



# Ethical Dilemma

## Desalination

Description	Using group work and critical thinking to analyse a case study to encourage students to develop a greater awareness of ethical and sustainability issues.
Task Type	Tutorial or Assignment as an Assessment task.
Time	Minimum of 5 hours. Scale of exercises and assessment tasks can be varied to suit the teaching situation.
Level	Complexity of task can be varied to suit all levels.
Class Size	Works best in class size of less than 30
Learning Outcomes	<p>At the end of this activity students should be able to:</p> <ul style="list-style-type: none"> <li>* Source relevant information</li> <li>* Make an argument in writing and/or orally for or against a particular point of view</li> <li>* Evaluate the arguments of others</li> <li>* Understand the concept of counterargument</li> <li>* Apply ethical/sustainability theories to help make an argument</li> <li>* Work constructively in a group environment</li> </ul>
Graduate Capabilities Demonstrated	<ul style="list-style-type: none"> <li>* Constructive group work skills</li> <li>* Critical thinking (developing an argument based on appropriate, substantiated sources, critical questioning)</li> <li>* Communication skills (presenting, influencing)</li> <li>* Professional judgment (evaluating information sources, developing and analysing arguments, judging arguments)</li> </ul>
Method	<ul style="list-style-type: none"> <li>* Debate (See Learning Activity “Debate”)</li> <li>* Mock hearing</li> <li>* Joint report</li> <li>* Critique</li> <li>* Research ‘real-life’ examples</li> </ul>

Concluding Activity	How to draw the activity to a close and make the students aware of their learning. Debriefing, reflective activities, etc.
Assessment	<p>Choose from:</p> <ul style="list-style-type: none"> <li>✦ Debate between major stakeholders (See Learning Activity “Debate” for examples of an evaluation sheet for use by the jury and an assessment rubric for the teacher)</li> <li>✦ Mock hearing; In an effort to quell the growing national and international disquiet surrounding the project the government is to hold a public hearing at which all stakeholder groups will be able to present their case to a Chairperson/Presiding Officer.</li> <li>✦ Joint report; Write a joint report that outlines the position of the stakeholder groups.</li> <li>✦ Critique; Critique the argument advanced by another stakeholder group.</li> <li>✦ Research ‘real-life’ examples; world-wide there are many ‘real-life’ instances where completed or planned desalination projects have aroused controversy. Research a specific example and write a report which outlines the major issues involved. You may wish to identify more than one example and to compare these.</li> </ul>
Tips	<p>Q3 is designed for classes with a mixture of cultural backgrounds. This question allows them to consider a project relevant to their background and will also allow cultural difference that may influence attitudes to all aspects of sustainability to be explored.</p> <p>The material for the Gunn’s Case Study is available at <a href="http://www.graduateskills.edu.au/">http://www.graduateskills.edu.au/</a>. It gives an indication of the type of material students are being asked to prepare and subsequently discuss.</p>
Student Instructions	<p>Students should be given the case information below, plus any or all of:</p> <ul style="list-style-type: none"> <li>✦ The questions (below)</li> <li>✦ Jury Evaluation sheet</li> <li>✦ Evaluation rubric</li> </ul> <p>Select groups.</p> <p>Any other instructions relevant to the forms of assessment used.</p> <p>If there is to be an in-class component then the jigsaw method should be used.</p> <p>Sample description of the jigsaw method for students:</p> <p>“You will work in groups of X (depending on the number of stakeholders). Everyone will be given some background material on the Project. Each group</p>

	<p>will then be given some material relating to X stakeholders with differing views about the Project. One group member will be assigned to each stakeholder. You should read and or locate the material for the stakeholder you've been assigned to but don't discuss this with the rest of your group."</p> <p>The groups will then be rearranged so that those with the same information become an 'expert group' on each stakeholder's views. Each of these expert groups will consider the information given and decide how each member will present their views to 'non experts'. For example, if you're part of the Pisces International's stakeholder group how could you best explain the company's position to other stakeholders?</p> <p>Once these steps have been completed the original groups will reconvene. Each will now contain an 'expert' on the views of each stakeholder. You will then consider and discuss the issues based on the information you've been given, and the contributions of each 'expert' who will argue the interests of their respective stakeholder.</p>
Additional Materials	<a href="#">[Link]</a>

# The Case

## Background

Caloam is a small mountainous country situated on coastal SE Asia. A combination of sustained drought and population growth has created a severe water shortage particularly in the capital city. The national government plans to address this shortage by going into partnership with a large foreign company ('Pisces International') to build a desalination plant. The World Bank will also provide financial support.

Feasibility studies suggest that the best location for the plant is on the coastal plain 500 kms due south of the capital. This location provides ocean water which is easily accessible and which circulates freely enough to rapidly disperse salty water concentrate (or brine) from the desalination treatment process. The plant will use the 'reverse-osmosis' process. Pisces International will use its own nationals in the managerial positions and imported low-cost labour from neighbouring countries for the construction work.

The proposed site is the centre of a small but growing tourist industry. Tourism supplements the main economic activity, subsistence fishing, which has been the sole occupation of the region's inhabitants for many generations.

Disquiet among about key aspects of the project is growing particularly from the environmentalists, ethicists and the local fishers.

## The Major Stakeholders and a Brief Summary of Their Position

### 1. Caloam National Government

Feels duty-bound to address the water crisis and quotes the fact that there are thousands of desalination plants successfully operating around the world.

Because of financial constraints, must enter into a public-private partnership (PPP). This has also been urged by the World Bank as a condition of financial support.

Answers its critics by saying that the long term benefits of the project such as increased employment and economic activity will outweigh potential adverse environmental effects.

## 2. Environmentalists

Water desalination plant will place a strain on the existing electricity capacity of Caloam and contribute to greenhouse gas emissions.

The potential environmental risks associated with the desalination plant construction include:

- ✦ removal of significant vegetation
- ✦ disturbance of local cultural sites of significance
- ✦ noise and vibration due to construction activities

## 3. Ethicists

Are concerned that public-private partnerships (PPPs) are not always socially responsible. Evidence from Europe suggests that many privatized water operations in other countries (eg, France, USA) have failed to meet targets, expand and upgrade networks and have introduced high prices and unaffordable connection fees.

View with alarm the potential for Caloam society to be burdened with the cost of maintaining and upgrading the plant once Pisces' involvement has concluded.

Are concern that multinational organizations such the World Trade Organization, the World Bank, and the Organization for Economic Co-operation and Development are promoting the 'marketisation' and privatization of water and fail to recognize water as a basic human right.

## 4. Local fisherman (or 'fishers')

Are extremely concerned about their future ability to support themselves through fishing. These concerns are based on the potential detrimental effect on the marine environment as a result of:

- ✦ The desalination process itself which releases concentrated brine and potentially harmful chemicals to the sea. This is likely to harm the marine environment particularly in the area around the discharge point.
- ✦ The possibility of oil spills and the introduction of pests, disease and pollution (chemicals and hydrocarbons) through increased marine vessel activity and the construction process of the plant itself.

Are wary of the potential damage this development may bring to their cultural heritage through damage to their land and the influx of foreign workers.

Have heard disturbing stories about previous instances of exploitation by government and foreign companies.

## 5. Pisces International

Argue that desalination is the most effective way of overcoming water shortages due to drought and climate change.

Consider that foreign companies have greater expertise and experience

## 6. City dwellers

Are very concerned at the lack of water and consider that if the situation is not resolved people will leave. This will lead to the closure of many businesses and have enormous economic implications for the country as a whole.

Reject arguments against the effectiveness of desalination as a water supply for inland sites at high altitude.

## 7. Imported labour

Argue that they:

- ✦ Are supplying a skill that is not available in the host country
- ✦ Are support the local economy by spending their wages
- ✦ Have little detrimental impact on the local environment as their 'environmental footprint' is minimal.

## Questions to Consider

1. Is building a desalination plant an environmentally sustainable response to water shortage in this case?
  
2. Can the processes associated with the planning and building of the desalination plant be justified ethically?
  
3. Choose another country where there are water shortages and there is debate about desalination.
  - a) Would the same stakeholders and their concerns apply? Why/why not?
  - b) Compare the responses from different countries. What are the main cultural differences that have emerged?