



## CSIRO Submission 14/502

### Inquiry into Australia's trade and investment relationships with countries of the Middle East

### Joint Standing Committee on Foreign Affairs, Defence and Trade

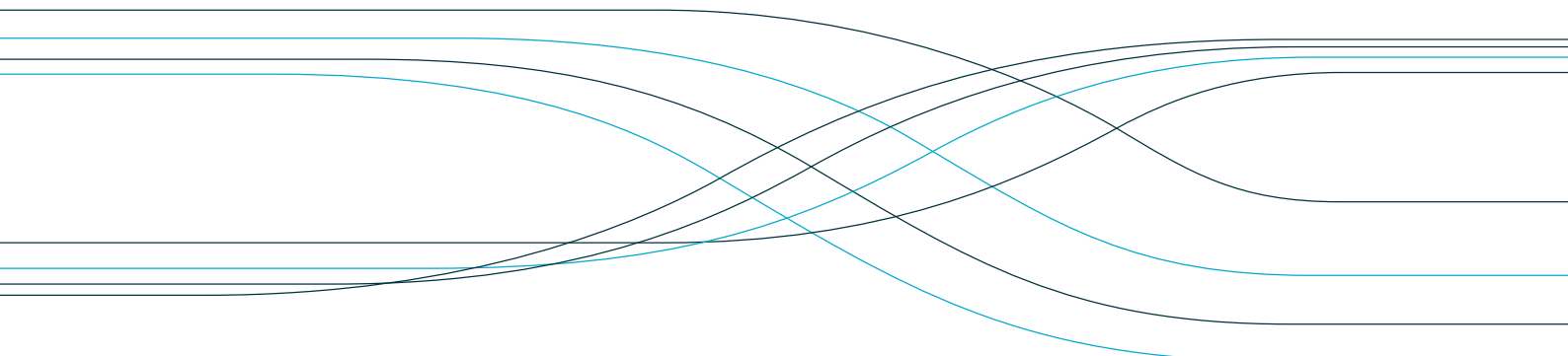
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## Executive Summary

CSIRO is at an early stage of engagement in the Middle East, but sees potential for greater engagement both directly and in support of Australian businesses that are active in the region. Similarities in climate and common global challenges mean that the opportunities for sharing information and knowledge, as well as transferral or commercialisation of technology, are reasonably strong. However, barriers such as transactional costs and sanctions are a limiting factor for full engagement with many countries in the region.

CSIRO sees the on-ground presence of Australian government departments such as DFAT, Austrade and the Department of Agriculture, as a way to support Australian engagement in the region, where personal relationships are important and up to date information about standards, political situations and other complications is vital to the development of strong and sustainable trade and investment relationships.

## Introduction

CSIRO welcomes the opportunity to provide input to the Joint Standing Committee on Foreign Affairs, Defence and Trade inquiry into Australia's trade and investment relationships with countries of the Middle East.

CSIRO's submission to the inquiry is made in the context of our role and function in the national and global innovation system and from the perspective of a mission-directed research organisation. Therefore our focus here is on connections with countries of the Middle East in the areas of research, science, technology, innovation and entrepreneurship and how Australia can seek to maximise its level of engagement in these areas.

This submission will address all terms of reference of the inquiry:

- the nature of Australia's existing trade and investment relationships with countries of the region;
- emerging and possible future trends in these relationships;
- barriers and impediments to trade and investment with Middle Eastern countries for Australian businesses, including examination of supply chain costs;
- opportunities for deepening existing commercial and cultural links, and developing new ones, with the countries of the Middle East; and
- the role of government, including DFAT and Austrade, in identifying new opportunities and assisting Australian companies to access existing and potential opportunities in the Middle East.

However, given CSIRO's focus on research and development, our submission will focus on research, commercialisation and innovation relationships in the region, rather than traditional trade and investment relationships.

The terms of reference do not include a definition of the countries considered to be part of the Middle East for the purposes of the inquiry. For clarification, CSIRO's submission will focus on the following countries:

- Bahrain
- Cyprus
- Egypt
- Iran
- Iraq
- Israel
- Jordan
- Kuwait
- Lebanon
- Oman
- Palestine
- Qatar
- Saudi Arabia
- Syria
- Turkey
- United Arab Emirates
- Yemen

CSIRO's international activities take several forms. For the purposes of this submission, our international activities will be categorised as follows:

1. **Peer-to-peer relationships** are those between individual scientists or small research teams for the purposes of joint authorship of scientific papers and sharing of information or data. For the purposes of this submission, we are also using this category to encompass short term staff visits and post-graduate or post-doctoral supervision.
2. **Research relationships** are generally between CSIRO and a research organisation in another country (such as a university, publicly funded research agency or private research institution). These may or may not have a financial aspect to support staff exchanges, research projects, joint workshops or other activities. These relationships are generally focused on collaborative early-stage research, though the outcomes of such relationships can include commercialisable technology or outputs. They may be formal or informal.
3. **Commercial relationships** are generally between CSIRO and a commercial organisation or state-owned enterprise, with the aim of jointly developing a commercialisable technology, or alternatively with the aim of licensing, transferring, piloting or commercialising knowledge or technology developed by CSIRO. They are generally formal relationships.
4. **Development relationships** focus on capacity building through the application of research being undertaken by CSIRO. These are most commonly, though not exclusively, in areas related to food, water and energy security, and generally focus on countries or regions eligible for official development assistance (ODA).

## CSIRO response to the Terms of Reference (ToR)

### ***The nature of Australia's existing trade and investment relationships with countries of the region***

In this section, we will focus on relationships between CSIRO and countries in the Middle East.

Compared with other regions, CSIRO has relatively limited engagement in the Middle East. Most engagement is related to energy research – historically in oil and gas, but with increasing potential in renewable energy – and in research related to food and water security. There are also a small number of peer-to-peer connections in a variety of areas.

In the past five years, there have been 161 publications co-authored by CSIRO and at least one author from a Middle East country. The list below shows the number of publications with a co-author from the listed country:

<b>Country</b>	<b>Number of publications</b>
Bahrain	0
Cyprus	1
Egypt	10
Iran	47
Iraq	2
Israel	37
Jordan	3
Kuwait	1
Lebanon	3
Oman	3
Palestine	0
Qatar	4
Saudi Arabia	18
Syria	8
Turkey	29
United Arab Emirates	12
Yemen	0

In 2013, 67 CSIRO staff visited countries in the Middle East. The number of visits to each country are outlined in the table below (countries not listed were not visited in 2013).

<b>Country</b>	<b>Number of trips 2013</b>
Cyprus	1
Israel	4
Jordan	4
Lebanon	1
Oman	1
Qatar	11
Saudi Arabia	2
Turkey	21
United Arab Emirates	22
<i>Middle East Total</i>	67
<b>World Total</b>	<b>5235</b>

CSIRO has a small number of key research and commercial relationships in the region as below.

CSIRO is working with Saudi Aramco, a global energy and chemicals enterprise owned by the Saudi Arabian government. The partnership currently focuses on carbonate reservoir studies and the development of relative permeability modifiers (chemicals that when injected in a oil well decrease water production without impacting the oil production), and includes the use of CSIRO's SEDSIM (stratigraphic forward modelling) software.

CSIRO is working with the Kuwait Institute for Scientific Research (KISR) on a collaborative project funded by the Kuwait Foundation for the Advancement of Sciences (KFAS) to study groundwater affected by destruction of oil wells.

CSIRO is collaborating with Turkish universities and research institutions on a project to increase climate resilience in chickpeas by exploiting the adaptive diversity of wild varieties of chickpea progenitors. The project, supported by the Australian Grains Research and Development Corporation, will see CSIRO and other Australian and Turkish partners collecting and phenotyping chickpea varieties in collaboration with a large international consortium.

CSIRO is part of the collaborative Iraq Salinity Project, which aims to develop long-term strategies to manage salinity in central and southern Iraq. The project is funded by the Australian Centre for International Agricultural Research (ACIAR) and the Italian government, and implemented by the International Center for Agricultural Research in the Dry Areas (ICARDA) in partnership with the University of Western Australia, CSIRO, the International Water Management Institute and the International Center for Biosaline Agriculture. The project is expected to run until the end of 2014.

CSIRO's Digital Productivity and Services Flagship has engaged with countries in the Middle East in areas such as disaster management, supply chain/logistics and the Spatial Identifier Reference Framework (SIRF).

In addition, CSIRO hosts post-graduate and post-doctoral students from a number of countries in the region. In many cases, these are international PhD students at an Australian university who are co-supervised by CSIRO. In other cases, particularly for post-doctoral students, CSIRO is the sole host. These students are sometimes taken on through a formal recruitment program, and sometimes outside these formal programs, though they are still subject to standard processes and procedures for engagement.

CSIRO is also developing new contacts and relationships with Middle East members of the Indian Ocean Rim Association (IORA) through various IORA workshops and activities. These cover areas such as climate adaptation, ocean forecasting and management of environmental spills.

### ***Emerging and possible future trends in these relationships***

CSIRO expects to see increased links with the Middle Eastern members of the IORA (ie, Iran, UAE, Yemen and Oman) as a result of several workshops and activities held under the auspices of IORA. As the countries learn more about their common challenges and one another's expertise, it is likely that collaboration will increase in the form of exchange of information, capacity building projects and similar such interactions.

CSIRO has more students from Iran than from any other country in the Middle East. We have heard anecdotally that this is due to the restrictions imposed by sanctions put in place against Iran by the US and UK, meaning that Australia is seen as a destination of choice for students wishing to study in an English-speaking country. This situation may change if sanctions are eased. Australia's own autonomous sanctions are also affecting relationships with countries in the Middle East, particularly Iran. This is discussed in more detail below.

On another front, the Middle East is a major region for aluminium smelting. Although only a small amount of projects have been undertaken to date in the region and there are no current contracts or proposals being pursued, it is likely that there will be activities in the future. Similarly, a small project is under consideration for research collaboration with King Fahd University of Petroleum and Minerals in Saudi Arabia in the area of groundwater remediation. The technology involved could also have applications in neighbouring Middle Eastern countries.

### ***Barriers and impediments to trade and investment with Middle Eastern countries for Australian businesses, including examination of supply chain costs***

The transactional costs and risks of engaging with countries in the Middle East are generally higher than those in more established markets. For example:

- There may be increased occupational health and safety risks for staff working in countries that do not have the same rigorous standards as Australia.
- The need to understand the risks posed by collaboration (ie undertaking due diligence) may require the advice and services of a third party.
- The role of women in some countries may limit or affect the involvement of Australian female staff.

A key impediment to developing stronger relationships with Middle Eastern countries is the presence of UN and autonomous sanctions and export controls against regimes based in the region. The key issues here are the sanctions against the provision of training to persons linked with the Iranian regime in relation to export-controlled goods, and the broad inclusions in the Defence Strategic Goods List. CSIRO uses or carries out research on many of the items in these lists, therefore significant control and risk management processes need to be in place to ensure we are not in breach of sanctions when hosting students and collaborating with international organisations. This adds a significant administrative burden to activities in the Middle East, and in some cases prevents us from undertaking collaboration altogether in particular areas of research. Because of the strong ties within the region, CSIRO must also be alert when considering collaboration with countries on which there are no sanctions, given the risks of transferral of goods or knowledge from the collaboration partner to a sanctioned regime.

On another note, each country in the Middle East has specific requirements for the compliance of products used in the infrastructure and construction sector. These form a barrier to Australian manufacturers wishing to supply the market. In each sector, different host countries lead the regulation; for example UK regulations are followed in the construction industry in the UAE.

Many countries have an approved list of accredited test and certification bodies that can ensure goods conform to the export market's regulations before they are exported. CSIRO Infrastructure Technologies group has maintained listing in several countries to support Australian innovative manufacturers who wish to supply to these markets. We have found that when we proactively approach appropriate ministries the trusted credentials of the Australian standards and CSIRO expertise have proven acceptable, removing technical barriers to trade. By way of example this has enabled the Sydney based SME LAF group to provide innovative products in UAE and Qatar successfully supplying fire safety construction materials to projects such as Dubai Metro Underground stations.

## ***Opportunities for deepening existing commercial and cultural links, and developing new ones, with the countries of the Middle East***

Regarding general opportunities, CSIRO has seen that international research and development partnerships can lead to increased opportunities for trade and investment relationships with those markets. For example, if Australia was to engage in research and development collaboration to support the developing interests in mining in Middle Eastern markets, this could open up opportunities for Australian companies to supply mining equipment, technology and services to the new industry. Hence CSIRO is currently involved in international collaboration in a range of markets and sectors, and would encourage continued Australian government support for international research collaboration.

In relation to particular opportunities, CSIRO has seen an increasing appetite for renewable energy projects and research in the region, particularly in the United Arab Emirates and Saudi Arabia. The Saudi government, for example, has announced tenders for renewable energy research projects, and CSIRO has submitted proposals for several of these.

In Israel, on the other hand, CSIRO has seen interest in the oil and gas area increasing, particularly through the Israeli government. Resulting research collaboration and knowledge transfer activities, while still in the early stages, are likely to involve Australian industry as well.

Middle Eastern countries are responding to the challenges of water, food and energy security just like most other regions of the world. However, the similarities between Australia and the Middle East in climate, understanding of arid conditions and access to sunlight mean that Australia has significant opportunities to collaborate with Middle Eastern countries to deal with the specific issues and opportunities these conditions present.

In addition, CSIRO has significant international expertise in many areas of interest to the Middle East region, such as addressing environmental issues and opportunities, improving food security and supporting the mining, energy and resources industries.

## ***The role of government, including DFAT and Austrade, in identifying new opportunities and assisting Australian companies to access existing and potential opportunities in the Middle East***

CSIRO finds the assistance of Austrade offices in the region invaluable in identifying opportunities, negotiating partnerships or knowledge transfer arrangements and making contacts in the Middle East. CSIRO staff have participated in Austrade-led trade missions in the region which have given us valuable insight into the business situation in the region and possible opportunities for new relationships.

In addition, CSIRO recognises the importance of personal engagement in developing partnerships and projects in the Middle East. CSIRO receives important assistance from Australian government officials based in the Middle East, for example officers from Austrade, DFAT and the Department of Agriculture, in initiating and maintaining personal connections with potential partners, in a manner and with a regularity that CSIRO is unable to maintain by means of travel from Australia. CSIRO would support the continuation of similar on-ground support for Australian trade and investment relationships in the region.

In addition, Australian government involvement in regional organisations such as the Indian Ocean Rim Association can provide the impetus and financial support to develop new contacts and connections in the region, which includes parts of the Middle East.

Grants programs, such as those run by the Council for Australian-Arab Relations, provide extremely useful support to develop new relationships and explore opportunities that can develop into successful long-term collaboration partnerships.



As mentioned above ('Barriers...'), the significant efforts required to ensure that transactions with sanctioned countries are permitted under Australian law significantly increases transaction costs with the Middle East in particular. A significant aspect of this is that the export control and sanction processes are not integrated and require approvals through two separate government departments. The sanction processes managed by the Department of Foreign Affairs and Trade (DFAT) are substantially more complex and difficult to interpret, compared with the export control processes managed by the Department of Defence. The internal approval processes for sanctions enquiries and applications are also less clear, for example on issues such as the timing for decisions and factors taken into consideration.

This is particularly a problem in the case of Iran, where much broader sanctions apply.

A streamlined and clear enquiries, application and assessment process through a single contact point (or single agency) would help to free up trade, international student placements and research collaboration in permitted areas.

In relation to the compliance requirements and regulations mentioned above ('Barriers...'), Austrade has provided assistance with the application and continued listing of CSIRO laboratories as acceptable testing and certification authorities, primarily through the identification of contacts in relevant government departments and by hosting trade missions. The contact and relationship with government regulatory entities enables CSIRO to assist Australian manufacturers and innovators to smooth the path to market and gain product acceptance throughout the region.

It should be highlighted that the regulatory and accreditation pathway to market is often ignored in the sales cycle, and the Austrade team could play a major role in removing technical trade barriers. Matching Austrade's in-country activities with CSIRO's technical leadership could provide a strong partnership to address market access across a range of countries and product types – an opportunity that CSIRO would be eager to further explore through its commercial services group.