

## **Summer Assignment AICE Environmental**

Welcome to AICE Environmental Management. This course will help you develop scientific knowledge, understanding of global environmental issues and theories, and of the policies and strategies for managing the environment. The course covers the sustainable use and management of resources, and strategies that aim to protect environments. You will learn to interpret and analyze data and complete investigative work.

During this course you will be completing case studies on environmental topics that may be local, regional, or global on managing the environment and resources. These case studies will be used in class discussions and help prepare students for the AICE end of the year test.

The AICE Environmental Management end of year test will include 2 tests. Paper one will include an essay where students need to list real life examples on managing the environment and resources based on the test prompt. This summer assignment will help you get familiar with topics that will be covered in class and start preparing you for the end of year test.

### **Summer Assignment**

The summer assignment will include choosing 5 topics listed below that will be covered in class and completing an annotated bibliography for each topic.

### **Requirements for the 5 Annotated Bibliographies/ Due 1<sup>st</sup> day of class**

Annotated Bibliographies are short summaries or an evaluation of each resource. It is preferred that you use scientific journals that are peer reviewed (google scholar is a good resource). This will make sure the information that you are reading and using is accurate and true. You may also use books, websites, and other articles but use caution because they might not be true/reliable resources.

- You will need to complete 5 annotated bibliographies.
- Summarize the source. What are the main arguments? What is the point of the article, book, or website? What topics are covered?
- After summarizing a source, you should evaluate the source. Was it a useful source? Is the information reliable? Is this source biased or objective?

### **List of topics for annotated bibliographies**

#### **Human Populations:**

Population dynamics between high-income countries (HIC) and low-income countries (LIC).

-Improved education and opportunities for women.

-Improved education about contraception/ improved availability of contraception.

-Improved health care.

-Local, national, and global policies: pronatalist and anti-natalist policies, United Nations Agenda 21, The Club of Rome.

## **Managing Ecosystems and Biodiversity**

- Explain the impacts of invasive species on biodiversity.
- Describe and explain the benefits of conserving biodiversity.
- Resources of potential medicines, food, wood, fibers, oils and fuels, diversity in genes, ecological services, cultural and recreational value.
- Protection of species and regulation of sustainable harvesting.
- Deforestation leading to fragmentation
- Agricultural expansion
- Protected areas
- Fisheries regulation
- Prohibited activities such as mineral extraction.
- Tourism control and permits for travel.

## **Managing Resources**

### Food Security

- increase food production by intensification and extensification
- improved agricultural techniques and efficiency
  - aquaculture and hydroponics
  - use of selective breeding and genetically modified (GM) crops to developing pest resistant crops and crops with a higher yield
  - controlling limiting factors, e.g. use of fertilizers in areas short of nutrients
  - increasing productivity by removing competition from weeds using herbicides, reducing fungal disease by use of fungicides, reducing pest species by use of biological control

### Energy Resources

- increasing energy efficiency
- increasing energy production
- reducing reliance on fossil fuels
- investing in renewable resources and carbon neutral fuels
- development of alternative energy technologies
- investment in local energy projects

## **Managing Water Supply**

- sustainable water extraction and improved supply (piped supply, aquifers and artesian wells, boreholes, gravity-fed schemes, reservoirs, and dams)
- reduction in water usage (improved irrigation techniques, growing crops less dependent on high water supply, recycling, and rainwater catchment)
- education on sustainable water use
- international agreement and water-related aid

## **Managing the Atmosphere**

- Acid deposition effects on fish gills and fish populations, defoliation, and reduced crop yield, enhanced chemical weathering.
- Effects of chlorofluorocarbons (CFCs) on the ozone and alternatives such as hydrochlorofluorocarbons (HCFCs) or fluorinated gases (F-gases).
- reduction of global and individual carbon footprint (fewer children per woman, eating a plant-based diet, adopt an energy-efficient lifestyle)
- switching to low-carbon fuels
- reducing the use of fossil fuels
- using alternative forms of energy
- use of carbon capture and storage
- reducing deforestation, increasing reforestation and afforestation
- energy efficient buildings and infrastructure

## **Example of Annotated Bibliography**

Frank Jensen, Hans Frost, Jens Abildtrup. 2016. Fisheries regulation: A survey of the literature on uncertainty, compliance behavior and asymmetric information.

This paper covers the economic literature on fisheries regulation, focusing on the challenges of uncertain information about enforcing fishing policies and fish stocks. It shows the importance of regulating fish stocks where individual fishermen do not consider their impact of the harvest on overall stock size. The survey covers three main areas: the choice of regulatory instruments under uncertainty, compliance and enforcement issues, and alternatives to traditional enforcement policies of fishing regulations. The paper identifies findings in these areas and suggests directions for future research.

This article contributes to the field of fisheries economics. The article's overview of the literature and summarizing the findings over several areas affecting fish populations and the effect on the economy. The article creates a helpful resource for researchers and policymakers. Policymakers looking to understand the fishery regulations and the effect on the economy can receive important information from this article.

The information in this article suggests it is reliable. The article incorporates different studies and summarizes information based on environmental and economical principles. The article appears to be unbiased due to it being peer reviewed and published in an academic journal. The article could have included more information on future understanding and management of the fish stocks.