

# **Biopolicy for a New Society of Hope**

## **Guidelines and Paradigms for Change – the Role of Education**

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**Abstract:** In the face of accelerating climate change, the lack of enlightened leadership makes the need for development strategies with a vision more urgent. We have unlimited options to halt the advancing environmental damage, to reverse unemployment, to create dynamic networks of education with the participation of every citizen on the planet. The technology to secure enough food and safe water resources for everyone is also available. Responsibility for curbing global warming and inspiring a new society of hope does not only lie with our leaders. We all can and should be involved. This is the goal and essence of “biopolicy.”

**Key words:** Biopolicy, education, life-long learning, International University for the Bio-Environment, Green Salary

### **Biopolicy to reverse the crisis in leadership**

Across the globe, leaders have been so preoccupied with the economic crisis that they have been overlooking the true crisis plaguing our planet today: the lack of enlightened leadership and the urgent need for long-term strategies with a vision. Strategies that can lead to peace and development, both globally and locally.

Can we hear the ticking clock of destruction? Time is of the essence, as with every swing of the pendulum, more forms of life disappear. If we take this urgent wake-up call seriously, we still have the time to act. It is time for global action for change.

As a small speck in the universe, planet Earth possesses *bios* – life – the most precious gift. We have unique privileges but also obligations. The dual economic and environmental crises are closely linked, and resolving them will require an unprecedented level of international cooperation. If we are to solve the problems of our world, nations must redirect their efforts away from conflicts over national interests, religion, or ideology towards a unified approach that respects human diversity and the wonder of life on earth.

Global warming and environmental deterioration are not only threatening natural resources and biodiversity, but society as a whole is seriously affected. Natural disasters are more frequent and more devastating, exacerbating global inequality and making fragile economies increasingly vulnerable. Extreme fluctuations in temperature result in freezing weather conditions, or heatwaves and flooding. If we continue on our present path, water scarcity, hunger and the spreading of new diseases will lead to unprecedented waves of migration, economic uncertainty and social unrest, compromising livelihoods and public health, and creating enormous social problems that we cannot even begin to imagine.

Ethical values and a clear vision are our primary responsibility, since we have only managed to make very small reforms on the mistakes of the past. Progress in technology has given us faster killing machines with endless possibilities for destruction, but also more efficient communication methods. Let us use these forms of communication to cease the destruction of life.

We have unlimited options to halt the advancing damage of climate change, to reverse unemployment, to create dynamic networks of education with the participation of every citizen on the planet. The technology to secure enough food and safe water resources for everyone is also available. Green jobs in the renewable energy industry, in emerging technologies, green buildings, transport and infrastructure, resource efficiency, as well as more general environmental projects, including creative initiatives, can inspire every sector of society to contribute to climate change mitigation.

Peace cannot be achieved on a planet ravaged by pollution, hunger, poverty and disease, which are a major cause and effect of global environmental problems. Efforts for local and global development need to deal with environmental problems within a broader perspective that encompasses the factors underlying world poverty and international inequality. Most development efforts for economic progress are structured to meet human ambitions and are simply non-viable. They draw too heavily on environmental resources and future generations will inherit the losses. Responsibility for the transition to a new society does not only lie with our leaders. We all can and should be involved.

The Biopolitics International Organisation (B.I.O.) sets the framework for reforms and strategies that can infuse new thinking and new ideas for the participation of every citizen in the development of paradigms for a society of hope. Through constructive dialogue, with a thesis, antithesis and synthesis of new values, B.I.O. also aims to mobilize world leaders and humanity's collective talent in order to lay the needed groundwork for change. This is the goal and essence of "biopolicy."

### **Bio-education and life-long learning – the essence of biopolicy**

Educational models with the environment at the heart of every academic discipline can inspire policy-makers to foster innovation. A truly integrated environmental education can help us to reach a developmental framework that places people and the planet before profits. By allowing for cultural differences to emerge as the beauty and wealth of our planet, we can seek knowledge and infuse new thinking, encouraging action and change.

Bio-education is crucial. Students, executives, policy makers and the general public must be imbued with an appreciation of life and the urgency of reversing present destructive trends. As a result, bio-education and the possibility to sensitize individuals and communities on environmental, social and cultural issues have always been the driving force behind the promotion and development of biopolicy. Bio-education emphasizes good citizenship and critical thinking in order to enable citizens to behave in environmentally responsible ways and actively participate in environmental decision-making processes.

It is the goal of B.I.O.'s life-long learning initiatives to ensure effective learning by building on previous knowledge experiences and by combining training information and know-how. In this context, we envisage education and learning beyond classrooms and closed spaces, while ensuring contact with nature, people and real-life situations. An essential component is the combination of all means and media available to make learning happen, through multimedia strategies. Our e-learning program also takes advantage of distance education learning opportunities, through all available means, and promotes the diversification of policies and strategies to accommodate the specific needs and desires of specific communities, groups and individuals. The ultimate goal is to build learning communities, in both urban and rural areas, so that all members, young people, adults, senior citizens, are engaged in learning activities, and all local resources are utilized, with local and global development in mind. As a result of lifelong learning, individuals acquire competences that are developed throughout their lifetime and this process contributes not only to individual wellbeing, but gives economic results and improves the life of all stakeholders.

### **International University for the Bio-Environment – I.U.B.E.**

B.I.O.'s e-learning program is part of the work and activities of the International University for the Bio-Environment (I.U.B.E.), created by B.I.O. in 1990. The I.U.B.E. actions the B.I.O. belief that education is the key to enlightening students and teachers in all academic areas to become environmentally conscious and responsible world citizens. It is a truly "universal" initiative, encompassing all educational levels, set up with an ambitious but happening agenda to act as a catalyst, seeking to infuse educational institutions and their graduates with biocentric values and to encourage a deeper, internalized environmental awareness.

The I.U.B.E. is seen as the means by which B.I.O. can vaccinate every human endeavor with a love of bios and impart this message to students, training professionals and decision-makers around the world. It focuses on the dissemination of environmental education to universities and training centers internationally, and to all the disciplines taught within them, rather than offering traditional diplomas or awards. It is designed as an open and distance learning initiative, whereby leading experts, scholars and educators from 160 countries actively engage in the promotion of environmental thinking. Fighting the trend towards over-specialization, the I.U.B.E. seeks to open up all areas of study and training to an appreciation of life on our planet.

The aim is for the I.U.B.E. to become a think-tank for the development of multidisciplinary environmental concepts, beyond the confines of conventional environmental science, leading to a revised educational system with a view to the future. In the framework of the activities of the I.U.B.E., the purpose and responsibility of bio-education, is to uplift the spirit of humanity and to reverse the crisis in values that has resulted in serious environmental deterioration. By providing interdisciplinary models with the environment at the core of every specialty and academic sector, bio-education seeks to apply environmental protection to every human endeavor.

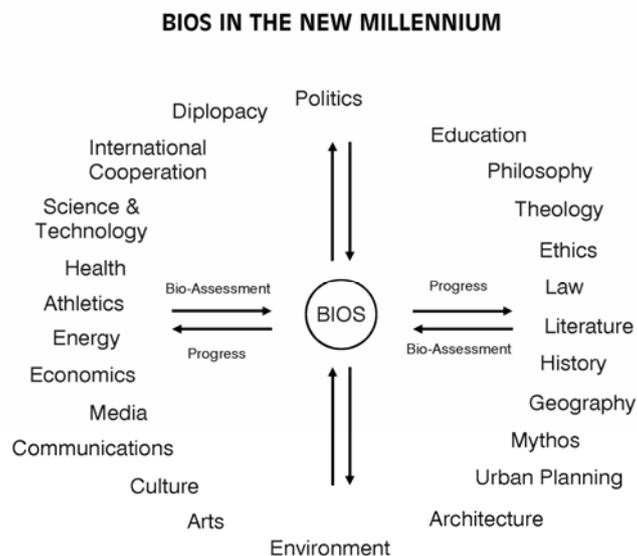
Education is a fundamental right and determines how much a person can engage with and contribute to society. Quality education positively effects health, lives and livelihoods, so investing in education brings individuals and societies enormous benefits, socially, environmentally and economically.

Availability of workers with the right skills is one of the key determinants of success for any business, and of capable and professional public and private services. Environmental education is no exception.

The understanding of changing environmental circumstances and of the fluidity of the concept of environmental protection requires the development of a critical appreciation of the numerous influences affecting the interactions between humanity and the environment. Environmental pollution is an international problem and a matter of vital importance for all. Concern over environmental questions is an international task, particularly for highly developed, industrialized countries. We must acknowledge our individual and social responsibilities and the fact that environmental protection involves confronting conflicting interests. There is a need to balance environmental and economic priorities in order to achieve safe and just global management. Bio-education consolidates awareness of the importance of incorporating the environment in every human endeavor and enables the realization of the interdisciplinary nature of environmental protection.

Stressing the international character of environmental problems and the multidisciplinary nature of the environment is a priority in bio-education. The environment is an integrating concept referring to the sensitivity, experience and culture of each member of society. Environmental quality and quality of life are inextricably linked. Human rights violations, disease, hunger, lack of safe water resources and poverty are more common in areas of severe environmental abuse. Health problems linked to the environment, food subsistence and access to culture and general welfare, including security and peace, are some of the challenges to be faced.

Bio-education should be disseminated as widely as possible with the assistance of educational institutions, businesses, municipal authorities, governments, NGOs and other stakeholders. By promoting joint action in all sectors of society and the economy, a broad consensus about the development of an environmentally-responsible citizenry can be built. The need for good quality training for teachers involved in bio-education cannot be over-stressed. Current inefficiencies in teacher training could pose serious problems in the future. Teacher training projects helping the introduction of environmental curricula into classrooms should be encouraged, while networking should be promoted on a world-wide level. Teachers must also be encouraged and trained to use methods in which students become agents of their own learning by being truly involved in the learning process. The learning process has to be flexible and interactive so that students become independent and develop their own sense of initiative, responsibility and commitment.



*Picture 1: Education in the new millennium needs to place environmental protection at the core of every academic and professional field. The bio-assessment of progress ensures development that respects and supports bios, all forms of life on our planet.*

Bio-education is an interdisciplinary subject of relevance to many fields of teaching. Given the complexity and the various levels of relationships with society as a whole, a wide range of subjects can contribute to bio-education. Educational institutions should therefore be encouraged to devise their own bio-education profiles, based on their strengths and the overall focus of their activities. The non-exclusive

approach of bio-education is an opportunity to lift the barriers separating different disciplines and to offer a well-rounded education which is not hampered by overspecialization. New programs and curricula should be designed with this in mind, with the necessary adjustments in timetables and agendas. The promotion of bio-education in business, public administration and government should also be emphasized. Programs for vocational training and seminars for decision-makers are absolutely necessary if environmental awareness is ever intended to produce action.

#### *New educational tools – e-learning*

Today, the way we learn and educate has also vastly changed. Education and training have become a lifelong learning process, as we increasingly find ourselves in highly competitive environments and seek ways to update knowledge and skills. Traditional forms of education are no longer sufficient to cover the needs of contemporary learning. B.I.O.'s extensive e-learning program (<http://elearning.biopolitics.gr>) offers dozens of courses in several languages and places a wealth of free educational material online with the aim of providing interdisciplinary models with environmental considerations in every specialty. Our program is open to everyone; there are no enrollment criteria or educational prerequisites, and we charge no fees. Since the launch of this groundbreaking initiative, students from 121 countries have enrolled in the program to date.

B.I.O.'s e-learning program promotes:

- Environmental values and bioethics in every academic discipline
- A new concept of “profit,” where the environment, culture, education, and quality of life are considered a priority
- A truly civil society where people and organizations everywhere are inspired to respond to the urgency of protecting the environment and bios on our planet
- The program is based on a comprehensive approach to environmental protection, comprising science, the humanities, economics and policy. The program offers opportunities for study through a series of courses delivered online. The breadth of topics offered provides participants with the freedom to cross departmental boundaries and to discover intellectual and creative thinking processes spanning several academic disciplines and featuring the environment as a common point of reference. The program places a wealth of educational material and resources online with the hope to impart new thinking to environmental education and to enrich the concepts of sustainable development.

Some of the courses offered include:

- *Bio-Architecture*: Environmental models in architecture, energy efficient buildings, environmentally responsible urban planning.
- *Sustainable Urban Management and Transport*: Sustainable management of cities, economy, education, society, sustainable urban transport.
- *Bio-Diplomacy*: International cooperation in environmental protection, the environment as a unifying factor for peace.
- *Bio-Economics*: Environmental management, natural resource economics, international policy, EU environmental policy, corporate policy.
- *Bio-Energy*: Renewable energy sources, clean energy, models for energy savings, wind, solar, biomass, energy efficient buildings.
- *Bio-Ethics*: Environmental protection as an ethical responsibility, codes of environmental ethics for every profession, the environment in bioethics.
- *Bio-Health*: Environmental quality and public health, pollution threats to health, risks and benefits of biotechnology, quality of life.
- *Bio-History*: Environmental factors in the development of human civilization, culture, historical sources, ancient texts.
- *Bio-Legislation*: International and European Union environmental policy and legislation, international treaties, environmental action.
- *Bio-Assessment of Technology*: Tools and methods for pollution abatement, waste management technologies, recycling.
- *Waste Management*: Tools and methods of waste management and technologies, including recycling, composting, landfilling, and wastewater treatment.
- *Bio-Tourism*: Environmentally friendly tourism industry, suggestions for cultural tourism,

- environmental hotel management, water conservation, recycling.
- *Common Agricultural Policy*: A simplified text for non-experts who wish to become acquainted with the EU's Common Agricultural Policy (CAP).
  - *Food and Agriculture*: Agriculture and the environment, pollution loads, GMOs, water and soils, chemicals and biotechnology, environmental policy.
  - *People with a Disability in Modern Society*: Equity and quality of life, accessibility, information, assistive technology, sports, Paralympic Games.
  - *Health, Agriculture and Equity – the case of Sri Lanka*: Environmental dimensions in health, food production, agriculture and forestry with an emphasis on equity and the Millennium Development Goals.
  - *Agriculture, Bio-Economics, Natural Resources Health and Renewable Energy – the case of Turkey*: Environmental education for sustainable development in Turkey.
  - *Water, Soil, Forests and Agriculture – the case of Montenegro*: Improving sustainable development education in Montenegro.
  - *Green Salary – Best Practices in Environmental Protection*: Environmental job creation and “green” employment as a vehicle to reverse unemployment through best practices transfer in environmental protection.
  - *Mythos and the Environment*: Environmental dimensions in mythology, ancient cultures and civilizations.
  - *Protection of Natural Resources – Soil, Water, Forests*: Analysis of natural resources protection with an emphasis on Montenegro. Sustainable management of soil, water and forests.
  - *Climate Change*: Climate change mitigation and sustainable management of natural resources.
  - *Forest Protection and Management*: Sustainable management and protection of forest areas.

### **Green salary – educating to reverse unemployment**

Understanding the nature and implication of educational choices is essential to anyone who can provide effective leadership in creating the institutions of the future. Managing the risks of climate change requires citizens who think and act in terms of systems, not disciplines, and most particularly, citizens who think and act in terms of the needs, potentials, and dynamics of climate change mitigation.

Global challenges facing the international community today include the creation of safe and equitable mechanisms and institutions capable of providing effective policy for the development and use of technology, the links between climate change and biodiversity, traditional knowledge and adaptation to global warming which affects lives and livelihoods.

In this context, B.I.O.'s Green Salary initiative provides guidelines and paradigms to increase employment opportunities in environmental protection and sustainable resource use, promoting climate-smart economic development in every sector. The effective implementation of such initiatives requires education, awareness raising and training in relevant areas, in order to develop the needed values, attitudes and skills.

Education in green salaries applies to people from all walks of life and deals with such matters as urban management, agricultural production, environmental pollution, the preservation of our cultural and natural heritage, the management of natural resources, energy, commerce and transport. Lifelong environmental education is of vital importance in this context. Not only does it deal with issues of a social nature, but it encompasses financial and environmental matters too, as well as issues pertaining to the application of the right technology and tools that can improve quality of life without uncontrollable damage to ecosystems and biodiversity. Lifelong environmental education should be based on educational material that focuses on specific case studies and positive practices and suggestions from around the world. Such material is extensively provided by B.I.O., as explained in the previous section of this paper.

It is important to note that education and awareness programs need to be addressed to both the professional sector and the general public, drawing attention to the direct and indirect impacts of climate change, causes and effects, global and local issues, immediate and long-term problems, and good practices. Private enterprise can complement government efforts by contributing information on sustainable development issues, encouraging clients to conserve energy and resources, and avoiding negative impacts on biodiversity and cultural heritage.

The solution to the twin challenges of climate change and economic growth could be found through science, technology and sustainable innovation. We must guide development and technological innovation to create a greener, cleaner and creative economy. We have at our disposal the knowledge, research skills and innovation capability to counter pollution, global warming, poverty and social injustice. What we lack is the will and the foresight to implement a new governance mechanism for

scientific knowledge production; markets that are accountable to the management and diffusion of technology; and a fair and equitable distribution of innovation on a global scale. Also, ensuring access to technology by those who need it most is critical for addressing sustainability challenges.

The creation of new jobs, particularly for youth, is an imperative for relieving hunger and poverty and regenerating the world's economies. The destruction of the natural environment must be reversed, and this will require human labor. The unemployed are a potential source of this labor. Moreover, many young people are entering the labor market with few skills and even fewer opportunities for productive work. Also, by 2050, the world's population is projected to surpass 9 billion, with developing countries accounting for most of the 2.3 billion increase. The population of the developing world is expected to rise from 5.6 billion in 2009 to 7.9 billion in 2050. The continued rapid increase in the population of developing countries highlights the importance of having appropriate policies designed to promote the sustained economic growth and structural transformation of their economies so as to ensure durable poverty reduction. This points to the urgency of developing a knowledge base to create opportunities for sustainable livelihoods. Green salaries and green employment opens the possibilities for disadvantaged groups and youth to develop their employment potential and also creates new jobs and work opportunities, an ethical imperative in a responsible society.

By training and educating unemployed persons, communities can enhance their available human capital and promote positive economic improvement. Practical experience in the field, while making a direct difference to the community served, comes with extra benefit to the individual, as people experienced in sustainable development practices are highly employable in many economic sectors. Furthermore, adapting policies to meet the climate change challenge will require a well-trained cadre of professionals who understand the implications of climate change for development in all spheres.

Education and awareness-raising is also required at all levels of government. This should include processes for increasing cooperation and mutual understanding among authorities, including joint and innovative approaches for environmental issues. Last but not least, it is just as important to raise awareness among academics involved in training and research. Connections between culture, education and climate change mitigation widen access to products and services. This process leads to increased participation, which brings culture and education nearer to everyday life. It also brings increased economic benefits to local stakeholders. Programs connecting cultural participation with learning are proven to improve individual creativity and the potential for innovation. If combined with relevant entrepreneurial training, such programs could be a powerful catalyst for improving entrepreneurial capacity and could contribute to further economic growth.

The models of the past are not adequate to help us deal with today's expanding environmental and economic challenges. A coordinated and collaborative approach, effectively combining all stakeholders, is essential in order to prevent further over-consumerism and limit the effects of uncontrolled growth on society and the environment. A coherent long-term international strategy is urgently needed to tackle this crisis; a new vision that will guarantee the continuity of bios and lead society to a future in which people live in harmony with the environment. Investing in nature can integrate the recovery of the world economy with efforts to limit climate change and reaffirm the positive link between green growth and our survival on this planet. This strategy requires the participation of every individual, whether government leader, business executive, worker, student, or housewife, in the struggle to reverse current trends and restore the balance of life with the environment.

### **Inspiration through progress – Bank of Ideas**

Education and the transfer of know-how are essential for climate change mitigation. The speed of change brought on by green technological advances is creating a "jobs revolution" in workforce development necessitating the learning of relevant technological jobs skills. For example, in the European Union, nanotechnology is estimated to produce two million new jobs in the coming decade, and with more money going to support nanotechnology research and development, a fair share of this employment growth can be expected to follow as well, calling for a workforce that can meet this growing demand. As a result, new models of workforce development are needed which incorporate ongoing skills training and increased collaboration between business, policy makers and education. Models that can secure life-long environmental literacy, as well as facilitate vocational training to equip future generations with the skills and knowledge they will need to thrive and survive.

To effectively respond to the climate change challenge, we need to stop reinventing the wheel. Owing to poorly coordinated efforts, valuable time and resources are wasted while damage to the environment persists. The knowledge and technology to prevent further destruction are available, but they have to be disseminated more efficiently. It has been one of the main B.I.O. objectives for many years to raise awareness of the importance of the development of an internet based "Bank of Ideas," where any

interested party may contribute information and expert advice across a broad range of sectors, in order to help coordinate environmental protection efforts and harness valuable resources. It would also be a vehicle for key stakeholders to contribute to climate change mitigation for mutual benefit, with minimal competition and duplication of effort. The creation of such an electronic resource would also facilitate an expedient transfer of know-how at instances of great urgency, when immediate action is crucial before it is too late.

The Bank of Ideas can also facilitate the jobs-environment link by providing widespread access to information on training, jobs, products, industry regulations, and R&D. Furthermore, it can identify job-training and educational programs, which teach job skills complementary to the environmental industry across a broad range of sectors, and include a training component, which would give people the skills needed to improve their employment potential. As the Bank of Ideas would welcome the contribution of every citizen, it would offer a global platform in guiding world leaders and policy framers toward more enlightened decision-making and environmental leadership.

Pollution and environmental degradation do not respect international treaties and state boundaries. Putting the principles of bio-diplomacy – international cooperation in environmental protection – into practice in a coordinated fashion will provide for increased cooperation of people across all the borders that separate them, be they physical, economic, or ideological. This can help to promote the fair distribution of natural resources, so that poor people and regions capture fair shares of environmental benefits, promoting poverty reduction and social equity, and encouraging people to better manage the environment and its precious natural resources.

Informing the public and soliciting active participation in climate change mitigation is a crucial and urgent task if destructive trends are to be curbed. Establishing codes of environmental ethics for all professions and assessing technological developments on the basis of environmental criteria would contribute to the elevation of our ethical responsibilities towards the environment into everyday decision-making and lead to greater respect for the gift of life, the most precious possession on our planet.

We are interdependent with the whole natural environment, with all forms of bios. If we continue to develop our technology without wisdom, there can be no gain. It is our unquestionable ethical responsibility to assess progress in the context of partnership, equity, and balance among all forms of life on our planet. The ethical foundation found in medicine, stemming from the oath of Hippocrates, needs to be expanded into other fields. The arrogant view of the world, in which the environment was seen as existing for the benefit of humans only, needs to be supplanted by a view which promotes respect for all forms of life and the value of the continuity of bios. Codes of ethics, which incorporate these principles, need to be developed and broadly adopted by decision makers in every field. This is crucial for life to survive.

## **Bibliography**

1. Vlavianos Arvanitis A. (2013) Green Salary. Reversing Unemployment in a Changing Climate. B.I.O., Athens, 272 pp.
2. Vlavianos Arvanitis A. (1985) Biopolitics. Dimensions of Biology. Biopolitics International Organisation, Athens, 16 pp.
3. Vlavianos Arvanitis A. (1989) Biopolitics. The Bios Theory. In: A. Vlavianos Arvanitis (ed.) Biopolitics – The Bio-Environment II. Biopolitics International Organisation, Athens, pp. 17-31
4. Vlavianos Arvanitis A. (1992) Reversing the crisis of values. In: A. Vlavianos Arvanitis, R. Keles (eds.). Biopolitics – the bio-environment IV, B.I.O., Athens, pp. 18-28
5. Vlavianos Arvanitis A. (2008) Green Salary. Reversing Unemployment through Environmental Protection. B.I.O., Athens, 144 pp.
6. ILO (2012) Global Employment Trends [www.ilo.org/global/research/global-reports/global-employment-trends/youth/2012/WCMS\\_180974/langen/index](http://www.ilo.org/global/research/global-reports/global-employment-trends/youth/2012/WCMS_180974/langen/index)
7. OECD (2012) Employment Outlook, [www.oecd.org/employment/employmentpoliciesanddata/oecdemploymentoutlook2012chaptersummaries.htm](http://www.oecd.org/employment/employmentpoliciesanddata/oecdemploymentoutlook2012chaptersummaries.htm)
8. ILO and OECD (2012) Sustainable development, green growth and quality employment. Realizing the potential for mutually reinforcing policies. [www.oecd.org/els/employmentpoliciesanddata/50318559.pdf](http://www.oecd.org/els/employmentpoliciesanddata/50318559.pdf)
9. ILO (2011) Green jobs becoming a reality. Progress and outlook 2012. [www.uncsd2012.org/rio20/content/documents/Green%20jobs%20becoming%20a%20reality.%20Progress%20and%20Outlook%202012.pdf](http://www.uncsd2012.org/rio20/content/documents/Green%20jobs%20becoming%20a%20reality.%20Progress%20and%20Outlook%202012.pdf)
10. United Nations, Department of Economic and Social Affairs (2009) Rethinking poverty. Report on the world social situation 2010, [www.un.org/esa/socdev/rwss/docs/2010/fullreport.pdf](http://www.un.org/esa/socdev/rwss/docs/2010/fullreport.pdf)

11. Griffin C. (2013) Graphene 'paint' could power future homes with solar energy. Science World Report, [www.scienceworldreport.com/articles/6625/20130503/graphene-paint-power-future-homes-solar-energy.htm](http://www.scienceworldreport.com/articles/6625/20130503/graphene-paint-power-future-homes-solar-energy.htm)
12. Vince G. (2012) Sucking CO<sub>2</sub> from the skies with artificial trees. BBC Future [www.bbc.com/future/story/20121004-fake-trees-to-clean-the-skies](http://www.bbc.com/future/story/20121004-fake-trees-to-clean-the-skies)
13. Helder M., Strika D., Timmers R., Raesa S., Hamelers H. and Buismana C. (2013) Resilience of roof-top plant-microbial fuel cells during Dutch winter. In: Biomass and Bioenergy, Vol. 51, pp. 1–7, Elsevier Publishers
14. Matus M. (2013) Scientists Engineer Algae to Make Nanocellulose for Biofuel and Supermaterials, <http://inhabitat.com/scientists-engineer-algae-to-make-nanocellulose-for-biofuel-and-supermaterials>
15. Vlavianos Arvanitis A. (1995) Biopolitics – the bio-environment – bio-culture and business opportunities. In: A. Vlavianos Arvanitis (ed.) Business Strategy for the Bio-Environment II. A Symposium at the Harvard Club of New York City. Biopolitics International Organisation, Athens, pp. 7–19
16. Vlavianos Arvanitis A. (1996) Biopolitics: a new dimension of the concept of profit. In: A. Vlavianos Arvanitis (ed.) Business Strategy for the Bio-Environment III. Biopolitics International Organisation, Athens, pp. 14
17. Vlavianos Arvanitis A. (2002) Bio-Economics. In: Bio-Syllabus for European Environmental Education. B.I.O., Athens, pp. 101–106
18. Vlavianos Arvanitis A. (ed.) BioNews, Issue 36 (2003), [www.biopolitics.gr/HTML/PUBS/BIONEWS](http://www.biopolitics.gr/HTML/PUBS/BIONEWS)
19. Earthwatch Institute (2012), [www.earthwatch.org/europe/newsroom/corporate-partnerships](http://www.earthwatch.org/europe/newsroom/corporate-partnerships)
20. Vlavianos Arvanitis A. (ed.) (2001) Biopolitics – the bio-environment VIII Resolving the environmental crisis – the need for an International Court of the Environment, B.I.O. International Conference, Athens, 41–150 pp.
21. Vlavianos Arvanitis A. (ed.) (1990) Biopolitics – the bio-environment III. International University for the Bio-Environment. B.I.O., Athens, 683 pp.
22. Vlavianos Arvanitis A. (1996) The bio-environment – bio-culture – bio-peace for the next millennium. In: Biopolitics – the bio-environment Vol. V A. Vlavianos Arvanitis (ed.) B.I.O., Athens, 1996, pp. 51-66