

Mr Ian Dundas  
Committee Secretary  
House of Representatives Standing Committee  
on Primary Industries and Regional Services  
Parliament House  
CANBERRA ACT 2600

Dear Mr Dundas

Thank you for your letter of 30 April 2001 to the Secretary of AFFA, Mr Michael Taylor requesting additional information in relation to the Committee's Inquiry into Development of High Technology Industries in Regional Australia Based on Bioprospecting and Bioprocessing. I note the Committee's particular interest in the "drivers" in the department in relation to the development of bioindustries. The Committee also sought AFFA's perspective on access to biological resources and possible development of a nationally consistent approach on access.

On the first of these issues, AFFA's principal objective is to secure more sustainable, competitive and profitable Australian agricultural, food, fisheries and forestry industries. A key strategy for achieving this objective is by taking a through-chain approach that fosters R&D, innovation and the development of new industries through programs which act as "drivers" to help the competitiveness of our industries, including bioindustries. In particular, we see access to, and high adoption rates of, world-class innovations as critical to the future of portfolio industries in rural and regional Australia. This includes the uptake of both high and low technology innovations, as well as novel technology (such as genetic engineering and bioindustries) and more traditional technologies (such as traditional plant and animal breeding). Such programs also both directly and indirectly support the development and availability of agricultural resources that are key inputs into further processing industries. The important thing is that available funding for R&D, innovation and new industry development is directed to those areas likely to deliver the greatest benefits to portfolio industries. While a more detailed discussion on these issues is provided in Attachment A, a brief discussion of the key "drivers" is provided below.

With respect to R&D programs as a "driver", the matched industry-government funding arrangement for rural research and development provides an investment in the future of around \$350 million a year. While this expenditure will be spent in part on R&D relating to bioprospecting and bioprocessing, to date these areas have not been singled out as major priority areas in their own right. At the same time, it is worth noting that both the Minister for Agriculture, Fisheries and Forestry, the Hon Warren Truss MP, and the Parliamentary Secretary to the Minister, Senator the Hon Judith Troeth have written to the chairs of rural R&D Corporations (RDCs) on broad priority areas for research, and highlighted biotechnology (of which bioprospecting and bioprocessing are subsets) as a priority area. In future, we will raise these issues with our Ministers and Parliamentary Secretary for consideration in the guidance they give the RDC chairs and other program advisory councils from time to time. As the RDCs are required to take account of Government priorities in their planning processes, this provides a good opportunity for the government to influence future directions of R&D.

As a second important “driver” the portfolio also funds a range of innovation activities that can encourage bioprospecting and bioprocessing. In particular, the AAA - Farm Innovation Program (FIP), which is part of the *Agriculture - Advancing Australia* (AAA) package of initiatives, provides grants to assist the adoption of R&D by portfolio industries, including the bioprospecting and bioprocessing industries. AFFA will bring the important bioprospecting and bioprocessing issues to the attention of the relevant Advisory Council for the FIP. AFFA is also involved in ensuring access by portfolio industries to generic government programs in support of innovation (including under the Backing Australia’s Ability statement and the National Biotechnology Strategy).

The third important “driver” relates to policies assisting the development of new industries. Of note, under the Backing Australia’s Ability statement, the Government recently extended the New Industries Development Program with an additional \$21.7 million over 5 years. NIDP supports the commercialisation of new high value agribusiness products, services and technology. As with the FIP, AFFA will bring the issues before the Inquiry to the attention of the relevant Advisory Committee.

As opportunities arise, the Department also promotes initiatives for the supply of agricultural products as feedstock for industries outside the agriculture sector. For instance, officers recently attended meetings with Paul Tebo, Global Vice President of DuPont which highlighted DuPont’s interests in moving more significantly into the life sciences, through such projects as manufacture of Sorona<sup>TM</sup> polymer. Such industry contacts will continue, including as a result of DuPont’s interests in portfolio work on identity preservation and segregation of agricultural products, with its potential for supporting significant value adding. AFFA has also supported biofuel projects and Minister Truss recently announced funding for two ethanol projects under the Greenhouse Gas Abatement Program.

The second issue raised by the Committee related to “access to biological resources” and “benefit-sharing”. This is an evolving area of policy with biological diversity conservation, industry development, social and equity dimensions, and which arises both within Australia and in response to international drivers. Complexities arise because governments already have in place a diverse set of measures for controlling access and for generating public or private benefits, all of which interact to determine the existing pattern of rights and obligations, and the sharing of benefits from access to biological resources. Any measures, domestic or international, that change the existing pattern of rights and responsibilities are likely to create ‘winners and losers’ and therefore involve compromise.

Governments therefore need to be careful how they respond to “access” and “benefit sharing”. They need to distinguish between their interests as an owner of biological resources and their wider interests and roles and responsibilities. The latter includes setting the institutional framework that determines the rights to own, use and access, and benefit from the use of biological resources and also measures to promote investment and innovation. The institutional framework encompasses resource management and utilisation, intellectual property and biodiversity conservation instruments and regimes. Changes to these regimes, such as the application of a “one size fits all” policy for resource access and benefit sharing, could undermine the

structure of existing rights and obligations and create uncertainties that could have a negative effect on investment over the long term. Given the substantial interdependencies, it is essential that any new measures or responses for “access” and “benefit sharing” are addressed through open and transparent whole-of-government processes, both within and between levels of government.

AFFA contributes in various ways to help Australia achieve its interests in access and benefit sharing involving biological resource use. In particular, AFFA has a leading role domestically and internationally in evolving discussions on issues relating to access and benefit sharing. AFFA leads development of Australian policy, through whole of government processes, on access and benefit sharing in matters involving access to plant genetic resources for food and agriculture. AFFA also represents these interests internationally in negotiations in the Food and Agriculture Organisation. A major focus for AFFA is working closely with other Commonwealth, State and Territory and non government stakeholders to ensure that new domestic and international arrangements for access and benefit sharing deliver practical, workable outcomes for industries and sectors which rely on, use and transform biological resources into new products, including in biotechnology and bioprocessing industries. Underpinning AFFA's overall approach is a recognition that continued access to a sustainable and healthy biological resource base is integral to the future sustainability of agriculture, fisheries and forestry sectors, including in benefiting from biotechnology and potentially new large scale bioprocessing activities.

AFFA proposes in this submission that Commonwealth, State and Territory governments can further represent their interests in access and benefit sharing by jointly endorsing an agreed set of policy principles on access and benefit sharing, along the lines of principles recommended in the Commonwealth-State Working Group on Access to Biological Resources (a copy of this report was requested by the Committee and has been provided, with a further copy attached to this submission – Enclosure 1). These principles recognise that Australia has interests at stake as both a source of, and an importer of, biological resources. They also recognise that there are different roles and responsibilities of governments under Australia's constitution in matters relevant to access and benefit sharing. Such a broad based national policy commitment should be supported by clear policy statements on the part of each of the Commonwealth, State and Territory governments describing the nature of their individual interests in access and benefit sharing, including as owners of resources and in the context of their existing roles and responsibilities. AFFA notes that some States and Territories have adopted responses to access and benefit sharing through a broadly based policy framework without new regulations but in ways which integrate access and benefit sharing within existing measures. These issues are discussed in more detail in Attachment B, and in the AFFA submission to the Voumard Inquiry into Access to Biological Resources in Commonwealth areas, at Attachment C.

In conclusion, while AFFA recognises the substantial potential for bioprospecting and bioprocessing we are also conscious of the risks involved, including in relation to Australia's ability to retain the benefits in Australia. We are also conscious of the wide range and diversity of projects that are possible in the bioprospecting and bioprocessing area, as well as the prospects for developments in other areas of possibly equal or greater benefit to Australia. Consequently, AFFA's approach has been to provide general drivers of R&D, innovation and development of new

industries that provide opportunities for new technologies and innovations to be adopted and commercialised across the spectrum of technologies. Given limits to funding, activities are supported on a case-by-case basis rather than broad sectors of activities being supported at the expense of priorities in other areas. This approach already results in a number of important bioprospecting and bioprocessing activities being driven by AFFA programs, but also allows for important activities to be funded and developed in other areas. Within this broad approach, AFFA remains committed to encouraging the development of bioprospecting and bioprocessing industries in the future as opportunities arise in these areas.

We would be happy to respond to any further questions that the Committee may have on this matter. The main contact officers for this issue are myself on telephone 6272 5467, Mr Brian Jones on telephone 6272 4897 and Ms Kristiane Herrmann on telephone 6272 4670 on access issues.

Yours sincerely

PAUL MORRIS  
Executive Manager  
Innovation & Operating Environment

19 June 2001

List of enclosures:

ATTACHMENT A: AFFA support for the development of bioindustries (“the agricultural basis for future ‘clever’ industries”)

ATTACHMENT B: A national framework for accessing, and benefit sharing from, biological resources

ATTACHMENT C: AFFA Submission to a Public Inquiry into Access to Biological Resources in Commonwealth Areas

ENCLOSURE 1: Report of Commonwealth-State Working Group on Access to Biological Resources

## **AFFA support for the development of bioindustries (“the agricultural basis for future ‘clever’ industries”)**

### **1. Background**

Mr Dundas’ letter of 30 April 2001 to Mr Taylor asked:

*“The committee would like to know whether AFFA is carrying out any work on the agricultural resources needed for the development of bioindustries. For example:*

- *Is AFFA tracking these developments?*
- *Is AFFA discussing these issues internally, or is it involved in any forums, with businesses such as DuPont?*
- *Is AFFA interacting with research and farming groups in assessing these possibilities?*

*You might like to note, as highlighted on the attached pages from the transcript of the hearing, that the Chair asked:*

*What is AFFA doing to make sure that we do not lose the window of opportunity that we have with our megadiversity for developing a bioprospecting and bioprocessing industry in Australia?*

*And*

*I am really looking for the drivers in the department.”*

### **2. General comments**

As mentioned in our letter, Government support for R&D, innovation and development of new industries is one of the main strategies adopted by AFFA in pursuit of its principal objective – to secure more sustainable, competitive and profitable Australian agricultural, food, fisheries and forestry industries. In that sense, AFFA’s R&D, innovation and new industry development programs are key “drivers” available to the Department. AFFA also works with a range of stakeholders (including research and farming groups and other government agencies) to encourage and facilitate the development and up take of innovation, and to ensure that portfolio industries have access to generic government programs in support of innovation (including under the Backing Australia’s Ability Statement, the National Biotechnology Strategy and through Cooperative Research Centres). While these are programs that are generally available to support a range of activities beyond the bioprospecting and bioprocessing industries, they have provided assistance of direct relevance to development of these industries and to assist in providing the agricultural resources needed to promote them. Specific examples are provided below.

### 3. Examples of support for bioindustries

#### Research and Development

AFFA maintains strong links with the rural Research & Development Corporations (RDCs). The RDCs' matching funding arrangements represent one of the longest standing and most successful Government commitments to innovation. The Government's matching funds are provided to the RDCs to encourage investment in research and development, with the Corporations funding more than \$341 million of rural related R&D in 1999-2000.

The priorities of the RDCs are fairly closely aligned with portfolio priorities for rural research and development, including biotechnology. In December 1999, the Minister for Agriculture, Fisheries and Forestry, the Hon Warren Truss MP, wrote to the Chairs of the RDCs outlining the Government's priorities for research and development. A similar letter was sent by the Parliamentary Secretary to the Minister, Senator the Hon Judith Troeth, in May this year reiterating these priorities. The priorities highlighted were:

- sustainable management and use of our soil, water, air, vegetation and fauna resources integrated into farming and land use systems;
- a whole of industry approach to production, processing and marketing to ensure the chain works to its best advantage;
- development of biotechnology, along with sensitive handling to accommodate consumers' concerns;
- trade and market access negotiations;
- maintenance and enhancement of our clean green image;
- addressing food safety concern of consumers; and
- cultivating creativity and innovation among our human resources.

The priority given to biotechnology in this letter is consistent with the broader priority that has been given to this area by the Government. The letters to the RDCs noted that biotechnology has the potential to impact right across the production and marketing chain and clearly will be a significant factor in the marketplace.

While priority was given in the RDC letters to biotechnology, of which bioprospecting and bioprocessing are subsets, there has not been specific emphasis given to these areas. Despite this, there is already identifiable work by some RDCs that contributes to bioindustries – with some examples given below. A more general assessment of effort in this area will be worth considering when reviewing actions by the RDCs against the above stated priorities. It may also be worth being more specific in future priority statements as to the importance of these areas of research and AFFA will raise this with Portfolio Ministers and the Parliamentary Secretary for consideration in the guidance given to RDC chairs and program advisory councils/committees from time to time.

As mentioned, there is already evidence that some RDCs are conducting valuable work in these areas. The Rural Industries Research Development Corporation

(RIRDC) for example, funds a number of projects drawing on utilising Australia's biodiversity, which would be of potential interest to the Committee.

*RIRDC Research Projects completed in 1999-2000 included:*

- a cholesterol-lowering extract from garlic: opportunities for an Australian Industry
- investigation into safety and food values of certain *Prostanthera* species;
- economic market analysis of fibre crops in Australia-identifying opportunities to produce non-wood fibres and which fibres have the greatest potential for profitability and market growth; and
- characterisation of anti-viral compounds in Australian bush medicines.

*RIRDC Research in progress 2000-2001 includes:*

- food safety of Australian plant bush foods (identifying endogenous anti-nutritive factors that may present a health hazard in major plant species currently used in industry); and
- innovative products from indigenous Australian bushfoods (object to evaluate valuable isolates from identified bushfoods).

RIRDC also released a comprehensive report (titled "New Pharmaceutical, Nutraceutical and Industrial Products") in November 2000 exploring the potential for Australian agriculture to supply outputs for the new pharmaceutical, nutraceutical and industrial products that have emerged with the revolution in biotechnology, information technology and growing consumer awareness that diet is an important factor in health and quality of life. RIRDC is proposing to hold an open forum late in 2001 to discuss possible strategies arising from this report.

AFFA is also supportive of Government supported research of relevance to this portfolio but delivered through other agencies. The Cooperative Research Centre (CRC) program currently has a number of centres providing relevant research. For example, the *CRC for International Food Manufacture and Packaging Science* is researching a low-cost biodegradable starch-based packing material as an alternative to conventional plastics. (On some predictions, by 2010-2015, the raw material costs of biopolymers produced from plants could be competitive with those made from oil). At the moment, Australia is a major importer of polymers and polymer products and there is extensive research and development in the area of biopolymers. The above CRC is also planning to establish a starch-based biodegradable packaging facility. Such developments would be beneficial to the industry partners in the CRC - Visy Industries, Tassal Limited, Arnott's Biscuits and Goodman Fielder. Areas of research expertise for this CRC also include biological treatments for fibre recycling and enzyme modification and processing.

Similarly, the *CRC for Bioproducts* focuses on developing commercially valuable materials produced from plants and other living organisms, such as natural colours, nutraceuticals, pharmaceutical intermediates and biopolymers. It aims at new industries based on novel bioproducts and bioprocesses, and aims to improve the efficiency and profitability of existing industries involved in production and use of bioproducts.

## Innovation

With regard to innovation, the portfolio's main vehicle for promoting this is the (AAA - Farm Innovation Program (FIP) under Agriculture: Advancing Australia (AAA) package of initiatives. This is a 2-year pilot program ending in 2001-02 with funding of \$17.2 million and aims to encourage businesses in the farming, food, fisheries and forestry sectors to adopt innovative practices, processes and products. Funding of up to half the eligible cost of each project is provided. One of the Program's most important attributes is that the funded businesses will work with the Government to make others in the industry aware of exactly what they have done, how they did it and how it helped their business. Others can then judge for themselves whether or not they would benefit.

Although this program has had only two funding rounds to date with 29 projects funded, already there is interest from bioprospecting and bioprocessing industries. Of note, Essential Oils of Tasmania will receive up to \$50,325 under the second round of the Program to develop Australia's first native pepper (*Tasmannia lanceolata*) plantation. The project will allow the commercial production of dried native pepper leaf, from which *lanceolata* oil will be extracted, and follows extensive technical, genetic and market research. The project involves moving away from harvesting in the wild to plantation production, thereby producing environmental benefits. Furthermore, the product has significant market potential, particularly if the product receives US regulatory approval. Not only could this project's success open new industry opportunities with enhanced employment and investment in regional Tasmania, it could also provide a viable alternative crop for farmers. Moreover, this is a clear example of how AFFA programs can support the agricultural resource base for future bioprocessing.

## New industries development

AFFA's main program in this area is the New Industries Development Program (NIDP). The extension of the NIDP, with an additional \$21.7m over five years under the *Backing Australia's Ability* initiative, is helping Australian agribusiness enterprises and their commercial partners to reduce the risks inherent in the initial commercialisation of new high value products, services and technology to generate new market opportunities. Pilot commercialisation projects (PCP) funded through the program will take proposed projects that can demonstrate first and foremost the proposed project's potential for market success (that is, the initial market assessment and R&D stage, e.g., laboratory or trial crop stage, of the project should have already been completed) through formation of chain relationships, pilot trials and development of business strategies and proposals to a state of readiness for full-scale commercial investment.

Particular examples of relevance include:

- Shoalhaven Starches, which is based in the Nowra region of NSW, will receive \$100,000 to commercialise a functional wheat protein it has developed. This product has the potential to capture the isolated soya protein market realising a medium term return of almost \$150 million.



- Botanical Resources Australia Manufacturing Services, based in Ulverstone, Tasmania, will receive \$100,000 for activities to help boost the commercial potential of its high value Echinacea (*Echinacea purpurea*) products. Echinacea is a herb best known for stimulating the immune system, and is used against colds and flu, minor infections and a host of other major and minor ailments. This native American herb has an impressive record of laboratory and clinical research, now becoming prescribed by mainstream medical practitioners. Sales for this company are expected to be worth \$4 million within five years, and the company should develop as Australia's largest and most efficient Echinacea producer.
- The Australian Cartilage Company, based in Cootamundra, NSW, will receive \$50,000 to increase its processing of bovine cartilage into a liquid form for human therapeutic use by arthritis and cancer sufferers. The commercial benefits to Australia are expected to be in the vicinity of \$5 million within five years.

#### Other support

There are a number of other examples where AFFA has been active in developing industries that provide the base for future developments in bioprospecting and bioprocessing. Industrial product potential is high for a range of crops including grains and sugar in making ethanol, methanol and bioplastics. Commercial viability, however, may be dependent on yet higher and sustained oil prices, improved processing efficiency and/or generation of external benefits.

AFFA officers recently met with DuPont to discuss the company's interest in moving significantly into bioprocessing. As reported by CSIRO in their submission to the Committee, DuPont's annual report states the company's intention to move towards increasing its revenue from renewable resources by 2010. DuPont recently started up a new continuous polymerization plant in the United States for the manufacture of Sorona™ polymer. The polymer is based on corn sugar and will be used to spin into apparel-grade textile fibres, and is the first product ever developed by the company's Bio-Based Materials business. For the moment the polymer is made using petrochemical feedstocks, but there would be a switch to corn-based feedstock once process economics and market demand justify the change. The Department will continue to meet with industry to encourage, and facilitate where possible, the development of such industries in Australia.

Other examples of AFFA's support in these areas include:

- AFFA commissioned a study into the commercial viability of the production of ethanol fuel by the Australian sugar industry, a draft of which was completed in May 2001. The study was presented for consideration to a Round Table meeting of agricultural industry representatives convened by Minister Truss on 28 May 2001. Consideration of the report by Government and industry continues.
- On 1 April 2001, Minister Truss announced \$8.8 million of federal funding from the Commonwealth's Greenhouse Gas Abatement Program, to boost British Petroleum's (BP) distribution of ethanol-based fuel for Queensland's east-coast

market. The funding will allow BP to complement petrol production at its Bulwer Island refinery near Brisbane with a fuel grade petrol/ethanol blend. BP plans to tender for the long-term supply of ethanol made in Australia from renewable sources, with the Queensland sugar crop being one possible source for the ethanol.

- On 6 April 2001, Minister Truss announced a further commitment to ethanol as an alternative fuel, with the provision of \$7.35m for an ethanol project based at the Mossman Central Sugar Mill. The funding will assist the Douglas Shire Council and the Mossman Central Mill Company to undertake a \$34 million project, which will include the development of an ethanol production plant initially using by-products from the sugar mill, and stepping up the level of production using sweet sorghum in later years.
- Finally, AFFA (through the Plant Breeders Rights Office) also establishes property rights for new varieties of plants developed from research activities. This helps provide certainty of ownership of intellectual property relating to new plant varieties, some of which could emerge from bioprospecting.

## **A national framework for accessing, and benefit sharing from, biological resources**

### **1. Background**

Mr Dundas' letter of 30 April 2001 to Mr Taylor asked:

*“The issue of a nationally consistent approach to accessing biological resources is complex and benefit sharing adds to the complexity. Your staff at the hearing pointed this out to the committee, but did not elaborate.*

*“The committee would appreciate clarification of the complexities referred. It would also like to know what sort of scheme AFFA would like to see put in place that would address these complexities.”*

### **2. General comments**

The concepts of “access to biological resources” and “benefit sharing” embody a range of underlying biological diversity, conservation, industry development, social and equity objectives. Complexities arise because both concepts are already given effect through a diverse set of legislative, policy and management regimes to achieve the underlying objectives, including those relating to resource management and utilisation, intellectual property and conservation. These existing regimes include arrangements that deliver benefits for Australia from the rights to own, access and use biological resources and through measures which promote investment and innovation. Any responses involving new or additional measures to create additional benefits from access need to be through whole of government processes to avoid creating uncertainty and have due regard for sectoral needs and any shift in the pattern of benefits.

Portfolio natural resource management policies, industry development and innovation policies and activities already contribute to and provide a well established enabling framework through which to achieve biological resource use sustainability, equity and industry development concerns for the benefit of all Australians. AFFA's submission to a recent Environment and Heritage portfolio inquiry (Voumard inquiry – see Attachment C) provides examples and suggests how the Commonwealth might additionally address biodiversity conservation objectives in the context of its interests in access and ownership in respect of Commonwealth areas.

International drivers, expressed through broadly defined international trade, environment, intellectual property and development assistance (aid) objectives, are adding to complexities in access and benefit sharing. These drivers are influencing how countries exercise their sovereign rights over biological resources in their dealings with other countries, including in cooperative arrangements from which all countries can benefit.

AFFA represents Australian interests in international discussions seeking to establish new international cooperative arrangements concerning plants for food and agriculture, such as wheat, rice and pasture plants. Australia has significant interests at stake in such new international arrangements because of the continued reliance of our food, agricultural and horticultural sectors on overseas sources of genetic material for development of improved plant varieties.

### **3. An Australian national framework for accessing, and the sharing of benefits**

#### Australian perspective

The need for access to biological resources, and, consequently, the potential source of benefits, arises mainly in economic, research and development or industry development contexts.<sup>1</sup> Sectoral needs vary considerably in types, quantities and sources of access to biological resources, the production context in which they are used and how they translate into benefits in an Australian context. Most economic activity based on biological resource use is based in the states and territories, and in general involves significant capital investment.

Further, there are many existing laws and policies in Australia, within the Commonwealth and within the States and Territories, intended to generate benefits for Australia or regions. Many of these have application in a wider context and are not limited to the use of biological resources. These include research and development schemes, investment incentives and support (including taxation concessions) and intellectual property protection systems. Existing laws and policies also establish rights to own, access and use biological resources.

#### *Towards a national policy approach*

When Australia ratified the Convention on Biological Diversity (CBD) in 1993, Commonwealth, State and Territory governments agreed that Australia met all obligations in the CBD, but that further work was desirable to see if Australia could benefit better from access to its genetic resources under nationally consistent arrangements.

As with many other issues involving Commonwealth State cooperation, issues of access and benefit are not neatly defined or ‘self contained’ as a policy issue with a specific or unique identity, but rather they significantly involve or touch on a range of policies and mechanisms which underpin delivery of economic, environmental, equity and social goals. These multifaceted dimensions were recognised in the terms of reference for a Commonwealth State Working Group (CSWG) established to examine

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<sup>1</sup> This recognises that the long-term future of biological resource based activities also needs to factor in biodiversity conservation considerations.

There are distinct issues associated with access for conservation purposes outside the natural environment, that is *ex situ*. This may give rise to additional issues, including who owns material, what agreements underpin the use of material and management regimes of *ex situ* collections (including Commonwealth state funding issues), efficiency (eg how appropriate is it to duplicate and hold in storage material abundant in the wild or in other collections) and cost of *ex situ* conservation activities.

these issues. They also contribute to the complexity of developing responses to these issues from the point of view of 'access' and 'benefit sharing'.

Work within the CSWG examined issues within the overall framework of diverse Australian interests, including ownership regimes to biological resources, the costs and benefits of new regulations for the purpose of controlling access for the purpose of benefit sharing, the interests, roles and responsibilities of different governments, existing laws and policies and rights and obligations under international agreements.

The policy principles identified by the CSWG (see Enclosure 1) provide a sound basis through which Commonwealth, State and Territory governments can articulate and commit to a common and shared vision that Australia moves towards, and represent its interests, in a nationally consistent approach on access and benefit sharing.

Accepting such a nationally agreed and shared set of principles would provide a reference point for contributing to international discussions on these issues without limiting Australia's domestic capacity to respond to emerging issues and outcomes. Such principles would also help create certainty for holders of property rights whose interests might otherwise be affected in ongoing uncertainty over how governments respond to access and benefit sharing.

Such a broad based national policy commitment could be supported by clear policy statements on the part of each of the Commonwealth, State and Territory governments describing the nature of their individual interests in access and benefit sharing, including as owners of resources and in the context of their existing roles and responsibilities. In this regard AFFA notes State and Territory governments are already generating additional benefits for Australia in their negotiation of contracts for access to their biological resources, on mutually agreed terms, with bioprospecting and bioprocessing organisations within clearly articulated whole of government policy frameworks relating to their existing legislative regimes. In this way they are creating certainty for potential investors in capital intensive and high technology bioprospecting and bioprocessing industries.

AFFA considers adoption of shared principles based on the findings of the CSWG should be progressed through the existing Commonwealth State Working Group mechanism. This provides a whole of government basis, which can capture the diverse stakeholder interests in issues of access and benefit sharing.

#### *Roles and responsibilities of governments*

AFFA considers that each jurisdiction should clarify its position on access and benefit sharing within its jurisdiction to avoid governments inadvertently adding to uncertainty in access and benefit sharing matters. Such responses should be undertaken on a whole of government basis. They should address and clarify the interests and role of the government in access and benefit sharing from the point of view of:

- . the government as an owner of a biological resource
- . its other responsibilities and objectives, including in respect of policies and mechanisms for biological resource management, economic and social goals.

Uncertainty over 'ownership' has often been cited as an impediment to implementation of appropriate benefit sharing arrangements. This highlights a real and complex issue. It is unlikely this could be easily overcome without creating many new and additional problems, especially if governments chose to replace existing common law entitlements by owners of biological resources with a right entitling owners of biological resources to a mandatory benefit sharing entitlement.

Governments already have significant roles in assigning property rights and allocation mechanisms and in leveraging benefits in matters involving biological resources, reflected in existing laws, policies and access regimes. To avoid creating uncertainty, governments therefore need to be careful in how they respond to additional measures involving access and benefit sharing to ensure consistency with existing rights.

The importance of governments elaborating their intentions in respect of existing property rights can be illustrated by reference to existing access and property rights in an Australian context. These may cover three distinct categories of rights over biological resources:

- . rights to own a resource
- . rights to access a resource
- . rights to control or use a resource.

Rights to control access to the resource are often distinct from ownership rights to the resource. Development and use rights may be distinct from ownership of biological resources and rights to access biological resources. In many situations in Australia ownership of the land/waters where biological/genetic resources are found is unresolved. Therefore there are complexities associated with the granting of access to and the use of these resources.

Rights to own and use biological and genetic resources arise through a range of different laws enacted under Commonwealth, State and Territory legislation in accordance with Australia's constitution. Ownership rights may derive from the rights associated with an organism in which genes are found, or the product or process by which the gene is located or used.

There is no necessary statutory link between any of the categories of access rights and issues of benefit sharing. Any owner of a biological or genetic resource has common law rights to enter into agreements for benefit sharing, so long as these rights are exercised in a manner consistent with applicable laws for use and disposal of the biological resource. However if governments create new laws that provide for new property rights, particularly mandatory benefit sharing, they may potentially conflict with existing rights, and create uncertainty.

For example, ownership, and therefore control of access, in marine areas is vested in governments (State/Territory and Commonwealth). The relevant agencies currently grant access to biological resources within these areas for recreational and commercial fishing activities. Confusion could arise in respect of access to biological resources for bioprospecting if mandatory benefit sharing provisions are applied. Benefit sharing is not addressed in commercial fishing regulations that provide for access to a biological resource. A bioprospector may legitimately seek samples

through commercial transactions with commercial operators for their legitimate catch, or even, provided they fish within regulation, recreational activity.

#### **4. International dimensions - Australian national interests**

International discussions on biological resource management, access to biological resources, benefit sharing, biotechnology and intellectual property arise in a number of international fora. Australia has important national interests at stake in how different fora progress these issues. The attached diagram summarises how these issues arise across:

- . the World Trade Organisation
- . the Convention on Biological Diversity
- . the United Nations Food and Agriculture Organisation
- . the World Intellectual Property Organization and
- . the Union for the Protection of New Plant Varieties.

A major reference point for international discussions on access and benefit sharing is the Convention on Biological Diversity (CBD). Australia met all the CBD's obligations when it ratified the CBD in 1993.

The CBD is a framework agreement with broadly defined objectives 'the conservation of biological diversity, the sustainable utilisation of its components and the fair and equitable sharing of the benefits arising out of the utilisation of genetic resources, including by appropriate access to genetic resources, the appropriate transfer of relevant technologies, taking into account all rights over these resources and to technologies and by appropriate funding'.

Much of the international debate on access in a CBD context revolves around interpretation and elaboration of benefit sharing considerations. These focus on matters such as the obligations which developed countries (as importers of biological/genetic resources from developing countries) have to developing countries (as a source of biological/genetic resources) in respect of new aid funds, technology transfer and capacity building (including for modern biotechnology) and intellectual property.<sup>2</sup>

Ongoing negotiations for the revision of the International Undertaking on Plant Genetic Resources highlight some of the policy linkages, including biotechnology related considerations in access and benefit sharing. The outcome of these negotiations is of particular interest to Australian food and agriculture sectors which continue to rely heavily on overseas sources of plant genetic material for ongoing development of new crop, pasture and horticulture varieties.

The negotiations for revision of the International Undertaking aim to establish a new multilateral system of exchange in plant genetic resources for food and agriculture. This system is intended to update and replace the existing technical based system of cooperation in research, development and conservation for plants established in 1983.

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<sup>2</sup> The United States has signed, but not ratified the CBD because of concerns about the CBD's provisions for US national interests for biotechnology and intellectual property.





Factors contributing to the difficulty in reaching agreement on policy and operational elements of the new system include the changing structure of agricultural industries, changes in the way that genetic resources are being valued and used (including in biotechnology), and evolving multilateral trade and environment policies.

A major unresolved issue creating delay for finalising the International Undertaking is that of access regimes to plants, their use (including implications for sustainable production systems) and their distribution.

Some of the issues surrounding this debate involve policy considerations in intellectual property, biotechnology, benefit sharing and access. While some dimensions of this debate are unique to plants for food and agriculture, they are also discussed in the broader consideration of biological diversity generally and in a number of international fora other than the FAO, as shown in the annex.

Specific unresolved issues in these fora relevant to the Undertaking revision include:

- the type(s) of regime(s) to protect intellectual property, including in new plant varieties;
- the relationship between patents and other intellectual property systems (including plant breeders' rights);
- the adequacy of existing intellectual property systems to protect traditional knowledge
- determination of ownership rights to plant material, including in collections outside their natural environment (ie *ex situ*) and especially those collected prior to entry into force of the CBD
- the relationships, and any obligations, between owners of plants and those seeking to develop new plant varieties. Issues include:
  - access rights to seeds for the development of new plant varieties, including seeds subject to IP protection
  - the nature (if any) of obligations between owners and users, and the regime under which such obligations are implemented (ie benefit sharing regimes). These may involve access to and transfer of technologies, direct links between research, development and commercialisation efforts giving rise to (monetary) returns, and obligations for ongoing conservation of plant material (*in situ* and *ex situ*)
- management regimes to promote the conservation and use of biological resources (including biosafety considerations from new 'gene' technologies).

## **Agriculture Fisheries and Forestry Australia (AFFA) Submission to a Public Inquiry into Access to Biological Resources in Commonwealth Areas**

### **Summary**

AFFA's submission to the inquiry is aimed at identifying matters where Commonwealth regulations on access to biological resources in Commonwealth areas, as provided for under Section 301 of the *Environment Protection and Biodiversity Act 1999* (EBPC Act), can provide benefits for Australia.

Australia is both a source of supply of biological resources, as well as an importer of resources from other countries. The agriculture, fisheries and forestry sectors depend to a significant extent on access to biological resources from other countries for their ongoing productivity improvement. Ongoing productivity of these sectors is also dependent on having in place effective resource management regimes which provide for, and integrate, conservation objectives into the delivery of sustainable production systems.

The issue of access to biological resources, and the genetic components making up these resources, involves many different dimensions and many different stakeholders. This debate involves sustainable use and conservation objectives, as well as new policy elements of fair and equitable benefit sharing deriving from the use of genetic resources. Many aspects of the policy debate on access and benefit sharing are still evolving both within Australia and internationally. They include issues associated with property rights to resources, rent allocations from property rights and public and private benefit considerations.

Given the evolving nature of the debate on these complex issues of access and benefit sharing, AFFA is of the view that any regulations under this Act should be introduced on a phased basis. AFFA considers that, in the first instance, regulations should:

- . clarify Commonwealth rules for access to *in situ* biological resources within Commonwealth lands and waters. In particular these rules should address how access relates to existing management arrangements for areas such as national parks and defence lands, the primary manager of the Commonwealth area and other Commonwealth legislation; and
- . specifically clarify the nature of access arrangements to such *in situ* resources in the context of delivering conservation objectives in Commonwealth areas, including under existing statute.

The issue of access to resources held outside their natural environment is more complex. In many instances the resources held by the Commonwealth in *ex situ* collections already have specific terms and conditions attached by the providers of the material, which may be States and Territories or other countries. They also involve matters being addressed through ongoing international negotiations.

To ensure that Australia as a whole can benefit from access to *ex situ* resources, AFFA considers that, at this stage, *ex situ* resources managed by the Commonwealth

should be excluded from regulations. This is to allow further consideration of the issues and further consultations with the States and Territories on terms of access involving cross jurisdictional issues in an Australian context. These need to take into account matters involving terms of access currently being established through international negotiations in respect of plant genetic resources for food and agriculture, and for new international forestry management regimes, to ensure that the national interest is protected.

AFFA considers that any regulations should not duplicate, cut across or add uncertainty in respect of existing property rights to resources which may have been assigned under other Commonwealth legislation within Commonwealth lands and waters, such as fisheries and intellectual property protection regimes.

Australian agriculture, fisheries and forestry sectors depend on biological resources. Biological resources are an essential production input. Ongoing access to biological resources is required for productivity improvement in those sectors and in promoting sustainable use of biological resources within an Australian production context.

By establishing clear rules for accessing *in situ* biological resources within Commonwealth areas, particularly in the context of interactions with the primary area managers and in meeting conservation objectives, the Commonwealth can add certainty. In doing so Commonwealth intervention can provide incentives to invest in Australian industry sectors based on biological resource use.

#### Commonwealth interests and obligations in access to biological resources

The Commonwealth has specific responsibilities involving biological resources under Australia's constitution. In any consideration of access to biological resources and associated matters dealing with terms of access and benefit sharing it will be important to elaborate how existing rights and obligations are affected. These need to include consideration of rights in the following contexts:

- . rights to own a resource
- . rights to access a resource
- . rights to control or use a resource.

Rights to control access to the resource are often distinct from ownership rights to the resource. Development and use rights may be distinct from ownership of biological resources and rights to access biological resources.

The Commonwealth has enacted legislation in line with its powers under the Constitution which have a direct bearing on how rights to own, to control the use of, and access to biological resources are exercised. Some legislation has a direct bearing on matters involving access to and the use of biological resources and may have broader implications than just Commonwealth lands and waters.

Commonwealth legislation which is, or could be relevant to, the control of biological resources (including access and use) can broadly be summarised as covering the following matters:

- . border control activities (between Australia and other countries)
- . industry development activities
- . land, water and resource management regimes
- . conservation regimes
- . access to Commonwealth lands and waters.

Commonwealth legislation in these matters varies in its impact on control over, and ownership of, biological resources. For example:

- . some border control legislation does not differentiate between property rights - the rules apply equally to biological resources whether they are publicly or privately owned (for example quarantine, wildlife exports).
- . some Commonwealth legislation for resource management and conservation activities in certain circumstances extends beyond Commonwealth lands and waters, and may involve matters falling within areas of State jurisdiction, for example fisheries management of tuna species. In such cases separate agreements exist between the Commonwealth, States and Territories as to how they interact in such matters, for example the Offshore Constitutional Settlement.
- . Commonwealth legislation may establish or reassign access rights to biological resources, for example in the case of fisheries legislation access rights to some public resources are granted.
- . Commonwealth legislation may provide mechanisms to establish rights to biological resources derived from utilisation of biological resources, irrespective of where they are found in Australia, for example under plant patents and plant breeder's rights. Under plant breeder's rights consideration of ownership entitlements to original source material, from which a new variety is derived, is becoming of more significance before rights to a derived biological resource are granted.

AFFA has specific legislation in some of these areas, summarised at Attachment A.

Any new Commonwealth regulations under S301 of the EPBC Act needs to be consistent with existing Commonwealth legislation to ensure that Australia's capacity to benefit from access to Australia's biological resources is protected. This is because to a significant extent, existing Commonwealth legislation provides the framework by which Australians derive benefit from their resources, including through incentives to conserve, and sustainably use these resources in ways which generate income and provide benefits. If regulations on access under the EPBC Act impact adversely on rights established under other existing legislation this could lead to significant uncertainty for the affected stakeholders. It also raises potential significant compensation considerations. This will be especially important in any arrangements which may impact on access to and use of components of biological resources, such as genetic resources.

The Commonwealth does not have clear rules for access to biological resources in all Commonwealth areas, nor how access to biological resources matters relate to the

roles and responsibilities of the primary area managers, for example on land controlled by defence or indigenous communities. The Commonwealth also has a number of conservation obligations and interests. By integrating these considerations through the regulations on access, the Commonwealth can provide certainty and transparency for those seeking to access and use biological resources in Commonwealth areas.

AFFA considers that development of regulations on access under the EPBC Act could serve to:

- . clarify what gaps exist in access arrangements to *in situ* resources in Commonwealth areas and to set out clear and transparent arrangements for accessing such resources, including in relation to the primary land manager; and
- . clarify the Commonwealth's conservation interests in Commonwealth areas, by elaborating in an integrated manner the nature of access controls required to achieve conservation objectives.

#### Access to biological resources - benefit sharing considerations and the national interest

Policy development on the issue of access to biological and genetic resources is evolving and occurring within Australia and internationally. It involves many different, and sometimes overlapping, elements including in respect of :

- . intellectual property
- . considerations involving indigenous people
- . resource management concerns
- . trade related matters
- . biotechnology
- . implementation and negotiation of international treaties.

In deciding on the nature of any regulations under the EPBC Act, including in matters to facilitate access, rights to deny access, benefit sharing and terms and conditions of access, it will be important to protect the capacity of Australia as a nation to benefit from access to its biological resources.

In particular it will be necessary to take into account that the issue of access is not neatly defined or 'self contained' as a policy issue with a specific or unique identity, but rather it significantly involves or touches on policy instruments and considerations not unique to biological resources. Consideration of access and benefit sharing also needs to take into account that most benefits to Australia from the use of biological resources accrue from public and private activities based in the States and Territories.

It will be important to ensure that controls on access to biological resources are considered in ways which effectively integrate conservation objectives and incentives to use resources, having due regard to the nature of the activity. In the case of natural resource based sectors, biological resources are an important input to the development of new varieties. However for such sectors the sustainability of the production system

in the natural environment also depends on the sustainability of the biological resource base.

The work undertaken through the Commonwealth and State and Territory Working Group (CSWG) on Access to Australia's Biological Resources has highlighted the challenges confronting all jurisdictions in protecting the national interest in matters of access to Australian biological resources, including the development of nationally consistent approaches on access. The terms of reference for the CSWG highlight the importance of taking into account Australia's rights and obligations arising from relevant international agreements together with international practices and developments with consequences for Australia's national interest.

These issues are especially relevant when considering matters involving access to biological resources held outside their natural environment, that is *ex situ*. Economic development, including those leading to productivity improvements in agriculture, fisheries and forestry, involves access to and use of biological resources (or their components) derived from *ex situ* sources. The terms and conditions of access to such *ex situ* material are set by the source of supply, either the States and Territories or other countries.

There is significant domestic and international policy development occurring in conditions of access which will have implications for the terms of access to material in Australian *ex situ* collections. Australia's national interest may not be served by Commonwealth introduction of regulations on access to material in Commonwealth *ex situ* collections at this stage because of the evolving policy debate.

The ongoing negotiations for the revision of the International Undertaking on Plant Genetic Resources, with a major focus on *ex situ* collections of plant material for food and agriculture, have highlighted the complexities of dealing with *ex situ* issues. These are seeking to resolve new multilateral terms and conditions for access to material which has previously been exchanged with minimal restriction and from which all countries have mutually benefited. These negotiations involve access, use and conservation considerations in respect of material held in private collections, material held in the international public domain, by the Commonwealth (CSIRO) and the States and Territories.

AFFA therefore considers that development of Commonwealth regulations on *ex situ* collections should be left to a future date. This will enable such regulations to be informed by clarification of such issues through the outcome of the Undertaking negotiations, as well as through further examination of these issues with all relevant Australian stakeholders.

The principles identified in the 1996 Commonwealth State Working Group Discussion Paper *Managing Access to Australia's Biological Resources Developing a Nationally Consistent Approach* provide a practical basis for progressing the Commonwealth's interest in access to *ex situ* collections, consistent with protecting Australia's national interest in benefiting from access to its biological resources. In particular, the Commonwealth should support further development of terms and conditions terms which:

- . Ensure that administrative and regulatory practices are transparent, consistent and minimise duplication and regulation, building wherever possible on existing regulatory mechanisms.
- . Ensure continued access for Australia to biological resources in other countries for research and commercial purposes by developing an approach which Australia would be prepared to comply with if the same approach were used by other countries.
- . Are based on consultation with affected communities who should be given sufficient information to make informed decisions.
- . Take into account the interests of Aboriginal and Torres Strait Islander peoples, rural communities and rural landholders/owners.
- . Be consistent with:
  - Australia's responsibilities and interests in international instruments, such as the Convention on Biological Diversity, the United Nations Food and Agriculture Organisation (FAO) International Undertaking on Plant Genetic Resources and the United Nations Convention on the Law of the Sea
  - the Intergovernmental Agreement on the Environment
  - National Competition Policy and the Trade Practices Act.

## **Agriculture, Fisheries and Forestry - Australia Legislation Relating to the Control and Use of Biological Resources**

### ***Export Control Act 1982***

The *Export Control Act 1982* provides a framework for the maintenance of export markets for goods declared to be 'prescribed goods' under the Act. Currently 'prescribed goods' include meat, dairy products, fish, eggs and egg products, grains and fresh fruit and vegetables. However, not all food exports have been prescribed (for example, wine, sugar cane and rice are not declared to be prescribed goods). From time to time non-food products have been prescribed under the Act (such as coal).

The Prescribed Goods (General) Orders made under the Act cover the administrative requirements that are common to the export of all prescribed goods. There are also Orders dealing with specific prescribed goods such as meat.

The legislation has been reviewed as part of the National Competition Policy program adopted by COAG in 1993, whereby all Federal and State legislation, which restricts or has the potential to restrict competition is being reviewed. The Review Committee Report was finalised in December 1999 and is now awaiting the Government response.

### ***Fisheries Management Act 1991***

The *Fisheries Management Act 1991* provides for the management of fishing in fisheries within the Australian Fishing Zone and potentially for Australian flagged vessels outside that zone. A 'fishery' is a class of activities by way of fishing, including activities identified by reference to all or any of the following: a species or type of fish; a description of fish by reference to sex or any other characteristic; an area of waters or of seabed; a method of fishing; a class of boats; a class of persons; or, a purpose of activities. The Australian Fishing Zone is generally those waters 3 to 200 nautical miles from the coast of Australia and its external territories.

Fishing is managed through the granting of statutory fishing rights, fishing permits and foreign fishing licences by the Australian Fisheries Management Authority.

The Act sets out broad principles as to how fisheries will be managed in Australian waters, including in areas under joint authority with the States and the Northern Territory. It also covers scientific exploration, and foreign research vessels.

It has broad-ranging management objectives which cover implementation of efficient and cost effective management regimes, based on ecologically sustainable development principles, and having regard to the long-term conservation and sustainability of the marine environment.

The Act applies to both fish and to sedentary organisms of the continental shelf:



"fish" includes all species of bony fish, sharks, rays, crustaceans, molluscs and other marine organisms, but does not include marine mammals or marine reptiles.

"sedentary organism" means an organism of a kind declared by Proclamation under section 12 to be a sedentary organism to which this Act applies.

Section 12 provides for sedentary organisms to be declared to be covered by the legislation if the Governor-General is satisfied that a marine organism of any kind is, for the purposes of international law, part of the living natural resources of the Australian Continental shelf because it is, for the purposes of international law, an organism belonging to a sedentary species. A declaration has been made under section 12 with respect to beche-der-mer, certain bivalve molluscs and gastropods, green snails, commercial trochus shell and giant trumpet shells.

### ***Torres Strait Fisheries Act 1984***

The *Torres Strait Fisheries Act 1984* implements Australia's rights and obligations under the Torres Strait Treaty protecting the rights of traditional Torres Strait Islanders. Section 8 of the Act outlines the objectives of the Act stating that:

'regard shall be had to the rights and obligations conferred on Australia by the Torres Strait Treaty and in particular to the traditional way of life and livelihood of traditional inhabitants, including their rights in relation to traditional fishing'.

While the objective of the Act is to have regard to the traditional way of life and livelihood of traditional inhabitants, the Act regulates many other aspects of fishing in the Torres Strait Protected Zone.

The legislation has been reviewed in 1999 as part of the National Competition Policy program. The Report recommendations are under consideration.

### ***Quarantine Act 1908***

***The Quarantine Act 1908 and its subordinate legislation provides for measures :***

- (a) for, or in relation to, the examination, exclusion, detention, observation, segregation, isolation, protection, treatment and regulation of vessels, installations, human beings, animals, plants or other goods or things; and
- (b) having as their object the prevention or control of the introduction, establishment or spread of diseases or pests that will or could cause significant damage to human beings, animals, plants, other aspects of the environment or economic activities.

Australia's quarantine laws serve to protect the country's highly favourable human, animal and plant health status. The laws also play an important role in the regulatory framework that governs trade within and between nations.

### ***Plant Breeder's Rights Act 1994***

Plant breeder's rights legislation is marginally relevant to the issue of access to biological resources and how they are utilised. The plant breeder's rights scheme is an incentive regime to utilise biological resources, by providing for the granting of proprietary rights to breeders of certain new varieties of plants on terms and conditions set out in the *Plant Breeder's Rights Act 1994* (which is modelled on *the International Convention for the Protection of New Plant Varieties 1991*).

The Act covers new varieties of plants bred from plants which may be indigenous to Australia or imported from overseas. Transgenic plants, algae and fungi can also be protected. Plant Breeder's Rights are limited, temporal rights related to the commercialisation of new varieties. The rights are a form of intellectual property and require the authorisation of the right's holder for commercial production, multiplication, sale, import, export and conditioning of the registered variety.

Essentially the PBR scheme provides a means of promoting investment in plant variety development and providing an opportunity (not guarantee) to exercise limited rights in regard to particular activities, ie, production, reproduction, conditioning, sale, import, export and stocking. The scheme is generally accessible, including to those with indigenous interests, and provides a means of protecting new varieties of native plants.

To be eligible for registration the applicant must show, inter alia, that the new variety is distinct, uniform and stable and has not been exploited for longer than the prescribed period. The Australian Cultivar Registration Authority is consulted for specialist advice on all applications for new varieties of Australian indigenous species. Currently PBR is most frequently used to register plants derived through conventional breeding, however registration of genetically modified plants is on the increase.

PBR ensures access to registered varieties. The PBR scheme facilitates access to plant resources by ensuring reasonable public access to the variety within two years of its registration. Under public interest provisions access to plant varieties is enabled through, for example; Ministerial decision; non-infringing activities including the use of a variety for private, non-commercial or research and breeding purposes. Additional non-infringing actions include the retention of seed on farm for the sowing of subsequent crops. PBR is limited to plant varieties that are in the public domain and does not mandate access to plant varieties held privately.