



How does the Australian Defence Force influence the Australian economy?

The Australian Defence Force (ADF) is a significant part of the Australian economy. It is the fourth largest area of Commonwealth Government spending (\$17,670 million in 2007-8), after social security and welfare (\$97,842 million), health (\$44,397 million) and education (\$18,433 million).

It is a major employer, and a major purchaser of Australian made and overseas manufactured items.

In this unit you will be able to explore how the ADF participates in and impacts on the Australian economy.

Your task will be to construct an annotated class diagram of the ADF's place in the Australian economy, using the five-sector circular flow model on page 112.

To do this you need to:

1 Look at and discuss the diagram.



2 Divide the 10 Resource Pages that follow among groups in your class.



3 Read these Resource Pages, and summarise them by answering the questions on each aspect of the economy indicated on the page headings.



4 Each group reports back to the whole class about what their particular Resource Pages tell us about the ADF's involvement in and effects on the economy.

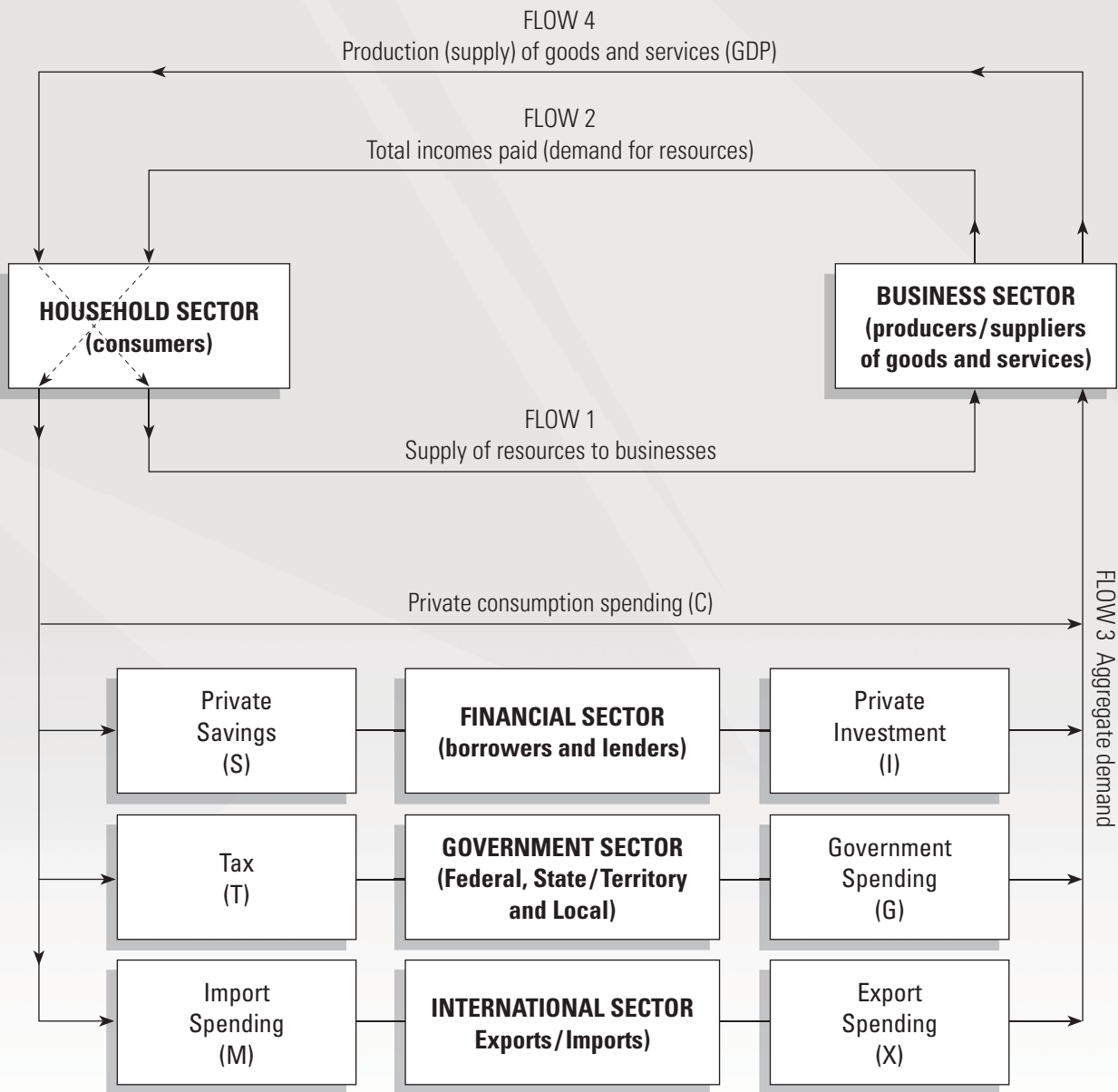


5 As a class or group prepare an annotated diagram that shows the involvement and effects. You may choose to annotate the diagram provided on page 112, or you may want to present your annotated diagram in a different format.

As you work towards understanding the place of the ADF you will also see that the economic activities that you discover also have social or citizenship implications and impacts.



The Australian Defence Force in the Australian Economy



Richard Morris, *Economics Down Under* Book 1, Jacaranda, Brisbane, 2008

NOTES:

FLOW 1	The flow or supply of labour, capital and natural resources from the household sector to the business sector.
FLOW 2	The payment of annual income, made up of wages, interest and rent, to households that sell resources.
FLOW 3	The aggregate demand (AD) or total annual spending on Australian-made goods and services. $AD = C + I + G + X - M$.
FLOW 4	The annual money value of a nation's production or of goods and services — measured using Gross Domestic Product (GDP).



Resource page 1

The contribution of the ADF to the economy through EMPLOYMENT

The ADF is a major employer — one of the largest in Australia.
Read the following sources and answer the questions that follow.

SOURCE 1 Who is employed by the ADF?

As one of the largest employers in Australia, Defence has a diverse workforce of just over 91,700 people, as at 30 June 2007, made up of:

- 51,476 permanent ADF personnel comprising the Navy (12,700), Army (25,486) and Air Force (13,290)
- 19,550 Reserve members, comprising the Navy (1,850), Army (15,000) and Air Force (2,700)
- 19,506 Australian Public Service (APS) civilian staff consisting of permanent, temporary and part-time employees.

Contractors and Australian industry also contribute to the Defence workforce by providing support in a variety of areas and are an important element of the total Defence effort.

- 1 How does employing a person affect the nation’s economy? Consider as many implications as you can — not just through paying a wage, but also involving other aspects such as providing a workplace, training, superannuation, health, and so on.
- 2 Who else in the economy is affected by this employment?

SOURCE 2 Launch of new Air Force campaign

Chief of Air Force Air Marshal Geoff Shepherd today launched a new advertising campaign that aims to dispel some of the myths and misconceptions about a career in the Air Force.

“In reality, the Air Force is not just a school for ‘Top Gun’ pilots; it involves a diverse range of skills and covers a diverse range of jobs, Air Marshal Shepherd said. “A career in the Air Force provides a unique skill-set that prepares you for life.”

Whilst the new campaign remains true to the Air Force’s role of ‘Providing air and space power for Australia’s security’ it seeks to emphasise that ‘its people lie at the heart of its identity’ and that people (not just pilots) are the Air Force’s most valued commodity.

“We firstly want to raise awareness and increase understanding about the role of the Air Force.

“Secondly we want to educate potential candidates about the varied career options in the Air Force and highlight the personal relevance of a job in the Air Force; reinforcing that it offers variety and independence,” he said.

“Finally, the campaign aims to broaden the numbers of people considering a job in the Air Force and motivate qualified candidates to apply.

“It can all be summed up in one word – ‘Accomplished’. It sums up everything for which the Air Force stands and conveys to audiences a sense of achievement for both the individual and the Air Force as a whole,” he said.

- 3 How does advertising for jobs affect the economy? Again, consider as many implications as you can — such as employment of specialised consultants, media costs, employment of actors or of film crews to shoot material, and so on.
- 4 Who else in the economy is affected by this advertising?
- 5 Which of the five sectors in the diagram on page 2 are affected by these ADF activities and features?
- 6 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

This aspect of the ADF shows that it is involved in and affects the Australian economy by:

- 7 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.



Resource page 2

The contribution of the ADF to the economy through COMMUNITY SUPPORT

The ADF is often involved in community support activities.

Look at the following examples, and answer the questions that follow.

SOURCE 1 Navy sponsors surf boats

The launch of the Royal Australian Navy as the naming rights sponsor of the Australian Surf Boat Rowers League was today held at Manly beach.

“The event of surfboat racing not only provides a wonderful sporting spectacle, but like Navy, also serves an important community service by protecting Australians,” Commodore Cullen [Deputy Fleet Commander] said.

“On behalf of the Royal Australian Navy, I would like to say that I am delighted to be involved in a sport that encourages fit, healthy Australians, and performs an invaluable service to our community.”

The inaugural ‘Navy, The Team Works, Surf Rowers National League’ will showcase the sport of Surf Boat racing around the nation, in every state this summer.

A total of 24 event days and venues are planned from November to February culminating in the annual interstate Surf Boats Teams Challenge, and the 2009 Australian Open Surf Boat Championships at Broulee in February 2009.

www.defence.gov.au/media/DepartmentalTpl.cfm?CurrentId=8588

SOURCE 2 Defence jobs under 17 academy next week in Darwin

What: Around 50 U/17 players from Darwin, Katherine and Tiwi Islands; along with 25 U/17 players from the Kimberley region.

Guests: Glen Archer (AFL Army Award Ambassador) and Alwyn Davey (AFL Army Award 2007 winner), with special guest Michael Long.

Format: FITNESS SESSION – Defence Force / Army fitness advisor to take the players for a low to medium intensity cross-training fitness session.

PLAYER SPEECHES – Glen Archer & Alwyn Davey to talk to the players about being a professional AFL footballer and personal development as a professional athlete and as a person. Additionally to discuss the link between AFL football and the Army’s Teamwork, Courage & Initiative. Emphasis in particular on Teamwork.

SKILLS SESSION – Glen Archer & Alwyn Davey to conduct a short skills session with all the players.

SCRATCH MATCH – The players will be divided into 3 teams with each of the 3 teams to play one half of football against the other 2 sides. Players from the Kimberley region will be put into teams alongside U/17 Academy players.

The players will participate in the elite training program with regular training sessions during the NTFL season. There is the potential for the Academy side to play an inter-state U/17 side once a year either in Darwin or inter-state.

www.defence.gov.au/media/DepartmentalTpl.cfm?CurrentId=7910

- 1 How would such activities generate economic impacts?
- 2 How does this activity have both tangible, and intangible economic implications?

- 3 How would such activities generate economic impacts?
- 4 How does this activity have both tangible, and intangible economic implications?
- 5 How are these activities examples of ADF self-interest, as well as community support?
- 6 Which of the five sectors in the diagram on page 2 are affected by these ADF activities and features?
- 7 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

This aspect of the ADF shows that it is involved in and affects the Australian economy by:

- 8 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.



Resource page 3

The contribution of the ADF to the economy through TRAINING EXERCISES

The ADF has some wonderful training areas, and allows some other nations to use them.

How does this impact on the economy, and the environment?

Look at the following information about a study of the impacts of Australian, Singaporean and United States involvement in training exercises in Queensland, and answer the questions that follow.

Findings of the report

The study found that the impact on value-added in Central Queensland is \$42.24m.

The direct valued added is \$31.68m. with flow-on effects of \$10.56m.

Defence activities in the region are seen as major economic boosters of both diversity and capacity for jobs. Defence activity is seen as a supporter of local businesses as well as a catalyst for improved infrastructure spending. Attitudes towards Defence activities on individuals identified a range of views regarding the benefits for individuals and the capacity to increase income for some. Majority of people rejected the suggestion that cost of living rises occurred because of Defence activities or that these made excessive demands on public services and facilities.

Stakeholder focus groups also noted the positive benefit of social interaction with other cultures and

the extended cultural opportunities that occur during stand down time as well as scheduled community works. These groups also commented on the fact that Defence activity in the Shoalwater Bay area assisted in protecting that marine environment. Some negative commentary was made in regard to traffic congestion and airport noise when exercises were being conducted in the airport vicinity.

On balance, most people felt that the visits impacted neutrally or positively on their quality of life. They enjoyed the pride of showing off their region to the visitors, and felt that the exchange of cultures was a positive aspect. However, while many people appeared keen to meet or see such visitors, they then appeared reluctant to increase their families' potential contact with the visitors.

Source: Professor Daniela Stehlik et al, *A Socio-Economic Impact Study of Defence Force Activity in Central Queensland Australia*, Central Queensland University, Rockhampton, 2004 www.defence.gov.au/publications/CQU_study.pdf

- 1 Why would training exercises involving overseas troops generate economic activity?
- 2 How would local communities benefit from these activities?
- 3 What other non-economic advantages and problems do such activities create?
- 4 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?
- 5 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

- 6 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

You can learn more about the ADF and environmental and heritage management by going to www.defence2020.info, going to the Interactives, and deciding what you do with Jervis Bay.

This aspect of the ADF shows that it is involved in and affects the Australian economy by:



Resource page 4

The contribution of the ADF to the economy through OPERATIONS

One of the ADF's major activities is being engaged in combat and peacekeeping operations within Australia and around the world.

Look at the following information on one year's operations and answer the questions that follow.

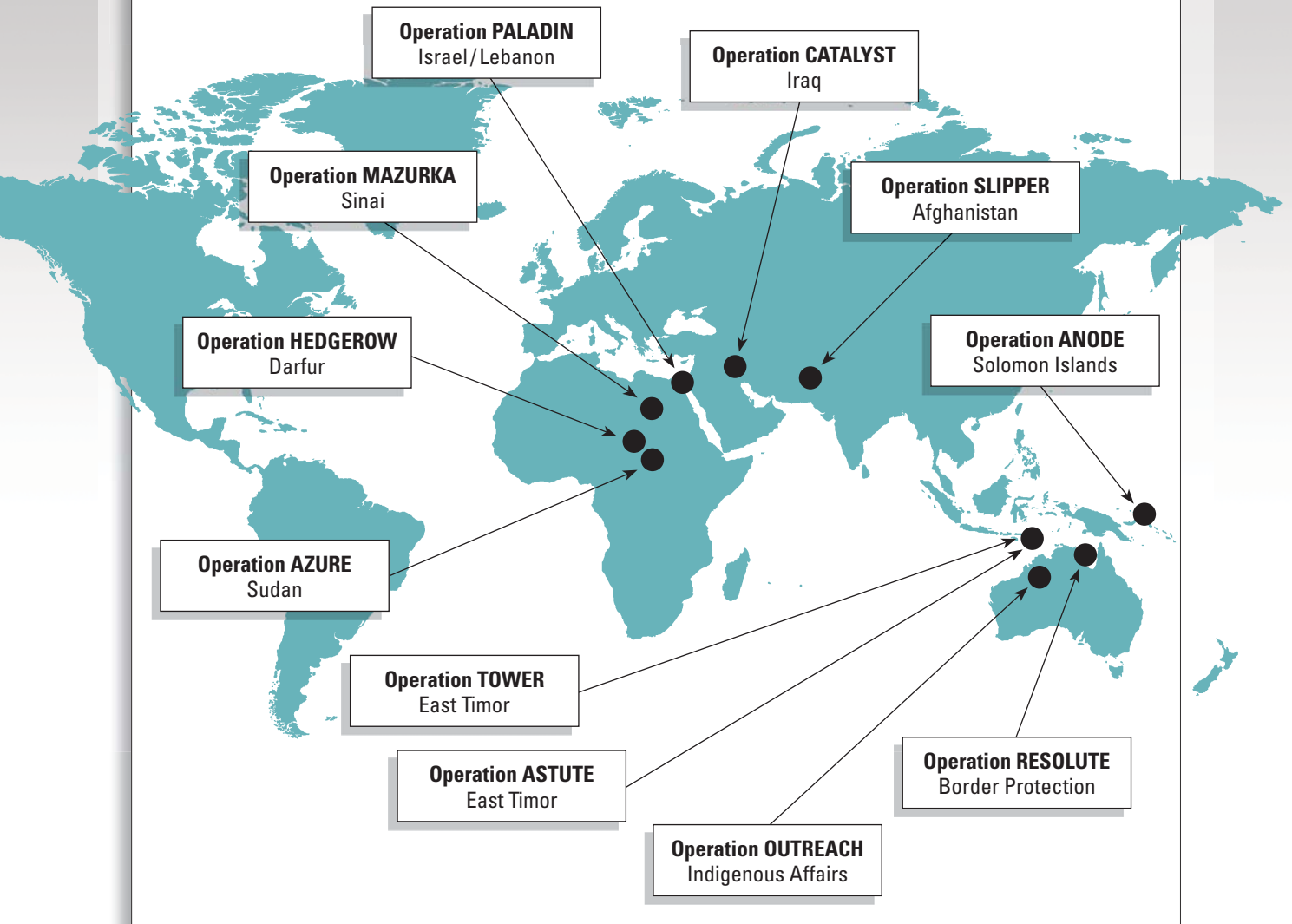
OPERATIONS

During 2007-08, the ADF engaged in 12 operations around the world. About 3,500 personnel are directly involved, both in Australia and offshore.

Operation Slipper is the ADF's contribution to the international coalition against terrorism. The majority of our contribution to the coalition is through the commitment to addressing security, reconstruction, governance and economic development in southern Afghanistan. This year Defence worked strongly on reconstruction and

undertaking tasks to address provincial needs in the fields of education, health, security and civil infrastructure. Defence continued to build the capacity of local Afghans through the trade training school in Tarin Kowt, Oruzgan. In late 2008, the ADF [transitioned] to a mentoring and reconstruction role in Oruzgan with the deployment of ADF mentors to train the Afghan National Army, aligning with the broader strategy of establishing a self reliant Afghan National Security Force.

continued >>





>>

Operation Catalyst is the ADF's contribution to the rehabilitation and reconstruction of Iraq. On 1 June 2008, the Overwatch Battle Group and Australian Army Training Team ceased operations in Southern Iraq. Over three years, the Overwatch Battle Group made a significant contribution to the transition of security responsibility from Coalition forces to Iraqi authorities. ADF trainers contributed to the individual training of around 33,000 Iraqi Army soldiers. With the conclusion of the ADF deployments in southern Iraq, a new visa policy was implemented to enable Iraqis who had worked for the Australian Government and who were consequently at some risk to permanently resettle in Australia. To date, Defence and the Department of Immigration and Citizenship have assisted 118 Iraqis that have worked for the ADF (387 people, including families) to resettle in Australia. Defence personnel remain engaged in Iraq in a range of roles in support of Coalition objectives.

Regionally, the ADF continued to contribute to the support of the governments of East Timor (Operation Astute) and Solomon Islands (Operation Anode). These operations aim to provide a secure environment for national efforts to improve law and order and good governance. On 11 February 2008, East Timorese President Horta was seriously wounded in an assassination attempt. The ADF deployed HMAS *Perth* and a response force of around 200 ADF personnel, plus Australian Federal

Police personnel, by Air Force C-17 Globemaster III and C-130 Hercules aircraft, to provide additional support to Timorese and international efforts to stabilize the country.

Defence continued to support United Nations peacekeeping missions in 2007-08, contributing observers and other specialist capabilities to missions in Africa, the Middle East, Afghanistan and East Timor.

Defence provided critical airlift support as part of the Australian Government's relief efforts following Cyclone Nargis in Myanmar (Operation Nargis Assist), and after flooding in Oro Province, Papua New Guinea, following Cyclone Guba (Operation PNG Assist).

Defence contributed to the Australian Government's indigenous community intervention initiative in the Northern Territory (Operation Outreach) and continued its long term involvement in the Army Aboriginal Community Assistance Program (AACAP). This included providing mobility, communications and sustainment support to police and civilian health teams, as well as assisting with procurement and provision of medical stores and contracted services.

Defence also supported the Asia Pacific Economic Cooperation (APEC 2007) meetings held in 2007 under Operation Deluge, through providing Defensive Counter-Air, Counter-Terrorism and transport support.

www.defence.gov.au/budget/07-08/dar/2007-2008_Defence_DAR_02_v1_s1.pdf pages 6-7

- 1 How would ADF involvement in operations have an economic impact? Consider not only the number of people involved, but also equipment, logistical supplies, communications, transport, training, and so on.
- 2 How would those nations in which operations are being carried out be affected?
- 3 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?
- 4 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

This aspect of the ADF shows that it is involved in and affects the Australian economy by:

- 5 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

You can learn more about the ADF's involvement in peace and war by going to www.defence2020.info and looking at the interactive map and the data file on Australia and Afghanistan.



Resource page 5

The contribution of the ADF to the economy through ENVIRONMENT AND HERITAGE POLICIES

An area that you might not associate with the ADF is environmental and heritage management and care.

Read the following sources and answer the questions that follow.

**SOURCE 1
Environment and Heritage awards**

Six new awards for excellence in environmental and heritage management were recently presented by the Chief of the Defence Force, Air Chief Marshal Angus Houston AC, AFC and the Secretary of the Department of Defence, Nick Warner PSM.

The annual awards recognise achievements by Defence individuals or groups who have done outstanding work to promote good environmental practice and to protect Australia’s natural and cultural heritage.

“Defence manages approximately three million hectares of land based-training areas and 120 Commonwealth heritage listed sites,” Air Marshal Houston said.

“All these sites are managed sustainably using best practice strategies.”

Department Secretary Nick Warner said environmentally friendly Defence infrastructure projects made a significant contribution to reducing greenhouse gas emissions and ensuring that water and energy were used efficiently.

This year’s winners are:

- The Russell Offices Energy Efficiency Pilot Project Management Group for excellent leadership and contributions to energy conservation.
- Dr Doug Cato, Maritime Operations Division in Defence Science and Technology Organisation, for exceptional leadership and research into the impacts of underwater sound on marine animals which has informed the development of best practice procedures for the Royal Australian Navy.
- Major Colin Bassett, Officer Commanding 176 Air Dispatch Squadron, for outstanding contributions to environmental management during conduct of Talisman Saber 07.
- Infrastructure Asset Development Branch for excellent contributions to sustainable development of the Defence estate.
- Mr Max Harker, Defence Support Southern Victoria, for excellent commitment and contributions to environmental stewardship at Simpson Barracks.
- Commander Steve Cole, Navy Headquarters, for excellent commitment and contributions to Defence environmental management.

- 1 Why might the ADF be involved in environmental and heritage management?
- 2 Suggest ways that environmental management might affect the economy. You will find both costs and savings involved.
- 3 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?
- 4 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

This aspect of the ADF shows that it is involved in and affects the Australian economy by:

- 5 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

You can learn more about the ADF and environmental and heritage management by going to www.defence2020.info, going to the Interactives, and deciding what you do with Jervis Bay.



Resource page 6 The contribution of the ADF to the economy through BASES

In 2003 the Centre of Policy Studies published a detailed analysis of the economic impacts of a number of ADF bases around Australia.

The figures for the study refer to 2002, but the results are still relevant in helping understand the impact of the ADF on the Australian economy.

The study measured the economic contribution of the selected bases in three areas:

- Direct contribution — the number of people directly employed on the base and the output generated by that employment

- The indirect contributions that arise out of the input/output linkages between the base and other industrial and commercial activities (such as retail trade and electricity supply)
- Induced non-income contributions that arise from income spent in the local economy by base employees and their households.

Look at this summary of some of the impacts, and answer the questions that follow.

Base and area	Real Value Added to the local economy		Real household consumption		Contribution to employment	Contribution to growth rate of the area's economy
	%	\$m	%	\$m	%	%
HMAS <i>Cerberus</i> , Crib Point, (Melbourne, V)	0.33	389.9	0.50	412.4	0.36	0.04
Borneo Barracks, Cabarlah (Darling Downs, Q)	1.08	63.3	1.64	65.0	1.17	0.13
Lone Pine Barracks Singleton (Hunter, NSW)	0.25	43.9	0.44	49.8	0.31	0.03
DIGO 'Fortuna' Bendigo (Loddon-Campaspe, V)	0.39	18.4	0.57	18.3	0.41	0.05
Blamey Barracks Wagga Wagga (Murrumbidgee, NSW)	1.83	83.9	2.92	87.7	2.07	0.23
Kokoda Barracks Canungra (Moreton, Q)	0.57	101.8	0.81	109.4	0.58	0.07
RAAF Base Williamtown (Hunter, NSW)	1.48	258.7	2.60	293.6	1.85	0.18
HMAS <i>Creswell</i> Jervis Bay (Illawarra, NSW)	0.38	43.4	0.60	46.1	0.43	0.05
HMAS <i>Albatross</i> Nowra (Illawarra, NSW)	1.35	155.3	2.15	165.0	1.53	0.17
Puckapunyal Military Area (Goulburn, V)	2.55	149.0	4.10	151.6	2.91	0.32
Albury Wodonga Military Area (Ovens-Murray, V)	1.13	31.5	1.74	31.7	1.24	0.14

Defence Estate Project: Regional Economic Costs and Benefits of Selected Australian Defence Force bases, Study by the Centre of Policy Studies, Monash University for the Department of Defence, 2003 www.monash.edu.au/policy/ftp/report/p5.pdf

- 1 Which of the bases studied contributed most to its local area's economy?
- 2 Why would some of these military bases contribute more than others?
- 3 What impacts would you expect these bases to have on the local non-ADF community? Why?
- 4 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?
- 5 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

This aspect of the ADF shows that it is involved in and affects the Australian economy by:

- 6 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

You can learn more about the ADF and its impacts on local communities by going to www.defence2020.info, going to the Interactives, and deciding how one community is affected by its military base. You can also see a more detailed analysis of the impacts of bases on a community in *STUDIES 2/2008*.



Resource page 7

The contribution of the ADF to the economy through INDIGENOUS COMMUNITIES

One little known aspect of the ADF is its work in remote Indigenous communities.

Look at the following sources and answer the questions that follow.

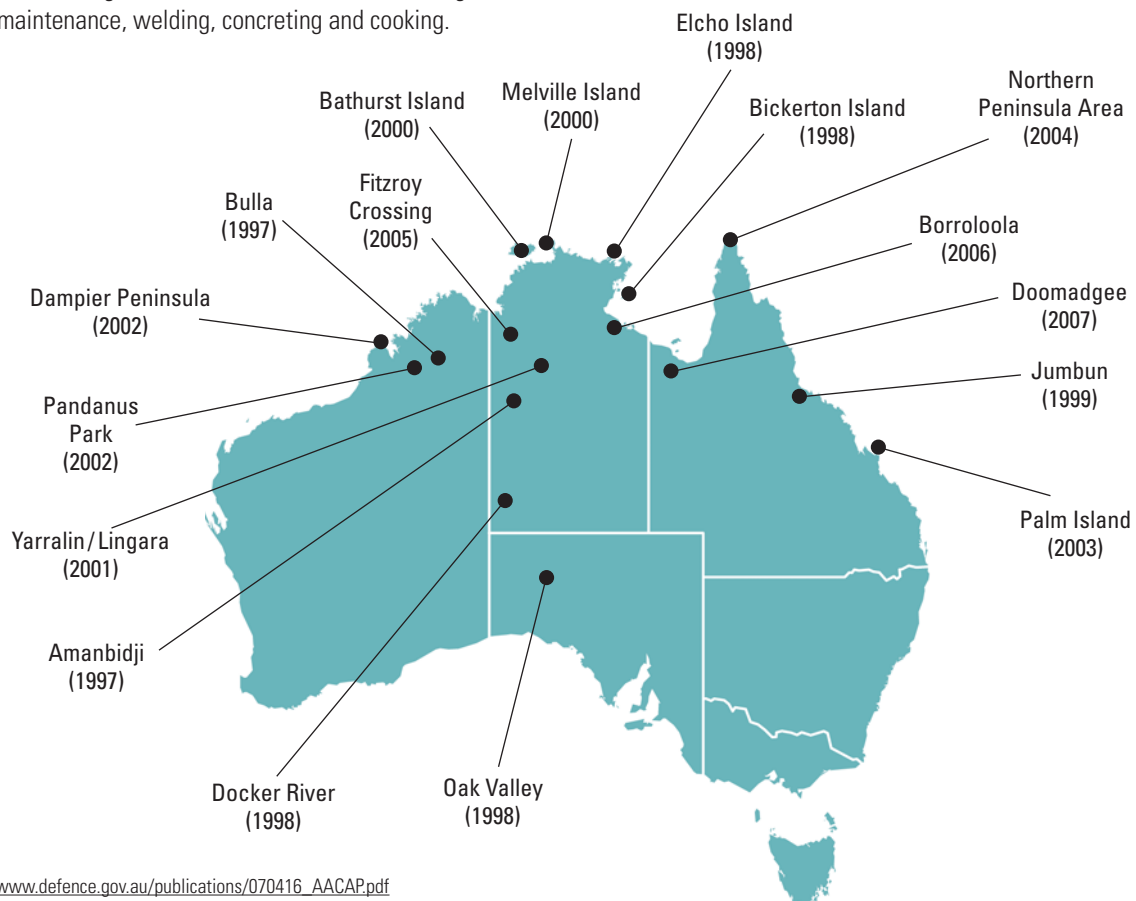
SOURCE 1 Army Aboriginal Community Assistance Program (AACAP)

The Army Aboriginal Community Assistance Program (AACAP) is a co-operative initiative between the Department of Families, Community Services and Indigenous Affairs (FaCSIA) and Army to improve environmental health conditions within remote Aboriginal communities.

Each project has a construction component, a health component and a training component. The construction component focuses on the provision of environmental health infrastructure such as housing, water, sewerage and electrical services as well as improving access to primary health care facilities by constructing or upgrading roads and airfields. The health component focuses on augmenting existing community medical, dental and veterinary programs. The training component focuses on specific skills required within the community and includes courses on construction and building maintenance, vehicle and small engine maintenance, welding, concreting and cooking.

Army is involved with AACAP at the direction of the Australian Government. Army involvement is based on its suitability to meet priorities and works proposals as determined by the steering committee. Army undertakes projects only after close, culturally sensitive consultation with the indigenous communities concerned. Works are not undertaken without the approval of the communities involved and the steering committee. Army coordinates support from across the ADF and participation from other nations.

The AACAP seeks to benefit Indigenous communities by focusing on projects that allow Army to make best use of its construction expertise and capability, by capitalising on Army's ability to holistically deliver a range of services to remote Indigenous communities, that would not normally be available in a single project.



www.defence.gov.au/publications/070416_AACAP.pdf



SOURCE 2 Tobruk helps Indigenous community

The Royal Australian Navy's (RAN) Heavy Landing Ship, HMAS *Tobruk* sailed today for the Kimberley coast in support of the Army Aboriginal Community Assistance Program (AACAP) for 2008.

Tobruk is tasked to collect Australian Army vehicles and construction equipment from the remote indigenous community of Kalumburu in the far north of Western Australia. Kalumburu is one of Australia's most isolated coastal communities and is nearly 400 kilometres from the Kimberley town of Kununarra.

AACAP is an initiative of the Federal Government and the Australian Army led program has been in operation for 12 years. Commanding Officer of *Tobruk*, Commander Peter Thompson said, "this year the Australian Defence Force will be providing equipment to upgrade the access road to Kalumburu and to construct a cyclone coded health clinic."

Two of the RAN's Heavy Landing Craft, HMA Ships *Balikpapan* and *Brunei*, have already been deployed

to the community delivering the initial supplies and equipment to set up for the AACAP projects in Kalumburu.

The involvement of RAN ships in AACAP is vitally important because of the isolation and remoteness of the community.

"The amount of equipment and supplies could not be delivered to Kalumburu without the support of amphibious Navy ships," Commander Thompson said.

Tobruk and *Brunei* will be conducting a procedure unique to amphibious ships known as a Stern Door Marriage, where equipment can be transferred from one ship to another at sea.

"We train to complete Stern Door Marriages all the time, and it is good to know that we can do them in support of a great initiative," said Commander Thompson.

www.defence.gov.au/media/DepartmentalTtpl.cfm?CurrentId=8255

- 1 How would this activity have direct economic benefits to the Indigenous community?
- 2 How would this activity have direct economic benefits to the region?
- 3 What other non-tangible economic advantages and problems might such activities create?
- 4 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?
- 5 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

- 6 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

You can learn more about the role of Indigenous Australians in the ADF by going to www.defence2020.info, going to the Interactives, and going on patrol with a Norforce warrior.

This aspect of the ADF shows that it is involved in and affects the Australian economy by:



Resource page 8

The contribution of the ADF to the economy through RESEARCH AND INNOVATION

A significant part of the ADF's activities are affected by research and innovation.

Look at the following information about the Defence Science and Technology Organisation (DSTO) and answer the questions that follow.

The Defence Science and Technology Organisation (DSTO) is the Australian Government's lead agency charged with applying science and technology to protect and defend Australia and its national interests.

DSTO delivers expert, impartial advice and innovative solutions for Defence and other elements of national security.

DSTO supports Australia's defence by:

- investigating future technologies for defence applications
- ensuring Australia is a smart buyer of defence equipment
- developing new defence capabilities
- enhancing existing capabilities by increasing operational effectiveness, improving safety, maximising availability and reducing the cost of ownership.

DSTO's capability also supports whole-of-government national security needs.

Headed by the Chief Defence Scientist, DSTO has an annual budget of approximately \$400 million and employs more than 2,300 staff, predominantly scientists, engineers, IT specialists and technicians.

DSTO has a presence in nearly every state and territory in Australia. It has its national headquarters in Canberra with research facilities in Melbourne, Edinburgh (near Adelaide), Canberra, Brisbane, Sydney, HMAS *Stirling* at Rockingham (near Perth), Scottsdale in Tasmania, and Innisfail in northern Queensland.

At all times, DSTO works closely with the industry, science and technology community to enhance its ability to support Australia's defence and national security capabilities and to contribute to national wealth.

www.dsto.defence.gov.au/page/76/

Some recent DSTO R&D projects include:

Wiki knowledge network tool for Defence

DSTO has developed an online resource, known as Logwiki, which provides a new way for Defence personnel to acquire, share and develop knowledge related to logistics

Closer look into Australian maritime heroism at Gallipoli

DSTO is participating in a marine archaeology project that aims to throw more light on the extraordinary saga of Australia's first submarine combat operation.

Cover versus concealment – the crucial difference

DSTO is conducting trials on the ability of various kinds of cover available to infantry in combat situations (such as the walls of buildings) to provide protection against fire.

Getting priorities right for military communications

During times of high network stress for military communications, congestion can limit the ability of mission-critical information to get through.

Advanced traffic management skills for autonomous vehicles

DSTO has participated in two research projects recently to give unmanned aerial vehicles (UAV) the capability of avoiding collisions in flight with their own kind, and to help unmanned ground vehicles (UGV) autonomously establish the best way to traverse difficult terrain.

Putting a face to an invisible enemy

DSTO has developed software tools that model the behaviour of invisible chemical, biological, radiological (CBR) agents under various environmental conditions in order to enhance Australian Defence Force capabilities for countering these threats.

New situational awareness capability for ADF platforms

DSTO has developed a capability for in-service Australian Defence Force (ADF) ships and aircraft to share situational awareness data using a software program called Rosetta.

DSTO achieves world record anti-missile laser power

Researchers at DSTO and the University of Sydney have developed a fibre laser that has exceeded previously published power levels for such devices by almost an order of magnitude, and at the same time has set new efficiency records.

Protecting soldiers in the line of fire

For Australian Defence Force soldiers who go into harm's way in many arenas today, the main threats they face are posed by rifle fire and the impact of improvised explosive devices (IED). DSTO is looking at ways to improve on ballistic, blast and heat protection measures for individual combatants.

Good food guide to stay fighting fit

DSTO carries out research to ensure that Australian Defence Force (ADF) personnel on field service continue to be provided with ration packs that deliver nutrition as well as good taste.

Go to www.defence2020.info and click on the Interactives to see if you would be able to plan a good ration pack.

continued >>



>> **A-SMART software a vital aid for force analysis**
 Virtually every major defence force across the Western world faces sustainability issues for force deployment, and the Australian Defence Force (ADF) is no exception. DSTO is working on a software tool to assist decision-makers in this area.

New monitoring tool takes heat off deployed personnel
 Australian Defence Force (ADF) personnel working in hot environments must manage their body temperatures in order to avoid the debilitating effects of heat-induced illness. To do this, they require information on the severity of the heat load imposed by the environment in which they are working.

TopOwl for top guns
 DSTO is investigating a new night vision system for Australian Defence Force (ADF) pilots as part of the introduction into service of the Tiger armed reconnaissance helicopter.

PRISM gives clearer look at situational awareness picture
 DSTO is working on an Electronic Support Measure (ESM) capability called the Passive Radar Identification System (PRISM) to provide better situational awareness information to military decision-makers.

Water Tunnel Technology
 The DSTO Water Tunnel is used to carry out high-quality aerodynamics and fluid-dynamics research for the Australian Defence Force.

Janus Dynamic Aerospace Vehicle Exchange Mark-up Language (DAVE-ML) C++ Interpreter
 Janus is a C++ interpreter that interfaces between aircraft flight vehicle mathematical models and aircraft datasets.

A smooth landing for amphibious operations
 A DSTO-developed modelling capability delivered recently to the Navy's Directorate of Oceanography and Meteorology (METOC) takes the bump out of amphibious operations.

World First in Satellite Communications
 In what is being claimed as a world-first, DSTO has successfully demonstrated leading edge technology that will significantly improve Defence satellite communications.

Near IR Signature Management for Combat Clothing and Equipment
 DSTO's Near IR Signature Management research has led to a revolutionary design in combat uniforms and the likelihood of future re-designs of other camouflage fabrics and materials.

Injury Prevention
 DSTO is collaborating with academia to conduct research aimed at reducing the injury rate at Army Training Command's Parachute Training School.

Smart Structures
 DSTO is conducting research aimed at exploiting emerging "smart" materials and technologies that will facilitate a more cost-efficient approach to managing the many high-value engineering assets operated by the Australian Defence Force (ADF).

Fourier Transform Ion Cyclotron Resonance Mass Spectrometry
 DSTO's research in the area of Fourier Transform Ion Cyclotron Resonance Mass Spectrometry (FT-ICR MS) is being conducted with the aim of developing fast and specific analyses of toxins and other proteins with biosecurity and counter-terrorism implications.

North West Shelf UAS Trial
 The North West Shelf Unmanned Aerial System (UAS) Trial was an Australian Defence activity that aimed to assess the maritime surveillance potential of Unmanned Aerial Vehicles (UAVs) to operate with Armidale Class Patrol Boats in providing enhanced security for the north western region of Australia.

Fibre Laser Technology for Sensor Applications
 Using a remarkable new technology called the Distributed Feedback Fibre Laser (DFB-FL). This technology has the potential to underpin the next generation of undersea sonar arrays.

www.dsto.defence.gov.au/research/archive.php?category=

- 1 How would the work of DSTO affect Australian exports?
- 2 How might this research contribute to areas of Australian life other than the ADF?
- 3 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?
- 4 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

- 5 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

This aspect of the ADF shows that it is involved in and affects the Australian economy by:



Resource page 9

The contribution of the ADF to the economy through HUMANITARIAN SUPPORT

One ADF activity is involvement in humanitarian assistance.

Read the following sources and answer the questions that follow.

SOURCE 1 Typical humanitarian missions

Operation Larry Assist assisted the Government of Queensland with the provision of humanitarian relief to the residents of far north Queensland in the aftermath of Tropical Cyclone Larry. Over the period March to April 2006, the ADF provided over 400 personnel and the following capabilities:

- 11 military helicopters
- 3 Navy Landing Craft
- 2 RAAF C-130 Hercules Aircraft.

The ADF:

- established an Engineer Group with a water purification unit capable of producing 7,500 litres of drinkable water per hour
- undertook the distribution of individual ration packs and bottled water throughout the Johnstone Shire
- supplied a field kitchen to provide facilities for the preparation of fresh food for the local population; distributed approximately 3,000 tarpaulins

- provided a bath unit to shower up to 120 persons per hour
- provided up to 500 beds, a Primary Health Care support team, and a number of Environmental Health Officers.

Operation Pakistan Assist provided humanitarian aid to the people of Dhani in Pakistan, following the earthquake on 8 October 2005.

The ADF contribution comprised a Primary Health Care Facility of 140 personnel and four Black Hawk Helicopters.

During the period November 2005 to March 2006, the ADF completed the following:

- treated over 9,500 patients
- conducted over 4,000 immunisations
- conducted three medical clinics away from the main base
- flew 74 aeromedical evacuations.

- 1 Identify some of the main costs that this assistance would incur.
- 2 What economic benefits might result from it for the Australian economy?
- 3 What other intangible benefits might result from it?

SOURCE 2 Arunta rescues badly injured French sailor

The crew of the Royal Australian Navy ship HMAS *Arunta* has successfully rescued the badly injured skipper of a yacht in challenging conditions in the Indian Ocean, approximately 850 nautical miles off the Western Australian coast.

Frenchman Yann Elies was competing in the round-the-world 'Vendee Globe' yacht race when he suffered a broken femur.

Race officials had classed Mr Elies as being in a life-threatening condition.

Using a Rigid Hull Inflatable Boat, specially trained crew from HMAS *Arunta* extracted Mr Elies from his yacht, *Generali*, earlier this evening.

A doctor from the Royal Flying Doctor Service, embarked in the Anzac-Class frigate, has begun administering emergency medical treatment.

The ship's Commanding Officer, Commander Stephen Bowater said his crew has displayed exceptional professionalism during the two days to reach the French sailor.

continued >>



>>

“From receiving the order to deploy late on Thursday evening to sailing out of HMAS *Stirling* in the very early hours of Friday morning, we only had a precious few hours to get the ship operational,” Commander Bowater said.

“This was achieved without compromise to the safety of the crew or the operation of the ship.

“We have proven again that the Navy constantly maintains the ability to respond at short notice to emergency situations.”

CMDR Bowater said Mr Elies is receiving excellent medical care from the RFDS doctor and is resting comfortably.

HMAS *Arunta* is now returning to port, where Mr Elies will be transferred to a civilian hospital.



www.defence.gov.au/media/download/2008/dec/20081223/20081220ran8109430_164_lo.jpg



www.defence.gov.au/media/download/2008/dec/20081223/20081220ran8109430_206_lo.jpg

- 4 Identify some of the main costs that this assistance would incur.
- 5 What economic benefits, if any, might result from it for the Australian economy?
- 6 What other intangible benefits might result from it?
- 7 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?
- 8 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

This aspect of the ADF shows that it is involved in and affects the Australian economy by:

- 9 Explain what these activities also tell us about the ADF and citizenship.



Resource page 10

The contribution of the ADF to the economy through EQUIPMENT

One of the main features of the ADF is its equipment.

Look at the following information about the nature of ADF equipment, and its procurement by the ADF, and answer the questions that follow.

SOURCE 1 ADF capability

The changing strategic environment highlights the need for the ADF to be a flexible and adaptable defence force, which is ready to be deployed at short notice and can be sustained on operations for as long as required. Capability is the power to achieve a desired effect in a nominated environment in a specified period of time, and to sustain it for a designated period.

Defence maintains a force structure with the following elements:

Navy

- a surface combatant force of five Adelaide-class guided missile frigates (to be reduced to four in early 2008) and eight Anzac-class frigates
- a naval aviation force comprising 16 Seahawk helicopters, six Sea King helicopters and 13 Squirrel helicopters
- a surface patrol capability comprising 14 Armidale-class patrol boats, manned by 21 crews
- six Collins-class submarines
- an afloat support capability consisting of an oil tanker and a replenishment ship
- a mine warfare force comprising six Huon-class coastal mine hunters, two auxiliary minesweepers and two clearance diving teams
- an amphibious lift force comprising two amphibious landing ships, one heavy landing ship and six heavy landing craft
- a hydrographic force consisting of two Leeuwin-class hydrographic ships and their embarked survey motor boats, four Paluma-class survey motor launches, a laser airborne depth sounder aircraft and a deployable geospatial support team (formerly the Deployable Survey Unit).

Army

- a special forces capability comprising a Special Air Service regiment, a Regular Army commando battalion; an Army Reserve commando regiment and an Incident Response Regiment
- a medium combined arms operations capability consisting of a tank regiment, a cavalry regiment, one mechanised infantry battalion, a medium artillery regiment; a combat engineer regiment, a signals regiment and a combat service support battalion

- a light combined arms operations capability based on 3rd Brigade, consisting of an infantry mobility vehicle squadron, three light infantry battalions, a field artillery regiment, a combat engineer regiment, a signals regiment and a combat service support battalion
- a motorised combined arms capability, based on 7th Brigade, consisting of a cavalry regiment, a motorised infantry battalion, a field artillery regiment, a combat engineer regiment, a signals squadron and a combat service support battalion
- a regional surveillance capability based on three regional force surveillance units
- an aviation capability based on 16th Brigade consisting of two aviation regiments and two aviation squadrons operating both rotary-wing and fixed-wing aircraft including Black Hawk, Kiowa, Iroquois and Chinook helicopters, and leased King Air fixed-wing aircraft
- a ground-based air defence capability which maintains a ground-based air defence system consisting of RBS-70 shoulder-launched missile systems
- a combat support force, consisting of a surveillance and target acquisition regiment, an engineer support regiment headquarters, two Regular Army engineer construction squadrons, a construction engineer works section, a topographical survey squadron, a signals regiment, an electronic warfare regiment, an intelligence battalion, a military police battalion, a ground liaison group and a combat training centre
- a logistic support capability based on the 17th Brigade consisting of a signals regiment, three force support battalions, a personnel support battalion, three health support battalions and a psychology unit
- a protective operations capability drawn from the Army Reserve, with six brigades each comprising two or three infantry battalions; a light cavalry unit and combat support and logistic support units.

Air Force

- an air combat force of 17 F-111C, four RF-111C and 71 F/A-18 aircraft, crews, weapon systems and support infrastructure. 33 HawkLead-In fighter aircraft and four PC-9 Forward Air Control aircraft also contribute to this force

continued >>



>>

- a combat support force comprising two expeditionary combat support wings and a health services wing
- a surveillance and response force, consisting of air traffic control radar, tactical air defence radars, the Jindalee Operational Radar Network – a wide-area surveillance system monitoring Australia’s northern approaches, and 19 P-3C Orion aircraft, crews and weapons systems
- an airlift force consisting of 24 C-130 Hercules, 14 DHC-4 Caribou, two Boeing 707, and five VIP aircraft – two Boeing 737 BBJ and three CL604 Challenger aircraft. Two C-17 Globemaster aircraft have been delivered and a further two will be delivered during 2008.

Year Book 2008 www.abs.gov.au

1 Why would the ADF need such expensive and specialised equipment?

2 List some of the elements that follow on from having equipment — such as repairs, housing of equipment (on air bases or dock facilities), training of personnel to use the equipment, and so on.

SOURCE 2 Defence Materiel Organisation (DMO)

The DMO equips and sustains the ADF through the acquisition and sustainment of capital equipment. The operational success of the ADF depends on the DMO providing equipment on time, on budget, and to the required levels of capability, quality and safety. In July 2005, the DMO became a prescribed agency under the Financial Management and Accountability Act 1997(Cwlth). The DMO is a professional service delivery organisation, principally driven by the defence policies and objectives set by the Australian Government and the requirements of the ADF. It aims to be a business-like, accountable and outcome-driven organisation with a strong and close relationship with the Government, its Defence customers and industry. The DMO currently manages over 200 major capital equipment projects (those with a contract value

of more than \$20m), and over 200 minor projects, across more than 50 locations in Australia and overseas. It also purchases and maintains equipment in support of Defence operations. The DMO manages one of the largest inventories of physical assets in the country, with \$23.2b of in-use specialised military assets, \$8.8b of asset under construction, \$1.8b of general stores and fuel, and over \$2.1b of explosive ordnance.

The demands of the Defence Capability Plan require an increase in excess of 30% in the new project work rate of the DMO, and industry, over the next five years. The DMO will manage some \$100b worth of work on acquisition and sustainment projects over the next decade, with about 65-70% to be spent in Australia.

Year Book 2008 www.abs.gov.au

3 What would be the benefits and disadvantages of using locally-produced equipment?

4 What would be the benefits and disadvantages of using overseas-produced equipment?

SOURCE 3 Skilling Australia’s Defence Industry (SADI) Program

The SADI Program initiative addresses the significant shortfall in the quantity and quality of defence workforce skills available to defence industry to ensure that the Australian Defence Force has the capabilities it needs to defend Australia and its national interests.

The SADI Program requires commitment and up front investment from both Defence and industry. The long-term benefits of this commitment are:

- increases in both the quality of the existing workforce skills and the quantity of skilled personnel available to industry
- delivery of the capability required by the Australian Defence Forces on time, on budget and to the required standards

- growth in Australia’s specialised skills base by enlarging the pool of qualified engineers, technicians, tradespeople and project managers through the creation of additional ‘smart’ jobs
- the provision of opportunities for rural and regional Australia where many major Australian Defence Force platforms (and their components) are constructed and/or supported through life
- enhanced opportunities to participate in the development of a range of innovative defence technologies.

The SADI initiative shares the responsibility for skills growth and development between industry and government and represents a win-win solution to both the defence of Australia and Australian defence industry.

www.defence.gov.au/dmo/id/sadi/index.cfm



5 How would this skilling program benefit the ADF?

6 How would it benefit non-military parts of the economy?

SOURCE 4

Australia and United States defence satellite communications cooperation at Geraldton

Construction activity is expected to commence on a joint Australian and United States defence satellite communications ground station at the Australian Defence Satellite Communications Station (ADSCS) Geraldton in the third quarter of 2008.

The joint ground station will support the US Navy's Mobile User Objective System (MUOS), which is a satellite-based mobile phone network designed to support US, Australian and allied military users. Governance arrangements for the ground station were concluded in October 2007 and, as with all joint facilities in Australia, this system will be operated with the full knowledge and concurrence of the Australian Government.

The MUOS ground station will comprise three small buildings housing the electronic infrastructure; power and spares; three 18-metre satellite dishes; and two smaller antennas. Once complete, it will be unmanned and will require only call-out contractor maintenance support.

Satellite communications are vital to the Australian Defence Force and our security. The United States is a world leader in the field of commercial and military satellite communications technology. Our collaboration provides Australia with increased access to US global communications capabilities as well as technical partnering, shared infrastructure and support services for our joint satellite communications projects.

www.defence.gov.au/media/AlertTpl.cfm?CurrentId=8007

7 Why would construction programs be a significant part of the ADF in the economy?

8 How would this impact on local communities?

9 Which of the five sectors in the diagram on page 112 are affected by these ADF activities and features?

10 Complete this summary and report back to the class on what this aspect has told you about the ADF and the Australian economy:

11 Explain what these activities also tell us about the ADF and citizenship.

After all summaries have been reported back to class use this information to create your annotated diagram of the ADF and the Australian economy.

This aspect of the ADF shows that it is involved in and affects the Australian economy by: