

Strategic Analysis Paper

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Food and Water Crisis: Research Process

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Objective:

The purpose of this Strategic Awareness Paper (SAP) is to describe the process of research and analysis required to answer the Water and Food crises scoping question.

Scoping Question:

The scoping question confirmed by the Future Directions International (FDI) Board, is as follows:

How can Australia best display a global leadership role in improved and sustained agriculture productivity and landscape regeneration in the event of a global food and water crisis?

The Research Process:

To answer the research question, four main elements have been identified:

- Is there presently, or potentially, global food and water crisis?
- If there is, or is to be, a crisis, when and where will it occur, what form will it take and what are the global, regional and national implications?
- What, if any, is the potential for intra and inter-state conflict?
- How can such a crisis be averted and what role could Australia take in so doing?

Within these four underlying elements, FDI has identified six major factors which will be researched: population; food considerations; land limitations; water considerations; science and technology and innovation; and international triggers for conflict. Within each of these factors are a series of research tasks. By studying the various research tasks FDI will be adding to the debate by identifying the challenges that face the world, regions and Australia. Most importantly, through this process FDI will be seeking to provide leadership in this field by identifying possible solutions, and Australia's role in providing these positive outcomes.

It is envisaged that a SAP will be produced for each of the identified research tasks listed below and any others pertaining to the food and water crisis.

1. Research tasks:

Population issues:

- What are the key population issues facing the globe and how does that relate to a food and water crisis?
 - What population theories, strategies and policies exist or have existed and what was their success or failures?
 - What are the key global population trends, possible pressure points and how are these predicted to change in the future?
 - What is the impact on a growth in income on population and family sizes as seen through the lenses of the developed and developing World?
 - How does the age distribution in certain countries impact on demand for food and on the supply of labour to produce the food?
 - What is the impact of urbanisation on food consumption patterns?
 - What is the impact of deteriorating health (HIV Aids, Malaria) in regions and their ability to provide sufficient food and maintain the structure of their society?
 - What role does and can education and culture play in determining population size, movement and growth?

Food issues:

- What are some of the food issues that the world faces and what threats and opportunities exist for countries like Australia?
 - What is the quantity, composition and sustainability of world food produced and how significant is Australia's production?
 - What is the ratio between foods consumed and produced in different regions around the globe? Where are the discrepancies the highest?

- How do the prices of basic commodity groups vary around the world and what role can Australia play, if any, in determining prices for food?
- Is Australia able to manipulate world production? Or is Australia's production dependent and reactionary to international food supply?
- What are the opportunities of adding vitamins to food, use GM crops, and using other means to provide nutrition such as adding to water ply and finding substitutes?
- How can we eat and produce more efficiently?
- What role can public education play in health and nutrition? Healthy soils, healthy food, healthy people.
- What food management practices exist in relation to transport, storage and refrigeration and how can these practices be enhanced?
- What role has the demand for bio-fuels had on the supply of food and the demand on inputs such as arable land and labour.
- What are the ethical considerations for those with a shortage of food and those with excess?
- What natural food alternatives exist that are not fully exploited such as in marine food, crops, land animals, and birds?
- What un-natural(artificial) foods could be better utilised to deal with food shortages?

Land Limitations:

- What limitations exist in relation to land that could curtail the development of food productions across the globe?
 - What is the percentage of arable land. i.e. land with sustainable healthy soils? How has the percentage of world arable land changed?
 - What is the impact of urban areas encroaching on agricultural land?
 - What role can new technologies play in enhancing or adding arable land to the world's land inventory?
 - What management practices may be useful in dealing with unhealthy soils? What is the world's best practice?

- What is the level of deforestation that is occurring around the world and how much forest is required to provide sustainable food production?
- What role do forests play in providing adequate water to food producing areas?
- What will be the impact of global warming/cooling on world food production?

Water Considerations:

- What role does the availability of water play in determining the food crisis throughout the world?
 - Where is the water found? Has this changed significantly throughout history and what are the trends?
 - How much is available? What is the distribution of this water?
 - What do we need to satisfy our water needs? Where do we have shortages or surpluses? What opportunities exist to transport water to those areas with a shortage?
 - What are the implications of shortfalls?

Science Technology and Innovation:

- What role can Science, Technology and Innovation play in increasing food yields and overcoming food shortages or oversupply? What role does, and can, Australia play in developing and utilising technologies for the benefit of other countries?
 - What role has science, technology and innovation played in improving productivity of food production?
 - What are some of the innovations that may assist developing countries in lifting their food production levels?

International Triggers for Conflict:

- What are the international cross-border issues that been a result of a food and water crisis, where could the future potential flashpoints be located?

- What are some of the distribution and logistical impediments that exist that could hamper the supply of food where it is needed? What is the nature of these impediments?
- What role does, and can, trade relations through tariffs and subsidies play in the distribution of food and water?
- What impact does food and water ownership have on the availability and distribution of these essential items?

2. Sources:

The study will utilise a variety of primary sources such as newspapers, magazines and internet sources. In addition, regional studies and international reports from multinational organisations and non-government organisations will be sourced via websites and e-libraries. Other sources may include books and journal articles, unpublished manuscripts and masters' and doctoral theses.

3. Methodology:

The research methodology to be used for the Water and Food Crisis study will be both qualitative and quantitative and the process of dialectical reasoning will be applied. This process involves critical thinking about problems and evaluating conflicting viewpoints. Dialectical reasoning is useful in resolving controversial issues and assessing opposing positions. In relation to the food and water crisis there may exist several ways of resolving questions and understanding issues rather than one single right answer.

4. Product and dissemination:

FDI will release its work on the Water and Food crisis via a number of processes. As research is undertaken it will be disseminated through FDI's primary publications, these being the Strategic Weekly Analysis, Strategic Analysis Paper, Occasional Paper or Land Mark studies. FDI will be working closely with its Associates that have an interest in the Food and Water Crisis.