEARCH ORGANISATIONS

- C1. CHOREMEION RESEARCH LABORATORY
UNIVERSITY OF ATHENS MEDICAL SCHOOL
- C2. EVGENIDEION INFIRMARY
UNIVERSITY OF ATHENS MEDICAL SCHOOL
- C3. PASTEUR INSTITUTE
- C4. ENVIRONMENTAL RESEARCH LABORATORY
INSTITUTE FOR NUCLEAR TECHNOLOGY &
RADIATION PROTECTION
DEMOCRITOS NATIONAL SCIENTIFIC RESEARCH CENTER
- C5. ATHENS INFORMATION TECHNOLOGY

BASIC & CLINICAL BIOMEDICAL RESEARCH

CLINICAL / TRANSLATIONAL BIOMEDICAL RESEARCH
BASIC & CLINICAL BIOMEDICAL RESEARCH
NUCLEAR RESEARCH REACTOR CENTER
HEALTH PHYSICS & RADIOHAZARDS
ENVIRONMENTAL HEALTH RESEARCH & RADIOACTIVITY LABS
SOLAR / ENERGY SYSTEMS RESEARCH
BIO-INFORMATICS & BIOSENSORS / COMPLEX SYSTEMS ANALYSIS

D. TECHNOLOGICAL ORGANISATIONS

- D1. HELLENIC ELECTRONICS QUALITY ASSURANCE CENTER
& HIGH-END TECHNOLOGY LABORATORIES

TESTING & CERTIFICATION ENVIRONMENTAL BIOHAZARDS,
EMC COMPATIBILITY, BIO-ELECTRONICS & MEDICAL DEVICES

E. OTHER ORGANISATIONS

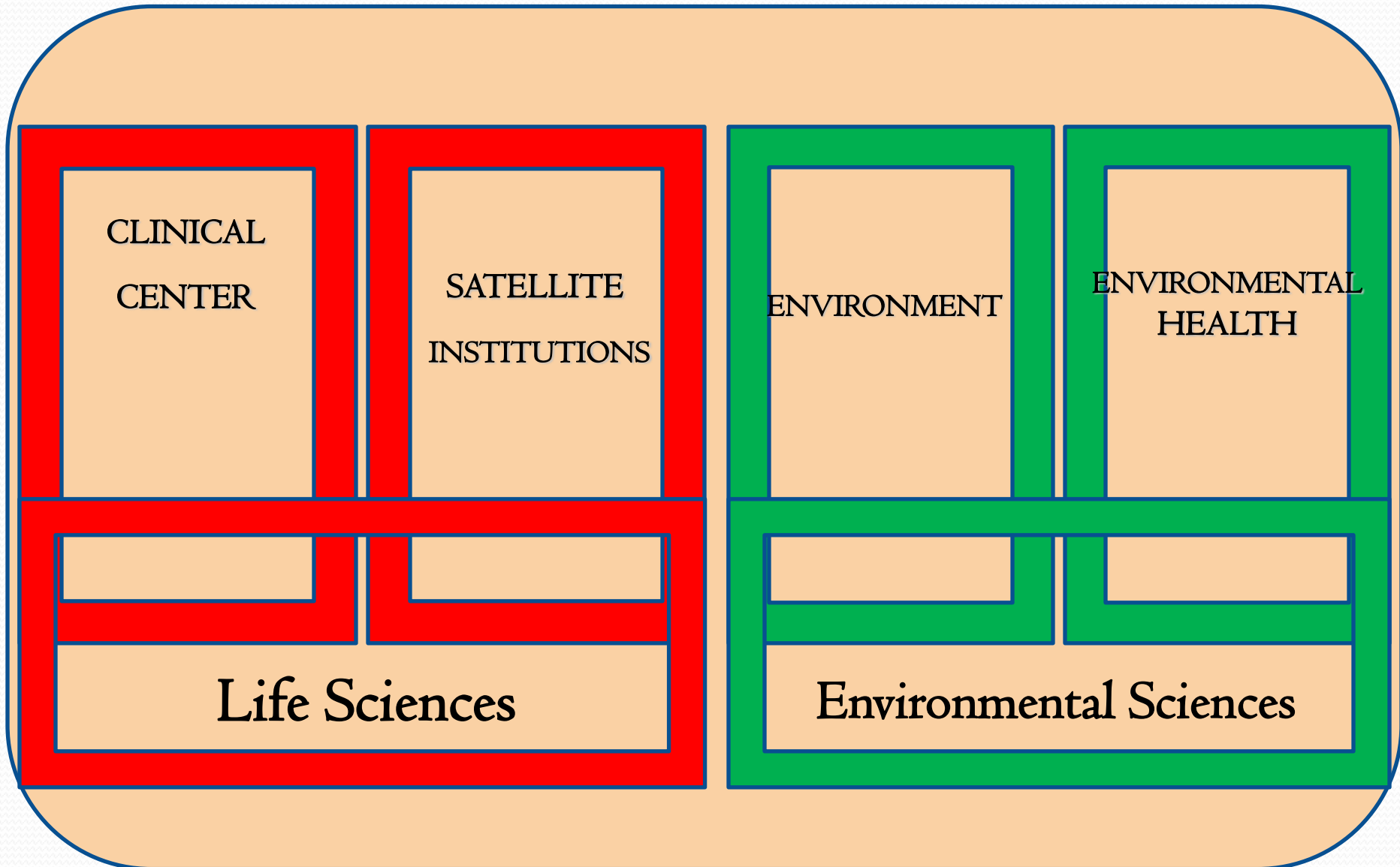
- E1. HELLENIC BIOTECHNOLOGY ASSOCIATION
- E2. HELLENIC ASSOCIATION OF PHARMACEUTICAL COMPANIES

BIOTECHNOLOGY INNOVATIVE DRUG DISCOVERY
BIOPHARMACEUTICALS MEDICINES FOR HUMAN USE

National and International Presence

- The leading brand name in Biotechnology in Greece and Southeast Europe
 - *Society for Biotechnology – Biosciences and Culture*, <http://www.biosbbc.org/>
- National Contact Point in the EU-funded projects for Health and Biotechnology
- Exclusive Greek representative in
 - EuropaBio (EU) – Member in the Board of Directors
 - European Federation of Biotechnology (EFB) – Regional Office
 - BiO (US)
- Partnerships and MoUs with major Biotech firms, Clusters and Academic and Research Institutions worldwide
- Organization of the only International Biotechnology Conference (IGBF) in Greece for the last 5 years, the highest quality scientific Congress in the region, attracting Nobel laureates and the world's most prominent figures in Science
- Outstanding Board of Scientific Counselors devoted to Cluster development
- Excellent prospects of expansion and potential for development based on dynamic presence, fruitful multilateral collaboration and fine reputation

The Nucleus of the BIONIAN Cluster



BIONIAN Life Sciences Cluster

Operational Strategy and Business timeline

2012 - 2024



Cluster Programs At-a-Glance

Cluster Infrastructure Development Program

Biotechnology Park

Clinical Investigation & Environmental Health Institutes

Biotechnology Incubator

Educational Facilities, Conference, & Hosting



Life Sciences Acceleration

Biotech VC Fund
Investor Risk Reduction

IPR & Business Consulting Services

Product/Prototype Development

Alliances with Global Biotech Clusters



Education & Workforce Development Program

Graduate Programs

Cooperative Research

Workforce Development

Technology Transfer



Horizontal Management Activities

Coordination, Facilitation, Cluster-Factor Alignment, Global Marketing & Reach

BIONIAN Cluster Strategic Objectives

	Today	...in 5 years	...in 12 years
Number of Biotechnology Jobs in Greece	Over 800	1600	~5000
Innovative Biotech start-ups	~15	50	At least 150 new Biotech start-ups with growth potential
IPR Development No. of Patents	196 (EU & US Patents)	400	~1200
Self-sustainability of the cluster	€5 m Seed Funding	Fully funded Cluster Investment	Financially sustainable, self-sufficient cluster



Revenue Streams

Predictable Income	High Risk – High Reward
Clinical Investigations & Trials	Revenue from Technology Transfer & IPR
Revenue from Incubator	Revenue from VC Fund
Real estate income	Research (EU projects, National & Industry-funded)
Education, Corporate Training & Certificate Programs	Environmental Research
Revenue from Business Consulting	Renewable Energy Sources (RES) RTD
Environmental Studies, Products & Services	Other
Renewable Energy Sources (RES) Studies & Applications	

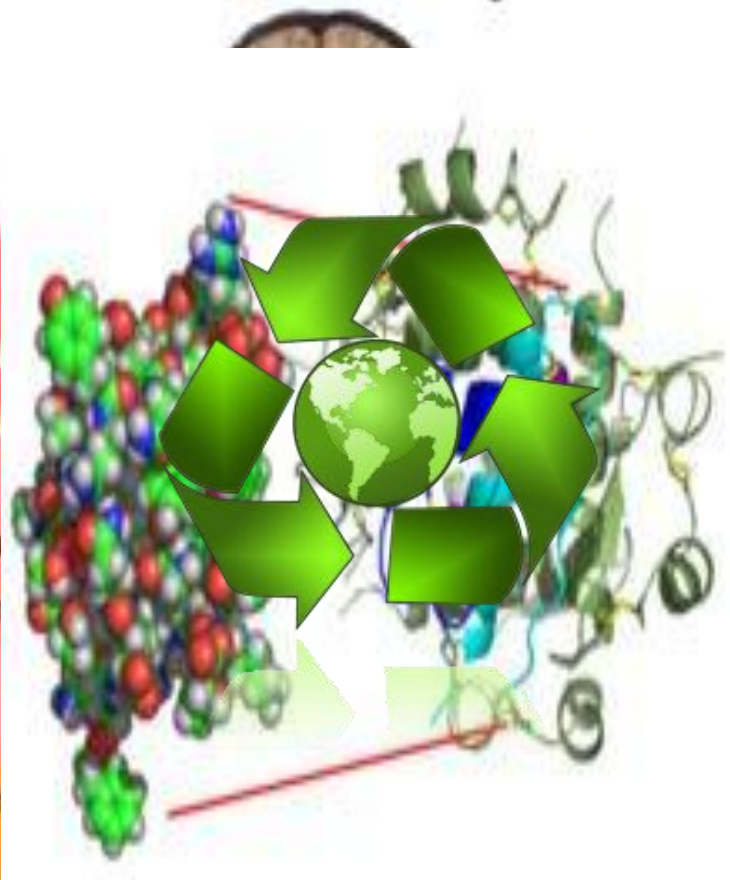
Cluster Structure

Health effects of pollution

Air pollution



Nerve damage
Lead
Particulate
Ozone
Volatile organic compound



Water pollution



Microorganisms
Pesticides

Soil contamination



Nausea
Skin irritation



BIONIAN - Life Sciences Cluster

*The Integrated Hellenic Pathway to
Excellence and Innovation in
State-of-the-Art Medical Research &
Multidisciplinary Applied Biosciences*

Society for Biotechnology - Biosciences and Culture

<http://www.biosbbc.org/>