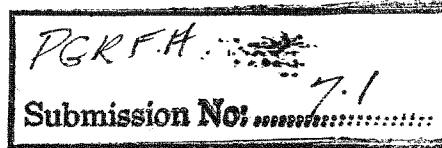


Professor Emeritus J V Lovett
MANAGING DIRECTOR

Grains Research and Development Corporation



19 December 2003

Ms Julia Morris
Inquiry Secretary
Joint Standing Committee on Treaties
Parliament House
CANBERRA ACT 2600

RECEIVED
6 JAN 2004

BY:

Dear Ms Morris,

INQUIRY INTO AUSTRALIAN RATIFICATION OF THE INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

The Department of Agriculture, Fisheries and Forestry has provided a copy of its supplementary submission dated 12 November 2003.

In the attachment, we offer comments on the Department's responses to industry stakeholder questions. Most of those comments were already made in writing to the Department on the basis of draft responses it prepared to questions from industry bodies.

Also attached is the report by an independent expert, Professor Don Marshall, on the Treaty's potential impact.

Yours sincerely,

JOHN LOVETT
Managing Director

INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

Comments by the Grains Research and Development Corporation (GRDC) on Responses by the Department of Agriculture, Fisheries and Forestry (AFFA) to Industry Stakeholder Questions

The format followed is that of AFFA's supplementary submission dated 12.11.03 to the Joint Standing Committee on Treaties. Not all the Department's responses have been commented on. The original questions from industry bodies appear in italics.

Overview

It is noted that the Department has deleted from the introduction to an earlier draft response the reference to the Treaty's providing guaranteed access rights, a reference which was made also in the Joint Standing Committee on Treaties. Several provisions in the Treaty, notably Articles 10, 11 and 12, are evidence that no guarantee of access is given.

The Overview section (point 6) speaks of the Treaty's providing "a legal framework for minimum reciprocal terms of access". Contracting Parties, however, are not assured of reciprocity or preferential treatment. Although the Treaty is spoken of as "legally binding", it does not have a most favoured nation (MFN) clause to provide for members some form of guaranteed preference on access or other matters.

The nearest approach to MFN appears to relate to transfer of technology, which is to be "facilitated under fair and most favourable terms", but **specifically** to developing countries that are Contracting Parties. This provision (Article 13.2(b)(iii)) contains unclear expressions and appears to envisage preferential terms being offered internally to the exclusion of some members.

At point 7, the Overview refers to a conclusion from the GRDC-commissioned Marshall study that benefit-sharing arrangements would have minimal impact because new commercial plant varieties in Australia are generally available for research and development. Perhaps it should be added that related conclusions in the study include:

- The commercial cost refers to the compulsory benefit-sharing payments, but Contracting Parties are *required* to take appropriate measures to encourage other holders within their jurisdiction to include their genetic resources in the system; and
- The "minimal effect" can be changed in the first five years, as the Treaty provides for an assessment to decide whether payments will be required for *all* commercially protected cultivars using germplasm obtained under the multilateral system.

On the first page of its Overview, the Department states that the provision for decision-making by consensus ensures that the view of each Contracting Party must be taken into account in the Governing Body. While it is important for Australia to be on the initial Governing Body, the 'consensus' argument should not be exaggerated.

Views of a member like Australia will be heard, but not necessarily put into effect. The consensus process might provide a spoiling tool for a government that has the courage to use a veto and risk the opprobrium of other members, but it cannot ensure that any Australian proposal is taken up.

1. Funding

(i) Who will pay for the administration of the Treaty (including costs of membership and meeting Treaty obligations within Australia) and what are those costs for governments, farmers and the seed industry?

(a) Treaty membership costs

We welcome the clarification on page 5 of AFFA's supplementary submission: "The Australian Government intends meeting its share of future secretariat costs in the context of its funding and membership of international institutions".

This is a more positive statement than in an earlier draft response. It is also useful to have the assurance in point 5 of the Department's Overview that no cost recovery is proposed in relation to the contribution to secretariat costs.

(b) Domestic implementation costs

The explanation of domestic implementation in AFFA's footnote 1 is incomplete.

Under the Treaty, implementation costs domestically would include both

- the day-to-day operational costs of making material available, mostly to be incurred by the Centres managing Australia's PGR collections, and
- the expense of meeting the obligations of Articles 5 and 18. Inter alia, these require Australia to undertake and provide financial resources for an efficient and sustainable system of *ex situ* conservation, for which a number of the specific conditions are set out in the Treaty.

The Department's supplementary submission contains a sentence (Attachment A, page 5) stating that existing activities in conservation and sustainable utilisation of plant genetic resources meet our obligations under the Treaty. In similar vein, the Overview (point 8) says that reform of the Centres is not required for domestic implementation of the Treaty.

These statements do not explain that even existing activities, such as the operations of the Australian Genetic Resource Centres, are not secure under current funding arrangements.

In his report on the potential impact of the Treaty on Australia, Professor Marshall points to the struggle of the Centres, which "have survived only through the support of the Rural Industry Research and Development Corporations". By comparison with the USA and Canada, he describes our national system as "ad hoc, poorly coordinated and poorly supported by both the State and Commonwealth Governments".

This question of the importance of adequate support for Australian genetic resource centres is developed further in our comments below on "Implementation".

(iv) Will there be a commercial cost from benefit-sharing flowing through to growers in terms of the price they pay for seed?

The response says that the Treaty does not interfere with how seed suppliers set the prices for the seed they sell. The text might have continued: 'except that it imposes a new requirement which introduces an added cost factor into price setting'. The sense of the answer is that growers can expect a commercial cost to them when benefit-sharing payments apply.

(v) Under what head of power would any funds be collected under the monetary benefit sharing obligation of the standard material transfer agreement and who will meet the costs of the collection of funds and policing of compliance?

The Department's response concludes: "We do not envisage Australia promoting arrangements for implementation of the Treaty which would involve the government taking on such a regulatory role". The role in question is apparently collecting funds and policing compliance when the Government is not a commercial party. Where the Government *is* a commercial party, the Department envisages that it would collect and pay benefits.

To the extent that the Government is involved in collecting and/or policing, the question remains: under what head of power?

The Government will be a contracting party, the only Australian contracting party, to a treaty which requires compliance to make it work.

In this funding area overall, the AFFA responses do not effectively answer the questions posed, or take into account that if a 'user' declined to pay into a central fund, the Government, as the signatory, would appear to be responsible for its own compliance, and that of persons under its jurisdiction, with funding requirements emanating from the Treaty.

2. Compliance

(ii) What will happen if the private sector does not make its material available to the multilateral system? Could it be compelled, for example within 2 years of entry into force when an assessment review of this question is required under Article 11.4?

The Department does not envisage Australia agreeing to an amendment compelling the private sector or blocking its access.

If the government of the day is persuaded to accept an amendment, e.g. after the 2-year review, the private sector could be compelled.

(iii) Is there a risk that even PGR made available for further research and development, e.g. commercially protected cultivars such as those covered by Australian PBR, will trigger benefit-sharing payments? The assessment review “within 5 years” foreshadowed by Article 13.2(d)(ii) points to such a risk.

The question was: is there a risk that PBR etc cultivars will trigger payments? Unless the answer is ‘yes’, it makes no sense to have included – as the Treaty has done – a specific provision for a review to determine if **mandatory** payments will be required for products “available without restriction”.

3. Implementation

(i) Will legislative change be required to implement the Treaty in Australia?

If there is to be confidence that the Treaty will work to provide facilitated access to most of the PGR in Australia, the States will need to assure compliance in implementation. We have seen no evidence of this assurance; on the contrary, reservations are understood to have been expressed at State level, including an assessment that, given difficulties under which they currently operate, genetic resource centres are not in a position to meet Treaty obligations.

(iii) What Australian material will be included in the multilateral system? Will it include State/Territory collections, material held by universities and in situ material? With reference to Articles 11.2-11.4 how does the Australian Government as the ‘contracting party’ interpret its obligations under these articles, and can the Government define its definition of ‘other holders of plant genetic resources for food and agriculture’ in Australia?

The Department’s response says the Commonwealth Government will be the only holder required to commit resources. Given that almost all the material in Australia is held by others, if the Commonwealth is the only holder which **does** commit, its ratification of the Treaty risks being seen as a charade by other countries and NGOs.

The Treaty goes a step further than just encouraging holders themselves to contribute material. It **requires** the Contracting Party (the Commonwealth) to “take appropriate measures to encourage” other holders to include their material in the MLS. Industry would like to know what measures are envisaged, in case of need.

(iv) What is the role of Australian genetic resource centres in implementing the Treaty and what are the effects on their operational procedures, staffing requirements and costs? What Commonwealth and State government support will be given to Australian genetic resource centres to enable them to implement the Treaty’s requirements?

The reply says that the Commonwealth has obtained commitments “which confirm State and Territory interests in participating in the multilateral system”. It continues: “...In most instances, their interests ...involve legal and policy considerations which may not impinge directly on the day to day functions of genetic resource centres...In most jurisdictions, negotiation and enforcement of material transfer agreements is

undertaken by contract managers, whose administrative roles and functions are distinct from plant genetic resource centres”.

This indicates an understanding by AFFA that the action on MTAs is carried out by ‘legal’ and ‘policy’ people away from the centres themselves, and that those people are the ones who count for the implementation of obligations under the Treaty. Such an understanding would undervalue the role of the Centres’ curators and their staffs. The questions at (iv) on Implementation deserve a more practical response.

If Australian participation in the Treaty is to have full meaning, the curators have to be heard; in fact, leadership by them is crucial to implementation. Successful implementation, in turn, can be maximised only if sufficient funds, as well as policy support, are provided to the PGR collections by Commonwealth and States.

In its response to these questions, AFFA says the roles and responsibilities of Australian centres are an issue independent of Australian ratification of the Treaty. In an earlier document, the Department put it slightly differently, saying the issue “is distinct from domestic implementation requirements for the Treaty”.

The responsibilities of Australian genetic resource centres and the material support to carry them out are **not** issues independent of Australian ratification of the Treaty, or of domestic implementation of its requirements. Industries contributing to maintaining the centres see recognition of this by the Commonwealth and States as an essential element in discussion of Treaty ratification.

Professors Fowler and Marshall agreed in Canberra that approval by FAO of the new Treaty had changed the international landscape permanently. If the Commonwealth ratifies the Treaty, it takes on new, binding international obligations, as well as moral obligations to developing countries as acknowledged by Government representatives in the Committee on Treaties. It would be expected that the Commonwealth take financial responsibility for those obligations.

Serious doubt would be cast on Australia’s ability to achieve the aim of facilitating access, one of the foundations on which the Treaty is built, in the absence of Commonwealth willingness to commit to full participation in new arrangements to coordinate activities of Australia’s genetic resource centres.

(vi) Will the Treaty impact on industry investment (including arrangements such as the GRDC sponsored consortia) and will the Treaty affect how they operate?

(vii) What requirements will plant breeders face in commercialising new plant products incorporating material obtained from the multilateral system?

What is being asked is whether the Treaty will impact on industry investment and the operation of breeding consortia, not just whether it will impede industry entering into arrangements.

To the extent that there are requirements to make additional, as yet unspecified, payments, the operation will not simply be "similar to current commercial dealings". This is a new concept.

(x) Will the terms of the standard material transfer agreement also apply to Australian researchers if Australia is not a party?

The response here is not entirely clear. It states, for example, that Australians have no rights or obligations in respect of access on the terms of the standard MTA if Australia is not a party to the Treaty.

If Australians chose to use a standard MTA, however, they would be expected to have the rights and obligations stated in that agreement, irrespective of Australia's membership status.

4. Other

(vi) What are the attitudes to the Treaty of the countries that are the main sources (from the public domain) of genetic material for Australia?

The response does not throw light on the attitudes of countries which are the main sources of genetic material for Australia.

The United States stance confirms that ratification is not necessary for participation in preparations for matters to go to the Governing Body. Its public announcement when signing states: "As a signatory to the treaty, the United States will actively participate in the development of a material transfer agreement under the aegis of the Treaty". The USA has reservations, however, about **ratification**: "The United States seeks to ensure that this agreement...will promote, not impede, international exchanges of plant genetic resources. The decision to proceed with US ratification, however, will depend on the satisfactory resolution of outstanding issues related to benefit-sharing, intellectual property rights and financial responsibilities".

Noting recent US action to protect its access to germplasm regardless of the Treaty, Professor Marshall (pp 5 & 6) has identified an alternative course for Australia if it does not ratify the Treaty.

(vii) What are the 'disbenefits' to Australia of not ratifying the Treaty?

That Australia's views on making the Treaty workable have been placed on the negotiating record and reiterated when signing the Treaty is noted. However, no reservations are allowed when a country ratifies (see Article 30).

5. Timing

What is the best information available on when an initial meeting of the Expert Group will be held, the expected time between finalising the Group's reports and convening the Interim Committee to consider them, and between the Interim Committee and a first meeting of the Governing Body?

Even if there is no **legal** requirement for the Interim Committee to meet again, it would be useful to know what is expected in practice, given that the Expert Group is limited to few countries and some discussion of its recommendations would surely be requested by more countries before the recommendations are put to the vote in the Governing Body.

The possibility that the Governing Body would meet back to back with the CGRFA in the second half of 2004 is noted.

Conclusion

Based on AFFA's position presented via its supplementary submission to JSCOT, there is clearly still a considerable degree of difference between AFFA and the GRDC on critical matters regarding the Treaty. The Corporation believes that more progress will need to be made in resolving these matters before we would be supportive of early ratification.

GRAINS RESEARCH AND DEVELOPMENT CORPORATION
Canberra

December 2003

**INTERNATIONAL TREATY ON PLANT
GENETIC RESOURCES FOR FOOD
AND AGRICULTURE**

POTENTIAL IMPACT ON AUSTRALIA

Professor Don Marshall (June 2003)

Commissioned by Grains Research and Development Corporation

INTERNATIONAL TREATY ON PLANT GENETIC RESOURCES FOR FOOD AND AGRICULTURE

POTENTIAL IMPACT ON AUSTRALIA

Summary

1. The International Treaty on Plant Genetic Resources for Food and Agriculture was approved in November, 2001. It is likely to come into force in the next within 2 years, perhaps sooner.
2. The Treaty already has had a significant impact on the philosophies underlying, and operating procedures used in, the exchange of PGRFA by the CGIAR centres and countries that have ratified the Treaty.
3. The impact of the Treaty in providing uniformity and certainty of approach internationally in the conservation, use and exchange of genetic resources will increase markedly once the Treaty enters into force. This will be done through the use of a standard contract (MTA or Material Transfer Agreement) to cover the exchange and use of PGRFA. In essence, Australia will be obliged to act in accordance with the Treaty in most circumstances whether it ratifies the Treaty or not.
4. The Treaty covers an agreed range of crops. Some crops of importance to Australia such as cotton and soybeans are not covered by the Treaty
5. A key requirement of the Treaty is that contracting parties are required support the 'equitable sharing of benefits' that derive from the commercialization of a cultivar developed in part using PGRFA into a fund which will primarily be used to support PGRFA activities in developing countries. The precise levels of payment required under the Treaty will be determined by the Governing Body after the Treaty enters into force.
6. Currently, the benefit sharing provisions of the Treaty are *only* triggered if a cultivar or other product is not available for further research and breeding, that is if a patent or some other restrictive form of IP protection is used to limit the further use of the material. They are not triggered if cultivars are protected by PBR in Australia or overseas. The cost of the ratification of the Treaty by Australia for commercial breeding programs will in most cases be negligible, unless they wish to voluntarily pay into the international fund established under the Treaty.
7. However, this can be changed by a decision of the Governing Body in the first five years of the operation of the Treaty. Payments would then be required for *all* commercially protected cultivars using germplasm obtained under the Multilateral System.
8. The level, form and manner of royalty payments into the benefit sharing fund are still to be decided. They will be determined "in line with commercial practice" by the Governing Body at its first meeting. Critical issues for industry are the levels of payments required, who will meet the costs of collection of the funds and policing of

compliance and how its views will be taken into account by Australia's representatives at the Governing Body.

9. The benefits to Australian commercial breeding programs if Australia ratifies the Treaty are likely to be substantial in terms of greater certainty in accessing PGRFA under standard agreed terms, and less time and effort spent in bilateral negotiations.

10. There is therefore a strong case for Australia to ratify the Treaty both to ensure access to germplasm and ensure it has a voice in the important decisions relating to the size and scope of mandatory payments under the Treaty.

11. If Australia ratifies the Treaty it will be required to contribute to the funding of the Governing Body that will administer the Treaty. The level of funding will be determined by the Governing body after the Treaty enters into force.

12. There will also be substantial domestic costs in complying with the Treaty if Australia becomes a contracting party. These will largely be incurred in mandatory changes to the operation of the National Network of Genetic Resource Centres.

13. The Treaty obliges each of the contracting parties to "provide financial resources for national activities for the conservation and sustainable use of plant genetic resources for food and agriculture in accordance with its national capabilities and financial resources". If the Commonwealth Government ratifies the Treaty it will presumably accept this responsibility under the Treaty, as well as contribute to the funding of the Governing Body and the domestic costs of the administration of the Treaty. However, this issue requires urgent clarification.

Introduction

The International Treaty on Plant Genetic Resources for Food and Agriculture ('the Treaty') was approved by the Food and Agriculture Organization of the United Nations ('FAO') in November 2001 after a series of protracted negotiations and conferences over 7 years. The Treaty seeks to provide a binding internationally agreed framework for the conservation, sustainable use and exchange of Plant Genetic Resources for Food and Agriculture ('PGRFA'). The treaty covers the majority of crops and pasture species of interest to Australian and world agriculture with some notable exceptions including soybeans, peanuts (groundnuts) and cotton.

The Treaty will enter into force ninety (90) days after the fortieth ratification, acceptance, approval or accession, provided that at least twenty of these instruments are deposited by members of the FAO. As of May, 2003, according to the FAO website, seventeen (17) nations have ratified or formally approved the Treaty and a further sixty eight (68), including Australia, have indicated a willingness to do so by signing the Treaty. Hence, it is likely that the Treaty will enter into force in the next 1-2 years. Initially a number of countries including two of our major trading partners, the USA and Japan, expressed fundamental objections to the treaty as approved by FAO. However, the USA has now changed its stance and signed the Treaty in November 2002 (Fowler, 2003) but has yet to ratify it.

The Treaty was developed to replace the non-binding International Undertaking on Plant Genetic Resources ('International Undertaking') established in 1983 to facilitate international cooperative arrangements for the conservation, use and exchange of genetic resources by a non-binding internationally agreed framework. Particular emphasis was given during the Treaty negotiations to the international public domain collections of plant genetic resources held in trust for the global community under agreements between the FAO and the International Agricultural Research Centres ('IARC's') of the Consultative Group for International Agricultural Research ('CGIAR'). All CGIAR Centres holding collections have now agreed to operate under a common set of principles in accordance with the Treaty. Particular emphasis was also given during the discussions to benefit sharing between the owners of genetic resources (since the ratification of the Convention on Biological Diversity, the country from which they are collected) and their users in improved crop cultivars.

Australia's Interest

Australian agriculture is strongly dependent on access to overseas sources of PGRFA. Virtually all of our major crop and pasture plants, fruits and vegetables, and a number of important forest species were introduced into Australia from overseas and Australian breeders are dependent on the free flow of genetic resources from overseas

to improve those crops. In the case of the major grain crops and pasture plants, this includes material held in the collections of the CGIAR Centres.

Clearly then it would be in Australia's interest to participate fully and strongly in any system that would guarantee access to PGRFA for domestic breeding programs and particularly from the IARCs. On this basis a substantive case can be made that Australia should sign and ratify the Treaty. In fact Australia has already signed the Treaty and is considering depositing its instrument of ratification as soon as is practicable.

However, while it is probable that the Treaty will attract sufficient support from other countries to be entered into force, this is still uncertain. Its potential impact, both economic and in terms of access to PGRFA, on the commercial breeding sector in Australia is also uncertain, as several key decisions relating to the cost of implementing the Treaty will only be made after it comes into force.

This paper examines the implications for the Australian breeding industry of the ratification process. It was commissioned by the Grains Research and Development Corporation ('GRDC') to assist the grains industry in deciding whether to support the ratification of the Treaty by the Commonwealth Government. The GRDC is interested in assessing the impact of ratifying the Treaty in two main areas. The first is its role as a major shareholder or investor in the great majority of the grains breeding programs in Australia. Here the critical issues are:

- (i) Will ratification of the Treaty improve access and flow of exotic germplasm into commercial Australian breeding programs?
- (ii) What will be the costs of ratification of the Treaty, if any, to those programs?

The second area relates to its role as a significant source of funding for the established network of Australian Genetic Resources Centres. Here the critical issues are:

- (i) Will ratification of the Treaty substantially increase the workload Centres in complying with the terms of the Treaty?
- (ii) Who will bear the increased cost, if any, of compliance?

In assessing these issues, the paper considers three possible outcomes of the ratification process:

- (i) the Treaty is not entered into force,
- (ii) the Treaty is in force and Australia is not a contracting partner
- (iii) the Treaty is in force and Australia is a contracting partner.

The Multilateral System and its Limitations

The centre-piece of the negotiated Treaty is the Multilateral System of access and benefit sharing ('Multilateral System'). The Multilateral System describes a protocol of 'facilitated access' to govern access to, and exchange of, PGRFA that are listed in an annex to the Treaty and which are under the management and control of the contracting parties to the Treaty and in the public domain. A key element of the 'facilitated access' protocol is the development and use of a standard contract (Material Transfer Agreement or MTA) to govern facilitated access transactions. The IARCs have already implemented an agreed (among themselves and with FAO) version of this standard contract to cover access to materials in their collections. This

system will operate for their PGRFA regardless of whether the Treaty enters into force or not.

One of the major deficiencies with the Multilateral System is that it does not cover all the crops, even those for which PGRFA are held in the IARCs, of interest to Australia. In addition a number of countries, including some that have historically been significant suppliers of germplasm to Australia, may not ratify the Treaty. These countries currently include Japan and perhaps China, South Africa, Mexico, Israel and Pakistan. For those crops not covered by the Treaty, Australian breeders, as they do now, will need to enter into bilateral negotiations with the holders of PGRFA for access. They will also, as they do now, enter into negotiation with the holders of germplasm of *all* crops in non-participating countries for access. The point is that the Treaty covers only a component of Australia's germplasm requirements and that access to these will need to be guaranteed in other ways whether the Treaty is ratified or not.

In the context of guaranteed access, it is worth noting that the USA has negotiated a specific bilateral agreement on germplasm exchange with at least one of the IARCs holding substantial collections of PGRFA for access to those collections under defined terms. Such an agreement will protect their national interest regardless of whether the Treaty is entered into force or not, or if the USA ratifies the Treaty or not. The same route is now open to Australia should it not ratify the Treaty.

Case 1: The Treaty not entered into force.

If the Treaty is not entered into force, it can be argued that the situation will remain as it is today. However, while this view may be valid for countries that have reservations about the Treaty, it is *not* valid for the CGIAR Centres and for the many developing countries that are sensitive to the issue of benefit sharing.

Indeed, considerable work has already been done by the CGIAR Centres to develop an agreed set of IP policies, including those covering their Genetic Resources collections, which are consistent with the Treaty. In effect, the Centres have renegotiated their earlier agreement with FAO under the International Undertaking and started to implement the principles and practices of the Treaty (including an agreed "interim" MTA). As a result, whether the Treaty is ratified or not will have little further impact on the CGIAR Centres policies on PGRFA (although it is recognized that further modification may be required once the Governing Body approves the final version of the MTA).

Similarly many countries that are sensitive to the issue of benefit sharing will undoubtedly implement the operating principles of the Treaty, and a standard MTA consistent with the Treaty, to govern the exchange and use of the germplasm they own even if the Treaty does not enter into force. As a result, even if the ratification process fails, the Treaty will have a significant impact on the process of germplasm exchange and the expectations of germplasm owners in benefit sharing. Both the Convention on Biological Diversity and the Treaty have strongly focused on the fact that countries own the germplasm resources within their boundaries and can reasonably expect to benefit from their successful use. In essence, the negotiations to

develop the Treaty have changed the international landscape forever, and there is unlikely to be a return to the past.

Case2: Treaty in Force, Australia *not* a Contracting Partner.

The implications under this scenario will vary amongst institutions and/or countries. Three groups are considered separately below:

(i) The CGIAR Centres.

If the Treaty is in force but Australia is not a contracting partner, it is unlikely to significantly affect our relationship with the Centres. Initially, two of the larger donors to the Centres, Japan and the USA had indicated they would not be ratifying the Treaty. The USA has now changed its stance. However, due to the differing attitudes in the donor community to the Treaty, in practice, the Centres had no option but to develop a set of policies on exchange of PGRFA and apply those policies equally to all their partners whether they ratified the Treaty or not. This is what they are now doing. Principles and practices governing germplasm exchange which are consistent with the Treaty have now been universally agreed and are being implemented by the Centres, and this is unlikely to change if the Treaty is not entered into force. It is up to the recipient country or entity to decide whether they will receive germplasm under the terms and conditions under which it is offered by the Centres.

It should be emphasized the Centres are autonomous bodies and are *not* governed by the policies of their host countries. It would be possible under this scenario for Australia to negotiate a bilateral agreement with each of the major Centres with substantial collections using the existing US agreement as a model. If the Commonwealth is not prepared to do this, then perhaps a consortium of the Rural Industry Research and Development Corporations should take up this initiative

(ii) Other non-contracting countries.

Under this scenario Australia' relationship with other non-contracting countries would presumably continue unchanged.

(iii) Contracting countries

Contracting countries will adopt the common principles and operating procedures for PGRFA and use developed under the Treaty. Under this scenario Australia will need to negotiate on a bilateral basis with each of the countries that are signatories to the Treaty. It is possible that some countries may refuse to deal with non-contracting countries, although this seems unlikely given the number and size of these, or may provide material on less favourable terms. In any case, in dealing with these countries Australian breeders will have to agree to benefit sharing arrangements similar or more costly than those operating under the Treaty to obtain access to PGRFA. Further, a likely downside will be increased negotiating time and effort to broker new bilateral agreements with each ratifying country.

Case 3: Treaty in Force, Australia a Contracting Party.

If Australia ratifies the Treaty, it will have significant implications both externally as well as internally. Since the Treaty is likely to enter into force, and Australia is giving serious consideration to ratifying the Treaty, these are examined in some detail. A key question here is whether the State agencies that control the bulk of the PGRFA accessions in Australia commit these to the multilateral system.

(a) External Implications.

If Australia ratifies the Treaty and some or all of the collections held by the State agencies are not committed to the multilateral system, then the implications for the non-participating centres would be similar to Case 2 above. For the collections controlled by the Commonwealth, and for those controlled by the State agencies who agree to commit to the multilateral system, the implications of Australia ratifying the Treaty, as before, will vary between countries and /or institutions:

(i) CGIAR Centres

Under this scenario, both Australia and the Centres would operate under the terms and conditions of the Treaty (standard MTA and benefit sharing framework). In theory, this should facilitate maintenance of the excellent collaborative arrangements between Australian breeders and the Centres, but in practice, since the Centres will treat contracting and non-contracting countries the same, it is unlikely to make any real difference.

(ii) Other Contracting Countries

Ratification of the agreement by Australia should facilitate and simplify the exchange of germplasm with other contracting countries. In most cases the benefits should flow through quickly to Australia. However, whether it will simplify and increase exchange between Australia and those countries where difficulties have been encountered in the past (for example, Ethiopia) will only become clear with time.

(iii) Non-contracting Countries

If Australia ratifies the Treaty it is likely that Australian Genetic Resources Centres will routinely adopt the standard MTA and other operating instruments developed under the Treaty and apply these to *all* the countries with which they interact, including the non-contracting countries. As with the international centres it is hard to see the merits in operating a two tier system, if this can be avoided. It may be necessary to develop country or crop specific agreements but this is likely to be a relatively rare event.

(b) Domestic Implications

The existing Australian Genetic Resource Centres were established in 1980 under an agreement brokered by Standing Committee on Agriculture whereby the Commonwealth agreed to provide a one-off grant for capital and various agencies, mainly State Departments of Agriculture, agreed to provide operating funds. Since the conclusion of the first 5 year agreement the Centres have struggled for support and have survived only through the support of the Rural Industry Research And

development Corporations, particularly GRDC, support. However, it has been clear for some time that the present system needs a radical overhaul. By comparison with the USA and Canada which have strong coordinated national systems ours is ad hoc, poorly coordinated and poorly supported by both the State and Commonwealth Governments.

The Treaty imposes a range of obligations on contracting parties. These include:

- Provision of access to relevant PGRFA to other contracting parties including the IARC's. Australia would also be required to encourage those in the country who hold PGRFA to include those resources within the multilateral system.
- A requirement to ensure that the standard MTA is used for facilitated access transactions. Australia would also be required to provide for enforcement of the terms of the standard MTA as a contract under Australian law.
- A requirement to provide non-confidential information to an international 'information system'.
- A contribution to funding of the 'Multilateral System'
- Acceptance of the benefit sharing framework of the agreement.

At the present time, the curators of the Genetic Resource Centres in Australia would argue that, alone or jointly, they do not have the resources to meet these new obligations. Yet the State Government agencies are the custodians of the great bulk of the genetic resources conserved in Australia. If the Commonwealth ratifies the Treaty without an explicit commitment from the State Governments then it can only commit the small number of accessions held by Commonwealth agencies to the multilateral system. As things stand there would seem to be little incentive for the State Government Agencies to accept the extra cost of involvement in the multilateral system when much of the extra cost is to meet international obligations which are not their responsibility, and when the benefits remain unclear and may be several years away.

Article 18(d) of the Treaty states "Each contracting party agrees to undertake, and provide financial resources for national activities for the conservation and sustainable use of plant genetic resources for food and agriculture in accordance with its national capabilities and financial resources. The financial resources provided shall not be used to ends inconsistent with this Treaty in particular in areas related to international trade in commodities." This article would seem to place a strong obligation on the Commonwealth if it ratifies the Treaty to help financially to overcome the chronic financial problems plaguing the existing national network of genetic resources centres. Otherwise it will be seen to be in breach of the Treaty. The argument that the Commonwealth lacks the necessary financial resources to do this will have no credibility international.

Obviously, the Commonwealth with the State Agencies and Rural Industry Research and Development Corporations, can do this after the Treaty is ratified. However, a far more sensible strategy for Australia would be to put our own house in order first and develop a single coordinated and well functioning set of *ex situ* germplasm collections. Then with the agreement of all the stakeholders commit to the multilateral system for the crops covered by the Treaty and for the crops not covered by the Treaty to develop effective alternative arrangements. This will require the Commonwealth

and State Governments along with industry to remedy the deficiencies in the national network of genetic resource centres and to meet the obligations of the Treaty.

Benefit Sharing- A Critical Issue

Benefit sharing has been one of the more contentious issues during the protracted negotiations to develop the Treaty. While there is almost universal agreement with the principle of the equitable sharing of benefits between the owners and users of particular germplasm accessions, there is little agreement with how this should operate in practice.

One view is that the bulk of the accessions in modern gene-banks were sourced from developing countries, and that breeders in developed countries should pay a royalty similar in principle to that paid for patented genes to access and use these resources. This has not happened in the past and many developing countries feel that they have supplied germplasm resources to developed countries free of charge and then been asked to pay substantial royalties for PBR protected cultivars developed in those countries, in part, from those germplasm resources.

The alternative view is that the advanced cultivars contributed to gene banks by developed countries are far more valued and used in breeding programs than the primitive germplasm from developing countries. In this case it is argued that the benefits going to breeders in developing countries from access to the advanced varieties far outweighs that obtained by breeders in developed countries from the use of germplasm accessions sourced from developing countries.

This issue was not settled despite the long negotiations undertaken to develop the Treaty. Rather, Article 13 of the Treaty sets out a framework for the equitable sharing of benefits arising from the use, including commercial use, of PGRFA accessed under the multilateral system. While the Treaty specifies that benefit sharing will include payments, the level, manner and form of which shall be in line with 'commercial practice', it contains no details of how benefit sharing will operate in particular instances. These details are to be developed in the future by the Governing Body when and if the Treaty enters into force.

Under the Treaty as it stands, recipients of germplasm accessed under the Multilateral System must consent to the following:

- (i) not to assert legal ownership nor to seek intellectual property protection over the received germplasm or related information

The Treaty states: "Recipients shall not claim any intellectual property or other rights that limit the facilitated access to the plant genetic resources for food and agriculture or their genetic parts or components, in the form received from the multilateral system". This suggests that PBR protection which allows for the use of plant varieties derived in part or whole using germplasm resources obtained under the Multilateral System is acceptable as it allows the further use of those varieties in breeding.

- (ii) to make any transfer of the received germplasm or related information subject to these conditions

The legal implications of this condition for the curators of germplasm collections committed to the Multilateral System if Australia ratifies the Treaty as planned are unclear and require further elaboration.

- (iii) the equitable sharing of benefits from the commercial use of the received germplasm.

Payments are required under the Treaty only when all three of the following conditions apply (Fowler, 2003):

- Material is accessed from the Multilateral system
- That material is used by the recipient and is incorporated into a product that is a PGRFA, for example, a new crop variety.
- The recipient commercializes a product that is a PGRFA (e.g. a new crop variety, not a new cereal product or food) that incorporates material accessed from the Multilateral System.

It should be emphasized that varieties that are released into the public domain (not covered by any form of IP protection) are exempt from the benefit sharing requirement even though they may be commercialized by farmers groups such as registered seed growers. It should also be emphasized that the requirement to pay an equitable share of benefits from commercialization applies “*except whenever such a product is available without restriction to others for further research and breeding*”. Hence varieties protected by PBR will generally *not* trigger the benefit sharing provisions of the Treaty as a specific requirement of PBR protection is that protected cultivars are available for further research and breeding. In fact, it would appear that only cultivars protected by patents where the patent owner uses the patent protection to prevent further research and breeding would be liable for benefit sharing. Article 13.2(d)(ii) states that where the benefit sharing requirements are not formally triggered, recipients of germplasm will be “encouraged” to still make benefit sharing payments to facilitate the conservation and future availability of PRGFA. However, this is not a legal obligation.

It should also be emphasized that payments under the benefit –sharing arrangements will be made into a financial mechanism or account under the control of the Governing Body, not to Governments, institutions, or individuals who own or collected the germplasm accessed under the Multilateral System. The benefits arising from the Treaty are to be used by the Governing Body to support PGRFA activities primarily in developing countries.

It is difficult to precisely determine the impact of ratification of the Treaty on Australian commercial breeding programs when many of the details in relation to benefit sharing will be decided sometime in the future by the Governing Body. Overall though, assuming there is not a dramatic upsurge in the use of patents to protect varieties in Australia in the coming years, and provided the royalty payments into the benefit sharing fund are indeed ‘in line with commercial practice’ it seems reasonable to suggest the impact is likely to be small. We illustrate this point in Appendix I below using three scenarios based on past germplasm use agreements within Australia.

Nevertheless the present scenario may well change in the future. Section 13.2d(ii) states in part "The Governing Body may, from time to time, review the levels of payment with a view to achieving fair and equitable sharing of benefits, and it may also assess, within a period of five years from the entry into force of this Treaty, whether mandatory payment requirements in the MTA shall apply also in cases where such commercialized products are available without restriction to others for further research and breeding". If this change is introduced within the five years it will very substantially increase the cost of the Treaty to Australian breeding programs.

Perhaps the strongest argument for the Australian Government to ratify the Treaty is to ensure we, as a nation, have a seat on the Governing Body during the time it will make the crucial decisions about the levels of payments required under the Treaty and whether the requirements for payment will be extended to all protected cultivars including those protected by PBR. Such representation would help ensure that the mandatory payments established under the Treaty do in fact reflect current commercial practice and can oppose the extension of these payments to all commercially protected cultivars.

Financing the Governing Body

Another issue that will need rapid clarification if the Treaty enters into force is the financing of the Governing Body of the Treaty. Funds will flow to the Governing Body under the benefit sharing mechanism. However, these will be limited particularly during the early years of the operation of the Treaty. It is unlikely that it will be politically acceptable to use these funds to support the operations of the Governing Body. Rather the pressure will be for these funds to go to support PGRFA activities in developing countries.

This means the Governing Body will need to develop a funding strategy independent of the benefit sharing mechanism to support its operations and programs. Article 18 of the Treaty provides a framework for the development and implementation of a funding strategy by the Governing Body. The framework contains a number of elements including the provision of resources through bilateral, regional and multilateral channels and voluntary contributions by contracting parties, non-Government organizations and the private sector. At the beginning it is likely that the contracting parties, including Australia if it ratifies the Treaty, will be required to fund the operations of the Treaty. In the case of other Treaties (e.g. the CBD), the 'voluntary' contributions of the parties are based on an agreed percentage of the United Nations Scale of Assessments. Decisions on the provision of funding by the contracting parties will be made by the Governing Body after the Treaty enters into force.

If the Commonwealth Government is to gain strong support for the ratification of the Treaty it needs to make its intentions crystal clear in relation to the funding of the Governing Body.

Funding the Cost of Domestic Compliance with the Treaty

Compliance with the Terms of the Treaty will incur significant costs for Australia. The costs will be associated with first, the implementation of the standard MTA once it is agreed by the Governing body, second, policing of the terms of the Treaty especially by those who receive germplasm and then pass it on to others (principally the curators of the National Network of Germplasm Centres), and third, the collection and sharing of information on germplasm accessions flowing in and out of the country. Most of these costs will be incurred by the State Agencies that import and conserve the great bulk of the germplasm used in Australia. Unless these agencies are prepared to accept this additional burden, then it will cause an already severely under-funded system further stress.

It would appear to be essential for the Commonwealth and State Governments to clear understanding of the likely domestic costs of implementation of the Treaty, and more importantly who will meet those costs, preferably before the Treaty is ratified. Otherwise this issue is likely to be a source of bitter controversy for years to come that will jeopardize our international standing in the area of plant genetic resources. Industry is unlikely to see the funding of these costs as their responsibility. Again a clear statement from the Commonwealth and State Governments would be required as to the magnitude of these costs and how they will be met to ensure wide industry support for the ratification of the Treaty.

APPENDIX I

Three case scenarios are given here to illustrate the sort of economic impact the benefit sharing provisions of the Treaty may have on commercial Australian breeding programs. It should be stressed again that the benefit sharing provisions will *only* be triggered if a cultivar developed in part from germplasm accessed under the Multilateral System is commercialized in a way that prevents further research and breeding. In practice, this means cultivars protected by patents.

Three Case Scenarios

- (i) Single major gene of high value.

Under this scenario, we consider a single major gene or chromosome segment which has a substantial impact on cultivar performance. We assume this gene is transferred from an accession obtained under the multilateral agreement to a well performing commercial cultivar. Examples of such genes that have had a substantial impact on Australia agriculture in recent decades include the semi-dwarfing genes in wheat and rice, the BYDV resistance in barley, and the Sr 24/Lr 24 alien chromosome segment in wheat. It is also assumed the breeding company has obtained patent protection for the variety to prevent others from quickly developing competing cultivars with the same characteristics.

It is assumed 1000t of seed of the new cultivar are made available to a seed company in the first year and the cultivar is quickly taken up by producers. It is also assumed the seed company collects an end point royalty of \$1/tonne of which \$0.60 goes back to the breeder as royalty, and the breeder agrees to pay 10% of this royalty into the benefit sharing fund administered by the Governing Body. Under this scenario the benefits flowing to the benefit sharing fund will be:

TIME	GRAIN PRODUCTION	BREEDERS ROYALTY	BENEFIT SHARING
Year1	100,000t	\$60,000	\$6,000
Year2	1,000,000t	\$600,000	\$60,000
Year3	2,000,000t	\$1,200,000	\$120,000
Year 4	4,000,000t	\$2,400,000	\$240,000
Year5	6,000,000t	\$3,600,000	\$360,000
Year6	8,000,000t	\$4,800,000	\$480,000
Year7	7,000,000t	\$4,200,000	\$420,000
Year8	4,000,000t	\$2,400,000	\$240,000
Year 9	1,000,000t	\$600,000	\$60,000

It is assumed that a new replacement cultivar is introduced into the market at year 6 (developed from the original patented cultivar and proprietary germplasm) and the original cultivar is withdrawn from production at year 9. Under these assumptions the total return to the owner of the germplasm over the 9 year life of the variety would be over \$1.9m. This of course is an extreme example- very few varieties are likely to be

patented and very few genes would be expected to have such a rapid and widespread impact on a major industry. Nevertheless, this example does illustrate that under certain extreme circumstances benefit payments under the Treaty could be substantial. A question of crucial importance here is whether the second improved cultivar if it was derived from the first, would trigger the Treaty's benefit sharing provisions. It has been assumed here it would not, as no germplasm directly accessed from the Multilateral System has gone into its development. However, this point is uncertain and is the sort of issue that needs to be resolved by the Governing Body soon after the Treaty enters into force. It is in the resolution of this sort of issue that Australian representation on the Governing Body of the Treaty would be of great value.

At the other end of the scale we will consider the case of a single gene controlling an important quality trait which is of value in a small specialty market. The waxy genes in rice, wheat, barley, maize and sorghum are possible examples of such a gene. In this case, we again consider the gene was transferred from material obtained under the Multilateral Agreement and incorporated into a patent protected cultivar sold under a closed loop marketing system and used in a specialty end product. We also assume 50t of seed of the variety are made available to the seed company, an end point royalty of \$3.00/t is charged and \$2.60 of that is returned to the breeder who has agreed to pay the germplasm owner 5% of this royalty. Under this scenario the benefits flowing to the benefit sharing financial mechanism are illustrated below:

TIME	GRAIN PRODUCTION	BREEDERS ROYALTY	BENEFIT SHARING
Year 1	500t	\$1,200	\$60
Year 2	50,000t	\$120,000	\$6,000
Year 3	100,000t	\$240,000	\$12,000
Year 4	100,000t	\$240,000	\$12,000
Year 5	100,000t	\$240,000	\$12,000
Year 6	100,000t	\$240,000	\$12,000
Year 7	50,000t	\$120,000	\$6,000

Here it is assumed that the market for this specialty variety is 100,000t/year. That it takes 2 years to replace a variety and an improved cultivar is introduced at the end of 6 years. In this case the total benefit flowing to fund controlled by the Governing Body would be \$60,060, for this first variety. Again the question of whether the second cultivar derived from the first without the additional use of germplasm accessioned from the multilateral System triggers the benefit sharing provisions of the Treaty is a critical one.

What these examples illustrate is that the level of benefits to be paid into the fund will depend on the size of the crop, the level of royalty, the proportion of royalties going into benefit sharing and the level of trailing royalties that must be paid on second and subsequent cultivars.

(ii) Synthetic Variety of a Pasture Plant

Under this scenario we consider the case of a breeder who develops an improved cultivar of a pasture legume, say white clover. We will assume the improved population is an eight line synthetic, where 7 of the parental lines in the synthetic were derived from adapted proprietary material and one of the lines was accessed under the Multilateral System. Because of the unique features of this newly developed synthetic variety, it is decided to seek patent protection for the variety. In this case none of the features that give the variety its uniqueness were derived from the material accessed under the Multilateral System. Nevertheless, the fact that the variety contains material accessed under the Multilateral System *and* is protected by an IP system that can restrict further use for research and breeding, triggers the benefit sharing provisions of the Treaty.

We assume the breeder provides the seed company commercializing the cultivar with 5kg of breeders seed. This is built up over two years and 40t of seed is initially available for release into the marketplace. Sales build up over a 3 year period and peak at about 300t/year. Seed is sold at \$10/kg and of that \$2/kg is returned to the breeder as royalty. It is also assumed that 5% of that royalty is payable into the benefit sharing fund. Under this scenario the returns over time to the benefit sharing fund will be:

TIME	SEED SALES	BREEDERS ROYALTY	BENEFIT SHARING
Year 1	30t	\$60,000	\$3,000
Year 2	70t	\$140,000	\$7,000
Year 3	140t	\$280,000	\$14,000
Year 4	300t	\$600,000	\$30,000
Year 5	300t	\$600,000	\$30,000
Year 6	300t	\$600,000	\$30,000
Year 7	200t	\$400,000	\$20,000
Year 8	150t	\$300,000	\$15,000
Year 9	100t	\$200,000	\$10,000
Year 10	100t	\$200,000	\$10,000

It is assumed the cultivar is discontinued after 10 years. The total royalty payment would therefore be \$3.38m and the total contribution to the benefit sharing fund of the Governing Body will be \$169,000.

(iii) Parental Line for a Bi-parental Hybrid

The final scenario we will consider is where a company obtains a set of potential F1 hybrid parental lines under the Multilateral System- say sorghum lines carrying specific restorer genes-which are tested in combination with proprietary female lines to assess their commercial potential. We assume one of these lines is selected as a parent of a new single cross hybrid cultivar. Under normal circumstances, no protection would be taken out on the new hybrid as the male sterility system provides its own inbuilt protection by requiring producers to buy new hybrid seed for each crop. In these normal circumstances the benefit sharing provisions of the Treaty would not be triggered as the original line is still in the public domain and there is no impediment to the use of the hybrid cultivar for further research and breeding. The

same would be true if PBR protection was taken out on the female line and hybrid to protect the company's proprietary position, or if the female line is patented. Only if the hybrid is patented (protection of the male line as received is specifically prevented under the provisions of the Treaty) are the benefit sharing arrangements under the Treaty triggered and, in general, in most crops and countries, this is an unlikely circumstance.

However, if we assume that our company, for good commercial reasons, decides to patent a hybrid where one of the parental lines was accessed under the Multilateral System then a contribution to the benefit sharing fund will be required. We assume seed of the patented variety is sold for \$4/kg, which includes a \$0.20 royalty payment to the breeder. We will also assume the breeder has agreed to pay 10% of the royalty into the benefit sharing fund.

Here the contribution to the benefit sharing fund over time will be:

TIME	SEED SALES	BREEDERS ROYALTY	BENEFIT SHARING
Year 1	100t	\$20,000	\$2,000
Year 2	400t	\$80,000	\$8,000
Year 3	800t	\$160,000	\$16,000
Year 4	800t	\$160,000	\$16,000
Year 5	800t	\$160,000	\$16,000
Year 6	800t	\$160,000	\$16,000
Year 7	400t	\$80,000	\$8,000
Year 8	400t	\$80,000	\$8,000

Under this scenario the total payment to the benefit sharing fund would be \$90,000 over the eight year life of the variety.