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Intellectual property and the material transfer agreement under the International Treaty on Plant Genetic Resources for Food and Agriculture

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*244 Introduction

The plant genetic resources for food and agriculture (PGRFA) are the raw material for crop improvement, whether by means of farmer selection, classical (traditional) plant breeding or modern (bio)technologies. PGRFA are therefore essential for addressing future food security and adapting to unpredictable environmental changes. In recognition of these important functions,1 the Food and Agriculture Organisation of the United Nations addressed some of these concerns in the Treaty from June 29, 2004, providing for:

"…the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of the benefits arising out of their use, in harmony with the *Convention on Biological Diversity*, for sustainable agriculture and food security" (art.1.1).

The scope of the Treaty includes the plant genetic resources forming the "efficient, effective, and transparent" Multilateral System (art.10.2). The Multilateral System itself includes "all [PGRFA] listed in Annex 1 that are under the management and control of the Contracting Parties and in the public domain" (art.11.2), contributions from the "*ex situ* collections of the International Agricultural Research Centers (IARC) of the Consultative Group on International Agricultural Research" (CGIAR) (arts 11.5 and 15.1a) and contributions from "other international institutions" (arts 11.5 and 15.5).2 While the range of PGRFA covered by the Treaty is presently limited, the Treaty provides the institutional machinery for a much broader reach in anticipation of further PGRFA contributions in the future. Access to the Treaty PGRFA is proscribed according to an MTA that has been adopted by the Treaty's Governing Body.3

The issue addressed by this article is the role of intellectual property in meeting the objectives of the Treaty through the MTA. A failure to capture the potential benefits from the de-

velopment and trade in PGRFA is likely to undermine future food security and the possibility of adapting to unpredictable environmental changes. This is significant, as implementing the Treaty is likely to establish a global standard for the transfer of PGRFA and other plant materials. The next part of the article outlines the terms and conditions of the MTA adopted by the Governing Body, followed by a discussion about the likely meaning and merits of some of the proposed terms and conditions of the MTA. The article concludes with a discussion challenging the belief that intellectual property over PGRFA accessed from the Multilateral System will necessarily promote future PGRFA conservation and sustainable use.

The Material Transfer Agreement (MTA)

The MTA provides for a contractual "agreement" between "a provider" of "material" ("[t]he [PGRFA] specified in Annex 1 [of the MTA]" being "a list of the Material provided under this [MTA]": cl.2 and Annex 1) and "a recipient" of that material (cl.1). The term "[PGRFA]" is defined to mean "any genetic material of plant origin of actual or potential value for food and agriculture", where "genetic material" means "any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity" (cl.2; see also art.2). The intellectual-property-related rights and obligations include:

• The provider undertakes to make "available" the "passport data" and "any other associated available non-confidential descriptive information" associated with the material (cl.5b).

• The provider undertakes that the access to the material that is protected "by intellectual and other property rights" will be "consistent with relevant international agreements" and "relevant national laws" (cl.5d).

• The recipient undertakes not to claim "any intellectual property or other rights" that might ***245** limit the material "in the form received", including "its genetic parts or components" (cl.6.2).

• The recipient undertakes to transfer any benefit-sharing obligations together with any assignment of intellectual property over "any Products developed from the Material or its components, obtained from the Multilateral System" (cl.6.10).

The following terms are defined limiting the scope of the MTA:

• "Product" means "[PGRFA] that incorporate the Material or any of its genetic parts or components that are ready for commercialization, excluding commodities and other products used for food, feed and processing" (cl.2).

• "[C]ommercialize" means "to sell a Product or Products for monetary consideration on the open market … Commercialization shall not include any form of transfer of [PGRFA] under Development" (cl.2).

• "Sales" means "the gross income resulting from the commercialization of a Product or Products, by the Recipient, its affiliates, contractors, licensees and lessees" (cl.2).

The terms of the MTA appear to envisage PGRFA in three forms:

• PGRFA “in the form received” from the Multilateral System--meaning the material, and including “all available passport data and, subject to applicable law, any other associated, available, non-confidential descriptive information” (cl.3 and Annex 1).

• PGRFA “underDevelopment”--meaning “material derived from the Material, and hence distinct from it, that is not yet ready for commercialization and which the developer intends to further develop or to transfer to another person or entity for further development. The period of development for the [PGRFA] under Development shall be deemed to have ceased when those resources are commercialized as a Product” (cl.2).

• “Product” from the PGRFA received from the Multilateral System--meaning “[PGRFA] that incorporate the Material or any of its genetic parts or components that are ready for commercialization, excluding commodities and other products used for food, feed and processing” (cl.2).

Provision is made to ensure that any transfers of material supplied under the MTA are undertaken according to the same rights and obligations, albeit in a separate agreement (cl.6.4). Where the material supplied under an MTA is “under Development”, special provision is made to ensure that it continues to be subject to an MTA (cl.6.5) with the prospect of additional provisions applying, including “the payment of [additional] monetary consideration” (cl.6.6).

The benefit sharing required by the MTA depends on whether the recipient restricts the further “research and breeding” uses of the product being commercialized:

• Where the product that incorporates material is available *with* restrictions (cl.6.7), “the Recipient shall pay a fixed percentage of the Sales of the commercialized Product into the mechanism established by the Governing Body” being “one point-one percent (1.1 %) of the Sales of the Product or Products less thirty percent (30%)” (cl.6.7 and Annex 2) or an alternative discount rate “based on the Sales of any Products and of the sales of any other products that are Plant Genetic Resources for Food and Agriculture belonging to the same crop” of “zero point five percent (0.5%) of the Sales of any Products and of the sales of any other products that are Plant Genetic Resources for Food and Agriculture belonging to the same crop” (cl,6.11 and Annexes 3 and 4).

• Where the product that incorporates material is available *without* restrictions (cl.6.8), “the Recipient is encouraged to make voluntary payments into the mechanism established by the Governing Body” (cl.6.8). This alternative will not apply where the alternative discount rate has been chosen (cl.6.11 and Annexes 3 and 4).

Under the MTA, dispute settlement may be initiated by the provider, the recipient or an entity acting on behalf of the Governing Body “regarding rights and obligations of the Provider and the Recipient” (cll.8.1 and 8.2). The dispute should first be addressed through “good faith” negotiation, and failing this mediation, and then failing this arbitration initially “under the Arbitration Rules of an international body as agreed by the parties to the dispute” and then “under the Rules of Arbitration of the International Chamber of Commerce, by one or more arbitrators appointed in accordance with the said Rules” (cl.8.4). Importantly, the jurisdiction for the dispute settlement is not proscribed,4 but the applicable laws are:

“[the] General Principles of Law, including the *UNIDROIT Principles of International*

Commercial Contracts 2004, the objectives and the relevant provisions of the Treaty, and, when necessary for interpretation, the decisions of the Governing Body" (cl.7).

Interpreting the MTA

One of the key questions in understanding the MTA will be in interpreting its terms and conditions. The UNIDROIT Principles of International Commercial Contracts 2004 provide:

"(1) A contract shall be interpreted according to the common intention of the parties.

(2) If such an intention cannot be established, the contract shall be interpreted according to the meaning that reasonable persons of the same kind as the parties would give to it in the same circumstances."5

The Treaty provides for the Governing Body to give:

***246** "policy direction and guidance to monitor, and adopt such recommendations as necessary for the implementation of this Treaty and, in particular, for the operation of the Multilateral System" (art.19.3a),

and a forum for dispute resolution (art.22.1). However, the likely and presently speculative interpretation of key provisions is central to the uptake and success of the Treaty. The following analysis considers some of the likely interpretations of key provisions affecting intellectual property issues. This analysis is not exhaustive, instead highlighting some of the uncertainties that remain in the MTA.

Scope of MTA

The MTA provides:

"This Agreement is entered into within the framework of the Multilateral System and shall be implemented and interpreted in accordance with the objectives and provisions of the Treaty" (cl.4.1).

These terms reflect the obligation in the Treaty:

"… facilitated access, in accordance with Arts 12.2 and 12.3 above, shall be provided pursuant to a standard material transfer agreement (MTA), which shall be adopted by the Governing Body and contain the provisions of Arts 12.3a, d and g, as well as the benefit-sharing provisions set forth in Art 13.2d(ii) and other relevant provisions of this Treaty …" (art.12.4).

Article 12.2 deals with "the necessary legal or other appropriate measures to provide such access to other Contracting Parties through the Multilateral System", and art.12.3 sets out the mandatory condition for "facilitated access". The term "facilitated access" is not defined in the Treaty or MTA, and probably means access to the PGRFA in the Multilateral System *only* for use or conservation for the purpose of "research, breeding and training for food and agriculture" (see art.12.3a and cl.6.1). Any other uses, including "chemical, pharmaceutical and/or other nonfood/feed industrial uses" (art.12.3a and cl.6.1), are outside the bounds of the MTA and will require a separate agreement with no express obligations to benefit-share under the Treaty. The effect of these terms is to limit the scope of the

Treaty and MTA to material provided for the purpose of "research, breeding and training for food and agriculture". Material provided for these other purposes might be provided on more or less favourable and different terms and conditions (albeit subject to the mandatory obligations of the Convention on Biological Diversity from December 29, 1993, discussed below).

The meaning of the terms "research, breeding and training for food and agriculture" are essential to determining the likely scope of the Treaty, although they remain uncertain. It seems likely, however, that they were intended to address the non-commercial or pre-commercial activities (for PGRFA "under Development"), with the prospect of recovering immediate benefits from the "non-confidential information that results from research and development" (cl.6.9) and some later monetary benefits where there was some commercial application (sales of a product) from something developed from the accessed materials (see cll.6.7 and 6.8).

A further uncertainty is whether the MTA is required for access to the Multilateral System by non-contracting parties. The failure to address this uncertainty in either the MTA or Treaty suggests that such access and transfer of Multilateral System PGRFA is possible adopting different terms and conditions, including terms and conditions that might limit "facilitated access" by contracting parties. This might further limit the scope of the Treaty and the MTA.

The scope of the MTA is relevant to intellectual property considerations because the MTA provides:

"The Recipient shall not claim any intellectual property or other rights that limit the facilitated access to the Material provided under this Agreement, or its genetic parts or components, in the form received from the Multilateral System" (cl.6.2).

The Treaty uses similar terms:

"Recipients shall not claim any intellectual property or other rights that limit the facilitated access to the [PGRFA], or their genetic parts or components, in the form received from the Multilateral System" (art.12.3d).

These MTA terms appear to *only* limit "any intellectual property or other rights" where that would "limit the facilitated access" to "the Material provided under this [MTA], or their genetic parts or components" and "in the form received from the Multilateral System". The meanings of elements of these obligations are uncertain:

• "Limit the facilitated access": while the term "facilitated access" is not defined in the Treaty or MTA, it is probably confined (as presented above) to access where the PGRFA is to "be used or conserved only for the purposes of research, breeding and training for food and agriculture" (cl.6.1; see also art.12.3a). This suggests that the "intellectual property or other rights" may only be limited if they would restrict use or conservation "for the purposes of research, breeding and training for food and agriculture". The leaves open the potential for intellectual property to be claimed over material received from the Multilateral System as long as the intellectual property does not "limit the facilitated access".

• "The Material provided under this [MTA], or their genetic parts or components": the term "material" is defined in the MTA to mean "[PGRFA] specified in Annex 1" that is "a

list of the Material provided under this [MTA]", and including "all available passport data and, subject to applicable law, any other associated, available, non-confidential descriptive information" (cl.3 and Annex 1). The term "[PGRFA]" is defined in the MTA to mean "any genetic material of plant origin of actual or potential value for food and agriculture", where "genetic material" means "any material of plant origin, including reproductive and vegetative propagating material, containing functional units of heredity" (cl.2; see also art.2). Presumably, the specific reference to "their genetic parts or components" was intended to limit the ***247** claiming of any intellectual property over any of the parts and components of the accessed material.

• "In the form received from the Multilateral System": the terms "in the form received" are not defined in the MTA or Treaty, so they probably mean the material as received from the Multilateral System.6 However, it is not clear how different materials need to be so that they are no longer "in the form received".7 At the time of the Treaty's negotiation, Australia expressed the concern "that the final text allows continuation of our domestic policy permitting [intellectual property] protection for genetic material which meets relevant standards"8 and this potentially includes claims over *the* PGRFA obtained from the Multilateral System.9 Whether this has any real world consequences, or is just an artifact of interpretation, is unclear.

Depending on the meaning adopted for these key terms, there appears to be considerable potential for intellectual property to be claimed over material received from the Multilateral System and material remaining part of the Multilateral System.

Information provision

The MTA provides:

"All available passport data and, subject to applicable law, any other associated available non-confidential descriptive information, shall be made available with the [PGFRA] provided" (cl.5b).

The Treaty uses exactly the same terms (art.12.3c). This provision appears in the part of the Treaty that addresses generally access to the PGRFA forming the "Multilateral System" and sets out the conditions of "facilitated access" (art.12.3a-e). The probable meaning of these key terms is set out below:

• "Passport data" is probably the data and information recorded when the sample was originally collected or generated, such as the accession number, scientific names, pedigree/cultivar names, donor names, donor identification number, acquisition date, date of last regeneration or multiplication, and so on.10

• The term "any other associated available non-confidential descriptive information" probably refers to the other data and information about the accession referred to in art.5.1e of the Treaty that is vital to the use and usefulness of the PGRFA, including "adequate documentation, characterization, regeneration and evaluation" of the PGRFA.11 Importantly, this must not be secret, although how secret and the necessary level of measures taken to maintain secrecy are uncertain. The limitation to "descriptive information" is also uncertain as know-how and other useful data and information about the use and usefulness of the PGRFA may not be addressed. Importantly, the MTA makes provision for this "descriptive information" to be listed with the supply of the material (see Annex 1).

Depending on the meaning adopted for these key terms, there appears to be considerable potential for some know-how and other useful data and information about the material received from the Multilateral System to be withheld.

Consistent with relevant international agreements

The MTA provides:

“Access to [PGRFA] protected by intellectual and other property rights shall be consistent with relevant international agreements, and with relevant national laws” (cl.5d).

The Treaty uses exactly the same terms (see art.12.3f). These terms appear to confirm that any PGRFA accessed from the Multilateral System that is already “protected by intellectual and other property rights” must continue to respect those restrictions.

The meaning of the term “intellectual property” is not entirely certain, but most probably applies broadly to the internationally agreed categories of intellectual property expressed in agreements, such as the World Trade Organisation's Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS)12 dealing with copyright and related rights, trademarks, geographical indications, industrial designs, patents, layout-designs (topographies) of integrated circuits and the protection of undisclosed information (TRIPS arts 9 to 40). However, some uncertainty may arise in that the substance and content of intellectual property are determined by the domestic laws of contracting parties, with different contracting parties adopting different standards. For example, Australia has adopted TRIPS as well as the Australia-United States Free Trade Agreement,13 the latter imposing “TRIPS-plus” measures in Australia (and the United States).14 Should materials accessed from the Multilateral System by a ***248** provider in Australia to a recipient in another country comply with Australian intellectual property standards? This becomes particularly important if the intellectual property standards of countries adopting “TRIPS-plus” are to be transferred with the materials to countries with lesser standards both as a way of de facto extension of intellectual property standards across borders or as a means of avoiding intellectual property restrictions.

Exhaustion

The MTA provides that any transfers of material supplied under the MTA are to be undertaken according to the same rights and obligations, albeit in a separate agreement (cl.6.4). Where the material supplied under an MTA has been developed (being PGRFA “under Development”), special provision is made to ensure that it continues to be subject to an MTA (cl.6.5) with the prospect of additional provisions applying, including “the payment of [additional] monetary consideration” (cl.6.6). The effect of these provisions appears to be an obligation to retain the terms and conditions of the MTA with the material and its progeny developments as long as the use or conservation is for “the purposes of research, breeding and training for food and agriculture”. As soon as some commercial purpose is made (i.e. commercialisation, or selling a product for a monetary consideration on an open market), the MTA benefit-sharing provisions take effect on the product as a commodity (see cll.6.7, 6.8 and 6.9). Where the use or conservation changes from “research, breeding and training for food and agriculture” to another use that does not involve commercialisation (cl.6.6), the recipient will be obliged to negotiate again with the provider, as the MTA provides that:

"[t]he Recipient undertakes that the Material shall be used or conserved *only* for the purposes of research, breeding and training for food and agriculture" (emphasis added) (cl.6.1).

Presumably this latter agreement(s) would address benefit-sharing arrangements, albeit not necessarily the same as those proposed in the MTA (as discussed above).

An uncertainty in establishing exhaustion under the Treaty is determining when the PGRFA in the Multilateral System ceases to be "under the management and control of the Contracting Parties" and "in the public domain" (art.11.2). The terms "the management and control of the Contracting Parties" probably refers to governmental control and where "appropriate measures" have been undertaken to satisfy governmental control over PGRFA managed and controlled by others (art.11.3). However, the terms "in the public domain" raises a particular difficulty. Under the Treaty, the Multilateral System is a range of different *in situ* and *ex situ* collections of PGRFA available for "facilitated access" and then an obligation to comply with the terms and conditions of the MTA where "facilitated access" to the PGRFA has been undertaken (see arts 10, 11 and 12). This suggests that as soon as "facilitated access" to an element of PGRFA (such as a seed) is subject to some restriction outside the terms and conditions of the Treaty and MTA, then that element of the PGRFA is no longer a part of the Multilateral System because it ceases to be "in the public domain". In other words, imposing some restriction on uses on the PGRFA in the Multilateral System takes that PGRFA outside the Multilateral System because it is no longer "in the public domain" (unless it is actively returned to the Multilateral System: see arts 11.2 and 11.3). For example, an element of PGRFA (such as a cutting of a plant variety) over which "facilitated access" has been undertaken might be crossed with another variety to produce a new valuable variety that is patented. Potentially, the patent that restricts access to that new valuable variety (and the parental variety for some crosses) may take the parental plant variety out of the Multilateral System because that plant variety is no longer "in the public domain".15 That PGRFA might then be voluntarily returned to the Multilateral System (see arts 11.2 and 11.3) and the patent respected by subsequent "facilitated access" (see art.12.3f). The effect of removing the PGRFA from the Multilateral System may be to exhaust the operation and effect of the terms and conditions of the Treaty. However, under the MTA this may have been resolved by narrowing the scope of the MTA (discussed above) and requiring further agreements, although uncertainties remain.

The MTA addresses the material provided by the provider and received by the recipient as documented in the MTA and subject to the terms and conditions set out in the MTA (see cll.1 and 3 and Annex 1). The MTA provisions dealing with the use and conservation apply to the materials received by the recipient (cl.6.1) and through a "new" MTA for any transfers of that material (cl.6.4) or any transfers of PGRFA under development from that material (cl.6.5). However, where a product results from the material, and that product is commercialised through sale for monetary consideration on an open market (see cll.2, 6.7 and 6.8), it is not certain whether the terms and conditions of the MTA (and Treaty) are exhausted. Presumably, a seed offered for sale for monetary consideration on an open market that incorporated material provided under an MTA would be purchased and used according to the terms and conditions of the purchase agreement. Unless this purchase agreement stipulates that the terms and conditions of the MTA apply (and there is no obligation in the MTA to this effect),16 a third-party purchaser would be unlikely to be required to comply with the MTA's terms and conditions even where they used the seed for "research and

breeding". This seems a likely interpretation as the MTA expressly provides:

"[a]fter the expiry or abandonment of the protection period of an intellectual property right on a Product that incorporates the Material, the Recipient is encouraged to place a sample of this Product into a collection that is part of the Multilateral System, for research and breeding" (cl.6.9).

***249** This provision appears to envision the accessed materials being changed (no longer "in the form received") and leaving the Multilateral System to be later returned when they are again "in the public domain". Presumably, in this time outside the Multilateral System, the material incorporated in the product is also outside the scope of the MTA, those terms and conditions being exhausted for purchasers on commercialisation.

Importantly, the terms of conditions of the MTA applying to the recipient will not be exhausted on the commercialisation of a product incorporating accessed materials. Those obligations include benefit-sharing (cll.6.7 and 6.8), all non-confidential information from research and breeding (cl.6.9), transferring benefit-sharing obligations with the assignment of intellectual property over products (cl.6.10), and so on. These obligations presumably attach to any material, PGRFA "under Development" or product under the control of the recipient in perpetuity.

Transfer of intellectual property (IP)

The MTA provides:

"A Recipient who obtains intellectual property rights on any Products developed from the Material or its components, obtained from the Multilateral System, and assigns such intellectual property rights to a third party, shall transfer the benefit-sharing obligations of this Agreement to that third party" (cl.6.10).

The Treaty does not have any similar terms. This requirement for the MTA is presumably to ensure that the benefit-sharing obligations that are derived from intellectual property over the commercialisation of PGRFA incorporating materials accessed from the Multilateral System are not exhausted by transferring those rights to a third party. This is likely to be vital where there are real monetary benefits following from PGRFA accessed from the Multilateral System. It is not clear, however, how those monetary benefits might be recovered where the recipient fails to transfer the benefit-sharing obligations.

Access to and transfer of technology

TheMTA imposes on recipients amandatory obligation to "make available17 to the Multilateral System … all non-confidential information that results from research and development carried out on the Material' (cl.6.9). The recipient is also "encouraged to share through the Multilateral System non-monetary benefits … that result from such research and development" (cl.6.9). The non-monetary benefits include the exchange of information, access to and transfer of technology, capacity-building, and the sharing of the monetary and other benefits arising from commercialisation (art.13.2). Importantly, these "non-monetary benefits" do not require the recipient to make their technology accessible or transfer it to others, but, rather, it is a direction to the contracting parties to the Treaty and an obligation between contracting parties. That is, the access to and transfer of technology provisions envision a Treaty obligation on the contracting parties to:

"… provide and/or facilitate access to technologies for the conservation, characterization, evaluation and use of plant genetic resources for food and agriculture which are under the Multilateral System" (art.13.2b).

Importantly, this may include access and transfer "under fair and most favorable terms", albeit respecting intellectual property over the accessed and transferred technology (art.13.2b). Therefore, for the purposes of the MTA and the obligations on the providers and recipients, the Treaty's access to and transfer of technology provisions are of little relevance. This is significant for intellectual property holders, other than contracting states, as neither the Treaty nor the MTA imposes any obligation for access or transfer "under fair and most favorable terms" of their intellectual-property-protected products, processes or know-how.

Interaction with the CBD

The Treaty was implemented "in harmony with the Convention on Biological Diversity" (CBD) (art.1.1) and its objectives of conservation of equitable benefit-sharing to achieve sustainable agriculture and food security are to "be attained by closely linking this Treaty … to the [CBD]" (art.1.2). These provisions and the initial impetus to negotiate the Treaty reflect the close association between the Treaty and the CBD. However, the relationship is between independent international agreements; the CBD may influence the Treaty's interpretations and obligations, but does not define them (see, for example, art.19.3g and l).18 In other words, the Treaty establishes an independent framework for the PGRFA forming the Multilateral System and where the PGRFA was collected after December 29, 1993 that PGRFA will need to have complied with both the Treaty and the CBD (see, for example, art.15.3). Compliance with the Treaty through adoption of the MTA may, however, substitute for compliance with the CBD as the obligations of prior informed consent and mutually agreed terms required by the CBD are common to both agreements.19 A question remains as to whether other obligations may carry over from the CBD and affect the MTA. The Australian Government's response to the CBD may be instructive for the Treaty and the MTA.

Following adoption of the CBD, the Australian Commonwealth, state and territory governments made a commitment in the National Strategy for the Conservation of Australia's Biological Diversity (hereinafter, ***250** "Conservation Strategy") "to bridge the gap between current activities and the effective identification, conservation and management of Australia's biological diversity", with a further commitment to "implement this Strategy as a matter of urgency".20 In particular, the strategy "recognized" that:

"[t]here is a pressing need to strengthen current activities and improve policies, practices and attitudes to achieve conservation and sustainable use of biological diversity".21

However, in putting the CBD into effect, the Australian Government has focused on legal provenance and promoting investment in biological resource-based product research and development that is more consistent with the commitments made in the Australian Biotechnology: A National Strategy (hereinafter, "Biotechnology Strategy") for "productive investment in biotechnology research and development" and "secure access to genetic and biological resources".22 Thus, the commitment in the Biotechnology Strategy "objective" to "[w]ork with the States and Territories to achieve nationally consistent regimes on access" resulted in the Nationally Consistent Approach for Access to and the Utilization of

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Australia's Native Genetic and Biochemical Resources, which expressly divorces the CBD's objective of conservation from the fair and equitable sharing of the benefits from using biological resources.23 The outcome has been to address the concerns of biodiversity conservation in other governmental programmes,24 and use the formal obligations for access and benefit-sharing as a forum to address the concerns of legal provenance and promoting investment.25

An important difference between the CBD and the Treaty is that the CBD expressly provides that patents and other forms of intellectual property should support the CBD's objectives, including biodiversity conservation and sustainable use (art.16(5)), and that contracting parties should adopt incentive measures that promote biodiversity conservation rather than its destruction and decline (art.11). The Treaty does not have such protections, instead:

"[*a*]*ffirming* that nothing in thisTreaty shall be interpreted as implying in any way a change in the rights and obligations of the Contracting Parties under other international agreements" (Preamble),

and that access to PGRFA "protected by intellectual and other property rights shall be consistent with relevant international agreements" (art.12.3f). The effect of this will undoubtedly be that Australia will maintain its present intellectual property settings and standards and require the Treaty's implementation to comply with those settings and standards.26 This is certainly the way in which the Australian Government has responded to its CBD obligations: Australia has insisted that there is no conflict between patents (and other forms of intellectual property) and the conservation envisaged by the CBD,27 and actively promoted the adoption of more restrictive intellectual property standards.28

Dispute settlement

TheMTA provides for dispute settlement (see cll.8.1 to 8.4) and identifies the applicable laws (cl.7), while the Treaty requires contracting parties to:

"…ensure that an opportunity to seek recourse is available, consistent with applicable jurisdictional requirements, under their legal systems, in case of contractual disputes arising under such MTAs, recognizing that obligations arising under such MTAs rest exclusively with the parties to those MTAs" (art.12.5).

However, the issues of jurisdiction and applicable law have raised complex problems in other benefit-sharing contractual arrangements29 ; it is uncertain whether the MTA's provisions will be adequate to ***251** resolve jurisdiction disputes. The Treaty appears to contemplate "facilitated access" and benefit-sharing through the Multilateral System as part of the laws, regulations and procedures of contracting parties (see arts 4 and 10.2 and cl.4.2) and the MTA as implementing the framework of the Treaty's Multilateral System (cl.4.1 and arts 12.1 and 12.4). The lack of a clear separation between the MTA and the Treaty in the circumstances of a dispute means that an MTA dispute might also be characterised and resolved as a dispute about the Treaty.

The Treaty provides for compliance with the Treaty to be determined by the first meeting of the Governing Body establishing "cooperative and effective procedures and operational mechanisms to promote compliance with the provisions of this Treaty and to address issues of non-compliance" (art.21). The Treaty also provides for dispute settlement in the

first instance by negotiation (art.22.1) or mediation (art.22.2). If this fails, the dispute may be resolved according to either an agreed mechanism between the parties (art.22.4) or a compulsory arbitration (either according to the Treaty or the International Court of Justice: art.22.3) or conciliation (according to the Treaty: art.22.4) depending on the contracting parties' commitments to the Treaty (art.22.3).

At the First Session of the Governing Body on June 12, 2006, the Governing Body established a Compliance Committee and decided to consider and approve procedures and operational mechanisms on compliance at its Second Session.30 At the First Session, the document setting out a consolidation of written submissions from governments on procedures and mechanisms to promote compliance and to address issues of non-compliance31 was available and identified a number of outstanding issues.32 Significantly, there appears to be no disagreement that the compliance procedures and mechanisms (art.21) “are separate from, and without prejudice to, the dispute settlement procedures and mechanisms” (art.22).33 However, it remains contentious whether the compliance procedures and mechanisms are legally binding,34 especially where those procedures and mechanisms might be directed at issues in dispute between the contracting parties and characterised as non-compliance.35 For example, a dispute under the MTA between a provider and a recipient from different contracting parties might be characterised as an issue of non-compliance; should this be an allowable forum for resolving that dispute? This is a potentially important issue as an uncertain route to resolving disputes is likely to undermine the efficiency and effectiveness of the Multilateral System, as potential contributors and providers are uncertain about enforcing their benefit entitlements and recipients uncertain about the likely costs and consequences of accessing PGRFA. Further, the mechanisms (measures) to promote compliance and address non-compliance might include the Governing Body making decisions about “the provision of financial and technical assistance, technology transfer, training and other capacity-buildingmeasures”36 that introduces a volatile political consequence to *any* dispute.37

Discussion

The purpose of this article was to address the role of intellectual property in the MTA. The preceding analysis suggests that the role of intellectual property in the MTA is as: (i) a concern that intellectual property should not limit “facilitated access” to the Multilateral System's PGRFA (cll.5b, 5d and 6.2); and (ii) a means of capturing value from the development and commercialisation resulting from the “facilitated access” to the Multilateral System's PGRFA (cll.6.2, 6.9 and 6.10). This role, however, appears to be significantly complicated by the context of the MTA itself.

The limited scope of the MTA and Treaty to PGRFA “use and conservation” *only* for “research, breeding and training for food and agriculture” (see art.12.3a and cl.6.1) means that *only* those using PGRFA accessed from the Multilateral System for those narrow purposes must enter into the MTA and comply with its obligations. Providers of PGRFA for other uses may adopt other terms and conditions, although these may be limited by the requirements of the CBD for prior informed consent, mutually agreed terms, and so on, for materials collected after December 29, 1993. The meaning of the terms “research, breeding and training for food and agriculture” are likely to be significant as they provide an opportunity for those holding valuable PGRFA to avoid the MTA and Treaty benefit-sharing obligations and negotiate a different (and presumably better) deal with prospective recipients. If the MTA is failing to deliver the kinds of benefits necessary to maintain and promote

PGRFA conservation and sustainable use, then PGRFA holders (providers) may contemplate using this avenue to avoid the MTA and capture all of the benefits themselves. For example, a PGRFA holder might simply offer the accessed PGRFA to a recipient for immediate sale by the recipient with additional provisions capturing the benefits from further developments (as a "commodity"; see cl.6.7 and Annex 2). Thus, built into the MTA is an efficiency mechanism--unless the MTA is better than some other ***252** agreement, providers will have an incentive to choose other agreements. This then raises the question of whether the MTA can *really* deliver appropriate value(s) for providers.

The central question is whether the marginal private returns to the provider of the PGRFA from conservation and other sustainable activities (such as the running costs of maintaining a culture collection, planting low yield crops, and so on) can at least correspond with the marginal social returns (such as the benefit of conserved PGRFA for food security and adaptation to an unpredictable climate).38 If the private returns are less than the social returns, then a decline in conservation and other activity might be expected unless some other means is found to match the social and private returns (such as a grant to the provider to cover the difference between the private and social returns). As the MTA is currently drafted, the social returns are well represented: the exchange of information, access to and transfer of technology, capacity-building and other non-monetary benefits from commercialisation (art.13.2 and cll.6.7, 6.8 and 6.9) and the spillovers from an exchange mechanism.39 While some of these may also have private values, such as access to and transfer of technology and capacity-building, the sharing of the monetary benefits arising from commercialisation is likely to be the major form of private returns with positive conservation outcomes and they are much less certain (cll.6.7 and 6.8).40 Further, these monetary benefits are essential to maintaining the existing valuable *ex situ* and *in situ* germplasm collections that require continual storage, regeneration and testing (the characterisation and evaluation data and information) to reveal or increase their potential values.41 Importantly, the monetary benefits arising from commercialisation are likely to be vital in establishing and delivering on conservation even if that is to be achieved through, for example, institutional strengthening, research, training, communication and networking, community-based conservation programmes, non-market and market incentives to farmers, and so on.42 It is far from clear that the monetary benefits will be adequate.

The costs of maintaining an *ex situ* germplasm collection were estimated in 2002 values to be at between US$1.50 andUS$11.98 per accession per year, or the present value of conservation costs in perpetuity at between US$14.66 and US$89.35.43 So, for example, an endowment of between US$100 million (at a 6 per cent rate of investment return) and US$325 (at a 2 per cent rate of investment return) would be necessary to maintain the present approximately 660,000 germplasm accessions in the *ex situ* collections of the CGIAR system of IARCs.44 The costs of *in situ* conservation are a lot less certain and are likely to be considerably higher.45 Perhaps the most significant effect of the MTA will be to set a base price for accessible PGRFA and like materials at "one point--one percent (1.1 %) of the Sales of the Product or Products less thirty percent (30%)" (cl.6.7 and Annex 2).46 What this amount will be in dollar terms and how the formula was determined to be appropriate are lost in the mists of negotiations and discussions,47 although existing commercial practice rather than the real costs of conservation appear to have ***253** been the relevant considerations.48 If these monetary benefits are inadequate, other means will be required to address the balancing of private and social values by the contracting parties, otherwise a long-term decline in the conservation and sustainable use of PGRFA can be ex-

pected.

The apparent effects of a low price for accessible PGRFA and like materials may be ameliorated by the MTA's exhaustion provisions. The MTA appears to envision that where its terms and conditions do apply, they will continue to apply (through a “new” MTA) to any transfers, including transfers of PGRFA derived from the originally accessed PGRFA where the use continues to be for “research, breeding and training for food and agriculture” (see cll.6.4, 6.5 and 6.6). However, as soon as the originally accessed PGRFA, or any PGRFA derived from the originally accessed PGRFA, is commercialised (sold as a commodity on the open market for monetary consideration), the benefit-sharing obligations will crystallise (see cll.6.7 and 6.8). The effect of these MTA terms and conditions is to maintain the benefit-sharing arrangements through each development of the originally accessed material and ensure that benefit-sharing according to the MTA applies to any commercialisation of PGRFA in any way derived from the Multilateral System material. This is potentially a considerable source of monetary benefits, particularly with the increasing global sharing of PGRFA.49 However, the effect of these benefit-sharing arrangements in the MTA depends on the ongoing effect of those obligations through transfers and avoiding exhaustion. The Governing Body should provide some guidance about the meaning of the terms “under the management and control of the Contracting Parties” and “in the public domain” (art.11.2) in the context of addressing exhaustion.

If the MTA is successful in delivering adequate monetary value, the question remains whether the Treaty is configured in a way that will deliver that value to the conservers. The benefit-sharing arrangements presently require amounts paid under an MTA to be paid to a financial mechanism established by the Governing Body (cll.6.7 and 6.8 and Annex 2 and arts 13.2d and 18.4e) that the Treaty requires “for receiving and utilizing financial resources that will accrue to it for purposes of implementing this Treaty” (art.19.3f). Other amounts may also be voluntarily paid to the financial mechanism established by the Governing Body (arts 13.6 and 18.4f). These “financial resources” are then to be expended according to a “funding strategy” (art.18.1) that is “to enhance the availability, transparency, efficiency and effectiveness of the provision of financial resources to implement activities under this Treaty” (art.18.2).50 The Governing Body is responsible for expending these funds under its control to implement the Treaty (art.18.1). Perhaps in recognition that the benefit-sharing arrangements may not be adequate, the Treaty also provides for 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” (art.18.4d),

and various other voluntary contributions (see arts 13.6, 18.4c and f).

A significant limitation of the Governing Body in implementing its “funding strategy” is that:

• “benefits arising from the use of PGRFA that are shared under the Multilateral System should flow primarily, directly and indirectly, to farmers in all countries, especially in developing countries, and countries with economies in transition, who conserve and sustainably utilize PGRFA” (art.13.3);

(Cite as:)

• "specific assistance … for the conservation of [PGRFA] in developing countries, and countries with economies in transition whose contribution to the diversity of plant genetic resources for food and agriculture in the Multilateral System is significant and/or which have special needs" (art.13.4); and

• "the ability to fully implement the *Global Plan of Action*, in particular of developing countries and countries with economies in transition, will depend largely upon the effective implementation of [benefit-sharing the Multilateral System] and of the funding strategy" (art.13.5).

The challenge for the Governing Body in developing and implementing a "funding strategy" will be to ensure that the private values necessary to promote the conservation and sustainable use of PGRFA are addressed. Significantly, these might be expected to include activities addressed in the Global Plan of Action that specifically deal with "priority" conservation activities: *in situ* conservation and development and *ex situ* conservation.51 Whether this will be achieved remains to be established.52

The final question is whether intellectual property as a central element of the benefit-sharing arrangements can deliver adequate monetary benefits. The MTA attempts to take advantage of intellectual property by seeking to appropriate some of the benefits generated from ***254** commercialising a product that incorporates some of the material accessed from the Multilateral System (cll.6.7 and 6.8), while limiting its potential adverse effects on "facilitated access" to material in the Multilateral System (cl.6.2). This creates a quandary--too much intellectual property may limit the usefulness of the Multilateral System and too little intellectual property may deliver inadequate benefits. Whether adequate private values are being delivered--whether commercialisation (including the intellectual property contribution) is actually delivering benefits and that they are being shared in a way that promotes conservation and sustainable use is presently unclear and needs to be monitored carefully by the Governing Body. As the analysis in this article shows, intellectual property has significant potential to either enhance or undermine the Treaty's and MTA's objectives.

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1. See also Conference of the Parties to the Convention on Biological Diversity, "Report of the Second Meeting of the Conference of the Parties to the Convention on Biological Diversity" (1995) UNEP/CBD/COP/2/19, p.68.
2. Following agreement with Consultative Group on International Agricultural Research (CGIAR) and a number of other international institutions, these *ex situ* collections will now form part of the Multilateral System; see Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture, "Report of the First Session of the Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture" (2006) IT/GB-1/06/Report, pp.10-11; see also Governing Body of the International Treaty on Plant Genetic Resources for Food and Agriculture (Interim Committee), "Draft Agreements Between the Governing Body and the IARCs of the CGIAR, and Other Relevant International Institutions" (2006) IT/GB-1/06/9.
3. See IT/GB-1/06/Report, pp.5-7; for an overview of the development of the International Treaty on Plant Genetic Resources for Food and Agriculture ("the Treaty") see, e.g. G.

(Cite as:)

Rose, “International Law of Sustainable Agriculture in the 21st Century: The International Treaty on Plant Genetic Resources for Food and Agriculture” (2003) 15 *Georgetown International Environmental Law Review* 583.
4. Although the Treaty does provide: “Contracting Parties shall ensure that an opportunity to seek recourse is available, consistent with applicable jurisdictional requirements, under their legal systems, in case of contractual disputes arising under such MTAs, recognizing that obligations arising under such MTAs rest exclusively with the parties to those MTAs” (art.12.5).
5. International Institute for the Unification of Private Law, UNIDROIT Principles of International Commercial Contracts 2004 art.4.1.
6. See an analysis of these terms based on the negotiating materials: C. Lawson, “Patents and Plant Breeder's Rights over Plant Genetic Resources for Food and Agriculture” (2004) 32 *Federal Law Review* 107, 113 and 116.
7. See an analysis of this contention: C. Lawson, “Patents and the CGIAR System of International Agricultural Research Centers' Germplasm Collections under the International Treaty on Plant Genetic Resources for Food and Agriculture” (2004) 55 *Australian Journal of Agricultural Research* 307, 309-312.
8. Council of the Food and Agriculture Organization of the United Nations, International Undertaking on Plant Genetic Resources Information Pursuant to Rule XXI.1 of the General Rules of the Organization (2001) CL 121/5-Sup.1, p.7.
9. See, e.g. C. Lawson, “Depositing Seeds to Comply with the Patents Act 1990 (Cth)--The Adequacy of Definition and Description?” (2004) 23 *University of Tasmania Law Review* 68.
10. See K. Painting, M. Perry, R. Denning and G. Ayad, *Guidebook for Genetic Resources Documentation* (IPGRI, Rome, 1995), pp.60-61.
11. Painting et al., pp.37-50.
12. [1995] A.T.S. 38.
13. [2005] A.T.S. 1.
14. For an overview of these arrangements, see C. Lawson and C. Pickering, “‘TRIPS-Plus’ Patent Privileges--An Intellectual Property ‘Cargo Cult’ in Australia” (2004) 22 *Prometheus* 355, 357-361.
15. Lawson, “Patents and the CGIAR System” (2004), pp.310-312.
16. Notably, the MTA does expressly require intellectual property assignments to include the MTAs benefit-sharing obligations (cl.6.10), suggesting that if the intention was to avoid exhaustion, then the MTA would have required its other terms and conditions to persist in future agreements.
17. This refers to making available all non-confidential information that results from research and development carried out on the material to the Multilateral System, through the information system provided for in the Treaty: “a global information system to facilitate the exchange of information, based on existing information systems, on scientific, technical and environmental matters related to plant genetic resources for food and agriculture” (art.17.1).
18. Notably, the Conference of the Parties to the Convention on Biological Diversity has already decided to establish and maintain co-operation with the Treaty's Governing Body: Conference of Parties to the Convention on Biological Diversity, “Report of the Sixth Meeting of the Conference of the Parties to the Convention on Biological Diversity” (2002) UNEP/CBD/COP/6/20, p.92.
19. Lawson, “Patents and the CGIAR System” (2004), p.117.
20. Department of the Environment, Sport and Territories, *National Strategy for the Con-*

(Cite as:)

servation of Australia's Biological Diversity (Department of the Environment, Sport and Territories, Canberra, 1996), p.iii.
21. Department of the Environment, Sport and Territories, p.5.
22. Commonwealth of Australia, *Australian Biotechnology: A National Strategy* (Biotechnology Australia, Canberra, 2000), p.7; Minister for the Environment and Heritage, Environment Protection and Biodiversity Conservation Amendment Regulations 2005 (No 2) Explanatory Statement, Select Legislative Instrument No.2512 (Attorney-General's Department, Canberra, 2005); see also House of Representatives Standing Committee on Primary Industries and Regional Services, *Bioprospecting: Discoveries Changing the Future, Inquiry into Development of High Technology Industries in Regional Australia Based on Bioprospecting* (Senate Printing, Canberra, 2001), pp.51-52; and C. Lawson, "Regulating Access to Biological Resources: The Market Failure for Biodiversity Conservation" (2006) 24 *Law in Context* 137, 146-149.
23. Department of the Environment and Heritage, *Nationally Consistent Approach for Access to and the Utilization of Australia's Native Genetic and Biochemical Resources* (Department of the Environment and Heritage, Canberra, 2002), pp.2-3; see also Biotechnology Liaison Committee, *A Statement of Australia's Biotechnology Capabilities: A National Approach to Biotechnology in Australia* (2005), p.53.
24. See, e.g. Environment Australia, *National Objectives and Targets for Biodiversity Conservation 2001-2005* (Environment Australia, Canberra, 2001); see generally Convention on Biological Diversity, "Third National Report (Australia)" (2005) Au/NR/03.
25. Lawson, "Regulating Access to Biological Resources" (2006), pp.146-151; see also C. Lawson, "Exploiting Genetic Resources in Queensland under the Biodiscovery Act 2004 (Qld): Patents and Biological Diversity Conservation, Destruction and Decline" (2006) 28 *European Intellectual Property Review* 418; and Department of the Environment and Heritage, *Genetic Resources Management in Commonwealth Areas: Sustainable Access ĐĐ Shared Benefits* (Department of the Environment and Heritage, Canberra, 2005), p.9.
26. See CL 121/5-Sup.1, p.6; see also Lawson, "Patents and Plant Breeder's Rights" (2004), pp.117-118; C. Gerstetter, B. Görlach, K. Neumann and D. Schaffrin, "The International Treaty on Plant Genetic Resources for Food and Agriculture within the Current Legal Regime Complex on Plant Genetic Resources" (2007) 10 *The Journal of World Intellectual Property* 259.
27. Council for Trade-Related Aspects of Intellectual Property Rights, The Relationship between the TRIPS Agreement and the Convention on Biological Diversity: Summary of Issues Raised and Points Made (2006) IP/C/W/368/Rev.1, pp.3-9.
28. See, e.g. Lawson and Pickering, "'TRIPS-Plus' Patent Privileges" (2004); see also C. Lawson, "Implementing an Objective of the Convention on Biological Diversity--Intellectual Property, Access to Genetic Resources and Benefit Sharing in Australia" (2005) 22 *Environmental and Planning Law Journal* 130.
29. See, e.g. the jurisdiction and application problems faced by access and benefit-sharing arrangements under the Convention on Biological Diversity remain disputed and contested: Ad Hoc Working Group on Access and Benefit-sharing, "Report of the Ad Hoc Working Group on Access and Benefit-sharing on the Work of its Fourth Meeting" (2006) UNEP/CBD/WGABS/4/L.1, pp.26-27. See also C. Chiarolla, "Plant Patenting, Benefit Sharing and the Law Applicable to the Food and Agriculture Organisation Standard Material Transfer Agreement" (2008) 11 *The Journal of World Intellectual Property* 1.
30. IT/GB-1/06/Report, pp.7-8.
31. See Open-ended Working Group on the Rules of Procedure and the Financial Rules of the Governing Body, Compliance, and the Funding Strategy, Draft Procedures and Opera-

tional Mechanisms to Promote Compliance and to Address Issues of Non-Compliance (2006) IT/GB-1/06/7.
32. IT/GB-1/06/Report, App.I.
33. IT/GB-1/06/Report, App.I, p.1.
34. IT/GB-1/06/Report, App.I, p.2.
35. See, e.g. IT/GB-1/06/Report, App.I, pp.3-4.
36. See IT/GB-1/06/Report, App.I, pp.4-5.
37. Noting that they stated at the time: "The Contracting Parties to the Treaty shall take appropriate measures to ensure that the parties to the [MTA] will meet their obligations under that [MTA]": IT/GB-1/06/Report, App.H.
38. For an overview of these concerns, see, e.g. T. Swanson, D. Pearce and R. Cervigni, "The Appropriation of the Benefits of Plant Genetic Resources for Agriculture: An Economic Analysis of the Alternative Mechanisms for Biodiversity Conservation", Background Study Paper No.1 (1994).
39. These are well-documented social returns: see, e.g. J. Alston, C. Chan-Kang, M. Marra, P. Pardey and T.J. Wyatt, "A Meta-Analysis of Rates of Return to Agricultural R&D: Ex Pede Herculem?", International Food Policy Research Institute Research Report 113 (2000); see also J. Brennan and K. Quade, "Evolving Usage of Materials from CIMMYT in Developing Australian Wheat Varieties" (2006) 57 *Australian Journal of Agricultural Research* 947, 950-952; K. Day Rubenstein, M. Smale and M. Widrlechner, "Demand for Genetic Resources and the US National Plant Germplasm System" (2006) 46 *Crop Science* 1021, 1021-1022; A. Zohrabian, G. Traxler, S. Caudill and M. Smale, "Valuing Pre-commercial Genetic Resources: A Maximum Entropy Approach" (2003) 85 *American Journal of Agricultural Economics* 429, 434-435; and G. Frisvold, J. Sullivan and A. Ranesses, "Genetic Improvements in Major US Crops: The Size and Distribution of Benefits" (2003) 28 *Agricultural Economics* 109, 109-110 and 113-117 (and the references therein).
40. The International Agricultural Research Centres (IARCs) of the Consultative Group on International Agricultural Research (CGIAR) illustrate the concern: see, e.g. J. Anderson, "Selected Policy Issues in International Agricultural Research: On Striving for International Public Goods in an Era of Donor Fatigue" (1998) 26 *World Development* 1149 (*ex situ*); S. Brush, E. Taylor and M. Bellon, "Biological Diversity and Technology Adoption in Andean Potato Agriculture" (1992) 39 *Journal of Development Economics* 365 (*in situ*).
41. See, e.g. Rubenstein et al., "Demand for Genetic Resources" (2006), pp.1027-1029 (*ex situ*); and C. Fowler and T. Hodgkin, "Plant Genetic Resources for Food and Agriculture: Assessing global availability" (2004) 29 *Annual Review of Environment and Resources* 143, 163-166 (*in situ*).
42. See, e.g. S. Brush, "Providing Farmers' Rights Through In Situ Conservation of Crop Genetic Resources", Background Study Paper No.3 (1994), pp.13-20.
43. B. Koo, P. Pardey and B.Wright, "The Price of Conserving Agricultural Biodiversity" (2003) 21 *Nature Biotechnology* 126, 127.
44. Koo et al., pp.127-128.
45. See generally M. Smale (ed.), *Valuing Crop Biodiversity: On-farm Genetic Resources and Economic Change* (CABI Publishing, Wallingford, 2006) and the chapters therein; for an overview of the kinds of programmes, see, e.g. Conference of the Parties to the Convention on Biological Diversity, "Report of the Eighth Meeting of the Parties to the Convention on Biological Diversity" (2006) UNEP/CBD/COP/8/31, pp.280-293; and Commission on Genetic Resources for Food and Agriculture, "Report from FAO on its Policies, Programmes and Activities on Agricultural Biological Diversity: (1) Sectoral Matters" (2004)

CGRFA-10/04/10.1, pp.1-4 (including the overall costs of programmes).
46. Notably, the Governing Body may change this amount, the amount having been determined according to the requirement that "[t]he Governing Body shall, at its first meeting, determine the level, form and manner of the payment, in line with commercial practice" (art.13.2d).
47. IT/GB-1/06/Report, pp.5-7 and App.H; Commission on Genetic Resources for Food and Agriculture Acting as Interim Committee of the International Treaty on Plant Genetic Resources for Food and Agriculture, "Report of the Second Meeting of the Contact Group for the Drafting of the Standard Material Transfer Agreement" (2006) CGRFA/IC/CG-SMTA-2/06/Report; and Commission on Genetic Resources for Food and Agriculture Acting as Interim Committee of the International Treaty on Plant Genetic Resources for Food and Agriculture, "Report of the First Meeting of the Contact Group for the drafting of the Standard Material Transfer Agreement" (2005) CGRFA/IC/CG-SMTA-1/05/Report.
48. See First Meeting of the Expert Group on the Terms of the Standard Material Transfer Agreement, "Report on the Outcome of the Expert Group on the Terms of the Standard Material Transfer Agreement" (2004) CGRFA/IC/MTA-1/04/Rep, pp.6-7; see also W. Smolders, "Commercial Practice in the Use of Plant Genetic Resources for Food and Agriculture", Background Study Paper No.27 (2005).
49. See, e.g. M. Smale and K. Day-Rubenstein, "The Demand for Crop Genetic Resources: International Use of the US National Plant Germplasm System" (2002) 30 *World Development* 1639; and Brennan and Quade, "Evolving Usage of Materials from CIMMYT" (2006).
50. See also B. Visser and N. Louwaars, "Policy and Criteria for the Funding Strategy for the Implementation of the International Treaty on Plant Genetic Resources for Food and Agriculture", Background Study Paper No.31 (2006), pp.4-6.
51. Fourth International Technical Conference on Plant Genetic Resources, "Global Plan for the Conservation and Sustainable Utilization of Plant Genetic Resources for Food and Agriculture" (1996), pp.17-26 (*in situ*) and 27-35 (*ex situ*).
52. See Third Meeting of the Ad Hoc Advisory Committee on the Funding Strategy, "Report of the Third Meeting of the Ad Hoc Advisory Committee on the Funding Strategy" (2008) IT/ACFS-3/08/Report; and First Meeting of the Capacity Building Coordination Mechanism for the Implementation of the International Treaty, "Final Report of First Meeting of the Coordination Mechanism for Capacity Building for the Implementation of the International Treaty" (2008) IT/CBCM-1/08/Report.

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