A REVIEW OF ACCESS AND BENEFIT-SHARING FOR BIOLOGICAL CONTROL: WHAT DOES IT MEAN FOR NEW ZEALAND?

B.I.P. BARRATT

AgResearch Invermay, PB 50034, Mosgiel, New Zealand

Corresponding author: barbara.barratt@agresearch.co.nz

ABSTRACT

The Convention on Biological Diversity promotes equitable and respectful sharing of access to, and benefits from genetic resources. Parties to the convention have agreed to negotiate and develop an Access and Benefit-Sharing (ABS) regime to take effect in 2010. Currently some countries have restricted access to their biological resources. To consider issues pertaining to biological control, the Global IOBC (International Organisation for Biological Control of Noxious Animals and Plants) has established a Commission on Biological Control and Access and Benefit-Sharing. The FAO (Food and Agriculture Organisation) Commission on Genetic Resources for Food and Agriculture (GRFA) has invited the IOBC Commission to prepare a report on the case for biological control agents. The global exchange of biological control agents is considered critical to food security and sustainable agriculture, and reaching a consensus on this issue is a high priority. The process for this and the importance of protecting New Zealand's interests in biological control is discussed in this paper. **Keywords:** Access and Benefit-Sharing, Convention on Biological Diversity, genetic resources, biological control agents, policy.

INTRODUCTION

One of the objectives of the international Convention on Biological Diversity (CBD) is "the fair and equitable sharing of the benefits arising out of utilisation of genetic resources" (Convention on Biological Diversity 1993). In 2004, the Conference of the Parties (COP) to the CBD established a subsidiary body, the Working Group on Access and Benefit-Sharing (ABSWG), to negotiate an international regime for ABS to be completed by 2010. As a bench-marking exercise, a report funded by the UN Environment programme was produced that provides an overview of the *status quo*, a series of case studies, and a report on the commercial use of biodiversity (Secretariat of the Convention on Biological Diversity 2008). The ABSWG focuses on issues such as arranging 'prior informed consent' (PIC) to access genetic resources with 'mutually agreed terms' (MAT) between donor and user countries, and sharing of benefits from the use of resources. It is now internationally recognised that biological resources belong to the states on whose territory they are found, and agreements governing the access to these resources and the sharing of the benefits arising from them must be established between the parties involved. In 2002 the COP adopted the 'Bonn Guidelines on Access to Genetic Resources and Fair and Equitable Sharing of Benefits Arising out of their Utilization' (Secretariat of the Convention on Biological Diversity 2002). PIC is now required for access to genetic resources, and the 'competent national authority' of the source country must be informed and must provide consent as a prerequisite to research.

Although the CBD was adopted in 1992, realisation of the implications of ABS to science is relatively recent. The Swiss Academy of Science published a manual for the scientific community to raise awareness and to develop best practises for research on genetic resources to be accessed from other countries (Biber-Klemm & Martinez 2006).

Recently, an article in 'Science' has drawn attention of scientists to the possibility that their research could be 'stifled' by requirements of ABS (Jinnah & Jungcurt 2009). In this article examples were given of imprisonment of a researcher for working without appropriate permits, and the increasing burden of access regulations precluding research collaborations in fields such as taxonomy.

A National Focal Point (NFP) has been identified in each member country and for New Zealand this is the Ministry of Foreign Affairs and Trade (MFAT). The Ministry of Economic Development (MED) is also representing New Zealand in the international negotiations on ABS. At this stage international negotiations are very broad, and these departments have not considered biological control specifically in their deliberations on ABS and implications for New Zealand. In consultation with these departments it seems that the issue of bioprospecting led by MED in partnership with MFAT is a central issue, and in 2007 a discussion document 'Bioprospecting: Harnessing Benefits for New Zealand' was released (Ministry of Economic Development 2007). MFAT also has an interest in how ABS will affect New Zealand access to genetic resources overseas.

The objective of this paper is to raise awareness in New Zealand about ABS, the implications for biological control, and the activities of the IOBC Commission on Biological Control and Access and Benefit-Sharing. The importance to NZ of recommending policy that will enhance and not hinder the practice of biological control will be discussed.

BIOLOGICAL CONTROL PRACTICE AND ABS

Biological control using natural enemies is a vital component of integrated pest management. Traditional practise for classical biological control has usually involved exploration of the country of origin of the pest, identification of one or more potential natural enemies of the target pest, and then field collection. Sometimes rearing of biological control agents for efficacy and biosafety assessment is carried out in the source country before shipment of the most promising agent(s) back to the laboratory in the receiving country for further biosafety testing as required by regulatory agencies. The biological control agent is then released subject to regulatory approval. For New Zealand this is the responsibility of ERMA New Zealand under the Hazardous Substances and New Organisms Act 1996, and MAF Biosecurity New Zealand under the Biosecurity Act 1993.

When biological control agents are imported from overseas, it has generally been regarded as good practice to work through the appropriate agencies and/or collaborators in the source country so that they are aware of the exploratory research and collection and shipment of live organisms. In most cases this has been carried out with the goodwill of the source country, and with the expectation that they will be able to expedite their own biocontrol programmes in a reciprocal manner. There are also many cases where biological control agents have been accessed from countries who have earlier imported the biological control agent itself from the country of origin of the agent. An example for New Zealand is *Microctonus aethiopoides* Loan, which was initially imported to Australia in 1977, and then New Zealand obtained the biological control agent from Australia in 1982. This relatively collegial and minimally bureaucratic scenario has recently been threatened by the decisions of some countries that have introduced tight regulation on access to, and export of native species under the PIC provisions now prescribed by the CBD.

Classical biological control is not an activity that generates significant revenue for the receiving country in comparison with, for example, bioprospecting for genetic resources with pharmaceutical properties. The benefits are usually 'public good' with benefits to growers often being difficult to identify, and include significant environmental and human health benefits. Augmentative biological control, where commercially produced biological control agents are used for biological control in glasshouses or protected environments is seen as a situation where a financial benefit does accrue from biological control agents accessed from other countries. Estimates indicate that even this is a minor industry in

global terms, with an annual profit of less than €10m per annum (K. Bolkmans, Koppert, The Netherlands, pers. comm.). It may be realistic to expect commercial producers of biological control agents to negotiate case-by-case benefit-sharing contracts with source countries, for example by providing knowledge or scientific training.

IOBC COMMISSION ON ABS

The International Organisation for Biological Control of Noxious Animals and Plants (IOBC) is a professional organisation established in 1956 to promote and foster biological control practice and to provide a forum for dissemination of information and networking of researchers. At the general assembly of IOBC in July 2008, Karel Bolkmans, head of research of a commercial producer of biological control agents in The Netherlands, raised the issue that biological control will be affected by, and subject to the ABS regime. He gave examples of difficulties already encountered in obtaining export permits for biological control agents from some countries.

The IOBC has now established a Commission on Biological Control and ABS. The terms of reference for the Commission can be found at IOBC (2008). The IOBC Commission was supported by the FAO Commission on Genetic Resources for Food and Agriculture to prepare a report to FAO on biological control in the ABS regime. The report, written in collaboration with CABI, summarises past and current practices in biological control, the benefits of biological control, and makes recommendations on how biological control should be handled within the ABS regime. In brief, the report recommends that ABS policy should recognise the specific features of biological control and in so doing governments should build on the current multilateral practice of exchange of biological control agents. Countries are encouraged to establish single points of contact to facilitate all aspects of compliance with the ABS regime. Best practice for ABS in relation to biological control should be documented and disseminated. To allow transparency, database information on biological control agents, source and target countries should be developed and freely available. In case of humanitarian or emergency situations there should be provision for governments to 'fast-track' action via FAO.

IMPLICATIONS FOR NEW ZEALAND

Biological control has, and will continue to be an important tool for pest management in New Zealand. New Zealand has generally been the receiver of biological control agents rather than a source country, because there are few instances of New Zealand organisms becoming pests overseas. However, New Zealand has supplied 'already-imported' biological control agents to other countries, and been involved in many programmes that benefit a number of other countries as well as New Zealand. For example, biological control of gorse has involved several countries, and New Zealand researchers have been proactive in collaborative programmes for the benefit of all affected countries (Hill et al. 2007).

It is important that New Zealand is aware of the potential risks of an ABS regime that might limit or complicate our access to biological control agents from other countries in the future. There have been recent cases where bureaucratic obstacles have been difficult to overcome in order to pursue weed biological control programmes for New Zealand (S.V. Fowler, Landcare Research, pers. comm.). Researchers need to be very aware of the need for compliance with the current ABS regulations of the country from which they would like to access potential biological control agents, and the need to arrange PIC and negotiate contracts with MAT as prescribed by CBD.

The IOBC Commission is making urgent and strident efforts to improve the situation for biological control in the future when the ABS regime reaches agreement in 2010. As the situation stands at present, biological control would require cost-benefit sharing mechanisms to be developed for each biological control initiative. This would undoubtedly stifle the practice of biological control, not only in New Zealand but internationally. Clearly support for the IOBC Commission's report and future activities on behalf of the biological control community are very important to New Zealand.

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Once the FAO has accepted the report from the IOBC Commission, it will be incorporated into the FAO report on 'The use and exchange of invertebrates relevant for food and agriculture'. The next meeting to discuss this will take place in October 2009 in Rome, where members of the Executive Committee of the Global IOBC will present the case for biological control. The report will be used to inform policy and will be published as part of a series of background papers for CBD policy makers.

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