

The Final Frontier?

New Zealand engagement with the European Union in the
field of research, science and technology

A thesis

submitted in fulfilment of the

requirements for the

Degree of Master of Arts in European Union Studies

at the

University of Canterbury

by

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August 2008

Acknowledgements

I have many people to thank concerning the production of this “massive missive”. At the business-end of things, I need to say a big “thank you” to the Director of the National Centre for Research on Europe (NCRE), Professor Martin Holland. I am incredibly grateful for all the academic guidance and support that you have given me over the last couple of years. Completing this thesis, which was so dependent on accessing primary sources, would not have been possible without the help I acquired from your extensive list of personal contacts! A thank you to Natalia Chaban is also required, for all your help with the methodological side of things that I initially found so difficult to get my head around.

To the NCRE “superwomen”, Rebecca Morgan and Sarah Coleman: many, many thanks for all your help concerning the “behind the scenes” aspects of this thesis. Your personal support and friendship has also made my time as an NCRE MA student much more enjoyable.

This thesis could also not have been written without help from the extensive list of people who took the time out of their own busy lives to help me. Many thanks to Melae Langbein, former New Zealand Science Counsellor to the EU, for all the information you’ve imparted upon me over the last two years. Thank you also for all the useful contacts that you put me in touch with and, on a more trivial side, thank you for introducing me to Waterzooi during my time in Brussels!

The Ministry of Research, Science and Technology’s International Linkages advisor, Rick Petersen, is also owed a debt of gratitude concerning all the advice he has given me in aiding the construction of this thesis. Thank you for your prompt replies and the many useful documents that were delivered to my e-mail address!

Many thanks also to all the key-informants that agreed to be interviewed during the research process of this thesis. Melae Langbein and Rick Petersen, again, as well as Lynne Hunter, Jean Francois Desvignes-Hicks, Paola de Rose, Michaela Bauer, Jill Stanley, Val Orchard, Christine Cheyne, Annick Masselot, Ross Atkinson, Tony Conner, Michael Lay-Yee, Claus Bruening, Indridi Benediktsson and Carole Glynn. I am very grateful for your willingness to participate in my research and the content will be all the better for your involvement.

The completion of such a body of work was also not achieved without the valuable personal support I received from family, friends and colleagues. Many thanks to my parents, Helen Plesner and Paul Deerness, for all your support and encouragement. Mum: a big thank you for the personal contribution you made to the thesis in the proof-reading department. Dad: Mum wouldn’t have been able to proof-read my thesis if she’d had to navigate how to use your computer on her own! Dan: thank you for your patience, support and encouragement – even when thesis-related-stress got the better of me! To Brittany and Kees, my partners in crime... your support and welcome distractions over the course of my MA made the process a much more enjoyable one. Thank you for your own contributions to my proof-reading effort also! Last, but not least, I owe a thank you to my Countdown Church Corner Bakery Manager, Ivan Campbell, for putting up with this part-time employee who kept requiring time off to do stuff at Uni...! To my other work colleagues and “BFFs”, Anne and Jac, thank you for your friendship, encouragement, support and providing me with hours of laughs when I needed it.

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List of Acronyms

AAD	Alpha-1-antitrypsin deficiency
CAP	Common Agricultural Policy
CCFRA	Campden and Chorleywood Food Research Association
CEEC	Central and Eastern European Countries
CFSP	Common Foreign and Security Policy
CoP	Conference of Parties
CORDIS	Community Research and Development Information Service
COST	Cooperation in Science and Technology
CRC	Cooperative Research Centre
CRI	Crown Research Institute
CROPPRO	Development of integrated farming approaches for sustainable crop production in environmentally-constrained systems in the Pacific region
CSIRO	Commonwealth Scientific and Research Organisation
DEST	Australian Department of Education, Science and Training
DG	Directorate General
DISCUS	Developing Institutions and Social Capacity for Urban Sustainability
EC	European Community
ECSC	European Coal and Steel Community
EEC	European Economic Community
EESD	Energy, Environment and Sustainable Development
ELSA	Ethical, legal and social aspects of genomics
ERA	European Research Area
ERA-Can	European Research Area and Canada
ERA-Link	European Researchers Abroad
ERA-Net	Networking the European Research Area
ERA-SAGE	European Research Area on Society Aspects of Genomics
ESA	European Space Agency
ESDP	European Security and Defence Policy

List of Acronyms

ESPRIT	European Strategic Programme for Research and Development in Information Technology
ESR	Environmental Science and Research Limited
ESS	European Security Strategy
EU	European Union
EUFRI	European Fruit Research Institutes Network
Euratom	European Atomic Energy Community
EUREKA	European Research Coordination Agency
EuroPREVALL	A European Integrated Research Project that focuses on the prevalence, costs and basis of food allergy across Europe
FAFB	Food-Agriculture-Fisheries-Biotechnology
FAST	Forecasting and Assessment in Science and Technology
FEAST	Forum for European-Australian Science and Technology cooperation
FOOD-FRENZ	Food Research in Europe and New Zealand
FRST	Foundation for Research, Science and Technology
FP1-7	First to Seventh EU Framework Programmes
FRENZ	Facilitating Research cooperation between Europe and New Zealand
GDP	Gross Domestic Product
GO-GLOBAL	Global platform on emerging risks and the food and feed chain
GPRSD	Grants for Private Sector Research and Development
HortResearch	Horticulture and Food Research Institute of New Zealand Limited
ICPC	International Cooperation Partner Countries
IIOF	International Investment Opportunities Fund
INCO	Specific International Scientific Cooperation Activities
IRSES	International Research Science and Exchange Schemes
ISAFRUIT	A European Integrated Research Project that focuses on all aspects of fruit
ISAT	International Science and Technology linkages fund
JET	Joint European Torus
JRC	Joint Research Centre
JSTCC	Joint Science and Technology Cooperation Committee
LTCCP	Long Term Council Community Plan

MFAT	New Zealand Ministry of Foreign Affairs and Trade
MoRST	New Zealand Ministry of Research, Science and Technology
NCP	National Contact Point
NHMRC	Australian National Health and Medical Research Council
NIS	New Independent States of the former Soviet Union
NORFACE	New Opportunities for Research Funding Agency Cooperation in Europe
OECD	Organisation for Economic Cooperation and Development
PLUS	Participation, Leadership and Urban Sustainability
QoL	Quality of Life and Management of Living Resources
RACE	Research and Development in Advanced Communications Technologies for Europe
R&D	Research and Development
RECON	Reconstituting Democracy in Europe
RS&T	Research, Science and Technology
RSNZ	Royal Society of New Zealand
RTD	Research and Technology Development
SEA	Single European Act
SICA	Specific International Cooperation Actions
SME	Small and Medium Enterprise
SSA	Specific Support Action
SSHRC	Canadian Social Sciences and Humanities Research Council
STC	Science and Technological Cooperation
TechNZ	Technology New Zealand
TEU	Treaty on European Union
TIF	Technology in Industry Fellowships
UK	United Kingdom
UN	United Nations
US	United States of America

Abstract

This dissertation endeavours to address an identified gap in literature concerning the relationship between New Zealand and the European Union (EU) in the field of research, science and technology (RS&T). Examination of the partnership begins with the creation of the Science and Technological Cooperation (STC) Arrangement in 1991 and comes to a close in 2008, following the Arrangement's 'upgrade' to an STC Agreement on 16 July. During this time, the intensification of the EU's activities in RS&T is evident. The Seventh Framework Programme (FP7) currently constitutes the most internationalised Programme to date. Identifying the complementary nature of New Zealand and EU research priorities thus suggests that now, more than ever, the New Zealand research community stands to gain from participation within such an inclusive venture.

Aiming to assess the current status of New Zealand-EU research collaboration, the research identifies a number of recurring themes, both positive and negative, that influence the nature of the RS&T relationship. These themes focus on problems concerning visibility within the EU, geographical isolation from this important market, an absence of targeted domestic funding for New Zealand-EU RS&T collaboration and the unwieldy bureaucratic process of the Framework Programme. The research also determines the importance of both 'official' and 'informal' mechanisms' in combating the outlined collaborative bottlenecks. Taking these themes into account, the thesis ultimately looks to provide recommendations concerning the future of New Zealand-EU engagement in this field.

Chapter One

Introduction

1.1 Introduction

From its relatively humble beginnings as the European Coal and Steel Community (ECSC), the European Union (EU) has, since 1951, undergone a particularly dramatic transformation which has impacted upon all aspects of its configuration.¹ In 2008, structurally, economically, politically and in terms of its membership, priorities and international responsibilities, the EU looks very different from its former self. Currently encompassing 27 Member States and approximately 500 million citizens, the Union's activities have expanded exponentially from their original focus on pooling coal and steel resources as a means to prevent future continental conflict in the aftermath of World Wars I and II. The completion of the Single European Market in 1993, allowing the free movement of people, goods, services and capital within the EU's borders, cemented the Union's position as a powerful economic actor on the international stage.² Economic integration has, in turn, led to EU engagement in areas of political concern. The creation of the Common Foreign and Security Policy (CFSP) pillar within the Union's institutional structure and the launch of the European Security and Defence Policy (ESDP) are both concrete examples of the increasing level of political responsibility the EU is assuming at the international level.³

¹ Europa, "Treaty establishing the European Coal and Steel Community, ECSC Treaty", Summaries of legislation, 31 January 2005, http://europa.eu/scadplus/treaties/ecsc_en.htm (13 August 2008).

² European Commission, "Internal Market", 12 August 2008, http://ec.europa.eu/internal_market/index_en.htm (13 August 2008).

³ European Commission, "EU Security Policy and the Role of the European Commission", *External Relations*, December 2005, http://ec.europa.eu/external_relations/cfsp/esdp/index.htm (13 August 2008).

Most recently, the EU has been seeking to enhance its capacity as a competitive player in the field of research, science and technology (RS&T). The emerging ‘technology gap’ between European and American efforts in innovation became evident in the 1960s. During this period, the European Community (EC) recognised the value of a pan-European research capacity as a way of addressing this issue. However, it was not until the launch of the First Framework Programme (FP1) in 1984 that the EC began to forge a role for itself in this field. The EU Framework Programmes were created to encourage cross-border collaborative research in science and technology and, initially, this capacity was limited to developing an efficient level of internal European collaboration. However, the Framework Programmes have grown in size, expenditure and reputation since their inception, with the 2007 Seventh Framework Programme (FP7) constituting the largest, most ambitious and most international Framework Programme to date.

In 2008, the importance of undertaking RS&T concerning its potential application and relevance to states’ economic, health, social and environmental priorities has been internationally recognised. Moreover, globalisation’s erosion of national control over economic policy⁴ and the rising costs of research in general have, in turn, ensured increasing interdependence in the field of scientific research. States have thus become increasingly engaged in transforming their economies, in order to survive in the new knowledge-based society. New Zealand, too, has recognised the complementary relationship of RS&T and the economy and the current Labour-led government has made

⁴ John Peterson and Margaret Sharp, *Technology Policy in the European Union* (London: Macmillan Press, 1998), 17.

the transformation of the nation's economy a priority.⁵ Prime Minister Helen Clark specifically stated on 11 March 2008 that her government's overall plan was to "...transform the New Zealand economy into a smart, sustainable, high value supplier of the goods and services which global markets demand..."⁶

Given the nation's limited size, resources and population, the ability to engage internationally in RS&T is thus even more important for New Zealand's research community. However, international collaboration in this field is also subject to impediments created by limited resources. As a result, the Ministry of Research, Science and Technology (MoRST) must be extremely targeted concerning with whom it helps New Zealand researchers to cooperate.⁷ Taking this situation into account, the significance of the EU's Framework Programmes is thus demonstrated. Not only are many of FP7's thematic research priorities akin to those of New Zealand's, but the very nature of the internationalised Framework Programmes provides a unique and valuable collaborative forum for New Zealand researchers to engage in.⁸ It is this relationship that the dissertation shall explore.

1.2 Proposed aim and content

The primary goal of this thesis is to explore the nature of the New Zealand-EU relationship in the field of RS&T. The research initially determines the normative nature of EU actions in this specific field and, as a result, selects a constructivist theoretical

⁵ Helen Clark, "NZ Fast Forward", *The official website of the New Zealand Government*, 11 March 2008, <http://www.beehive.govt.nz/feature/nz+fast+forward>, (11 August 2008).

⁶ Helen Clark, "Launch of New Zealand Fast Forward", 11 March 2008, <http://www.scoop.co.nz/stories/PA0803/S00173.htm> (11 August 2008).

⁷ Rick Petersen, interview by author, Christchurch, 31 August 2007.

⁸ Genomics and biotechnology for health; information society technologies; nanotechnologies and nanosciences; food quality and safety; sustainable development, global change and ecosystems; and citizens and governance in a knowledge-based society.

framework within which to understand the unconventional role of the Union in its international RS&T engagement. In turn, it addresses the development of the EU's RS&T policy in order to both comprehend and outline the increasing importance the Union places upon social engagement, ideas, values and norms in all aspects of its external relations.

These factors therefore assist in explaining why, and how, the EU engages with non-associated third countries, such as New Zealand, in RS&T. More specifically, the issue selected for research is as follows:

In 1991, a Science and Technological Cooperation (STC) Arrangement was formed between the EU and New Zealand. However, in 2008, much scope exists to develop this relationship further. Is a future New Zealand-EU relationship in the field of RS&T both feasible and appropriate, and if so, how can New Zealand raise its profile in the EU to become a desired partner for joint research enterprises?

The dissertation thus examines past and present cooperative efforts undertaken by New Zealand and the EU, in an attempt to gauge the prospects for the future of their relationship in RS&T. In order to correctly deduce the current status of the New Zealand-EU RS&T partnership, the thesis also compares New Zealand's experience in engaging with the Union to that of Australia and Canada, in their capacity as third countries of similar heritage, possessing comparable research priorities.

A number of themes are identified throughout the research as characterising New Zealand-EU RS&T collaboration. The importance of maintaining a level of visibility within the EU, possessing personal research contacts, problems presented by geographical distance, a lack of finance, asynchronous funding systems and ongoing confusion concerning the eligibility of third countries as Framework Programme participants, are recurring themes throughout the thesis. The identification and analysis of

these themes assists in understanding past interactions between the two parties. These factors will also be taken into account in relation to the application of normative policy recommendations regarding future New Zealand-EU research engagement within the conclusion of the research.

Given that the Union constitutes New Zealand's second largest trading partner, much of the existing research concerning New Zealand-EU relations has been undertaken in the field of trade. Little has been produced concerning the parties' RS&T partnership outside the area of MoRST policy releases. In taking into account the growing relevance of RS&T to a wide range of policy priority areas for New Zealand, this thesis therefore examines research collaboration as an increasingly important component of the wider New Zealand-EU relationship. In doing so, the dissertation will aim to address the identified gap in research concerning this topic. The research attempts to produce a comprehensive illustration of current New Zealand-EU RS&T collaboration and thus provides a valuable resource for both policymakers and researchers looking to engage in EU Framework Programme projects.

1.3 Methodology

(i) Research design and methodology

The collation and analysis of qualitative data constitutes the dominant method of research employed within this study. The research design consists of establishing the EU and its current role in international RS&T within an appropriate theoretical framework, before moving on to profile how and why the Union has developed a capacity for itself in this

field. The thesis then looks to address how and why the Union collaborates with New Zealand and other non-associated third countries in practice. This will thus test the validity of the dissertation's selected theoretical explanations regarding the EU's internationalised RS&T activities. Finally, the collective findings from these individual analyses will allow for the adoption of a set of normative recommendations focusing on the future of the New Zealand-EU RS&T relationship.

Given the contemporary nature of the thesis topic, information gathered from primary sources accounts for a large amount of the collected qualitative data. However, secondary sources have been drawn upon concerning the initial development of the dissertation's theoretical framework and in assessing the historical development of the EU's RS&T policy. The data retrieval methods employed in accessing these primary and secondary sources are outlined below.

(ii) Data collection methods

The research process undertaken for this thesis has involved an analysis of EU treaties in which the development of an RS&T capacity for the Union is evident. Title VI of the Single European Act (SEA), which officially provided for an EC competency in facilitating pan-European research, is specifically referred to. Data collection has also involved an investigation of European Commission publications of relevance to the selected topic area, such as EU Framework Programme information releases. In accessing these resources, as well as selected secondary literature, the archival method of data retrieval has been employed to allow for document and policy analysis, which will, in turn, facilitate the examination of the policy framework within which the EU is expected

to operate. Moreover, the research process outlined above has also assisted in assessing the development of EU RS&T policy to 2008.

As mentioned above, information drawn from primary sources constitutes the majority of data used within this thesis. The contemporary nature of the research topic necessitated the identification of relevant key-informants with whom to conduct interviews. Key-informants were selected from both political elite groupings, such as representatives from the European Commission, MoRST and the New Zealand Ministry of Foreign Affairs (MFAT), as well as members of the New Zealand research community. Interviews were conducted in a semi-structured manner, consisting of a set of open-ended questions, so as to best attain reliable and comparative qualitative data. Where possible, data collected from the interviews was recorded, subsequently transcribed and delivered to the key-informants to review. Where informants were unwilling to be recorded, note-taking was employed instead.

(iii) Comparative study

The overall aim of the thesis involves the assessment of, and future predictions for, the New Zealand research community's engagement with the EU in RS&T. However, in order to assess New Zealand's standing as a non-associated third country research partner, it was necessary to investigate the experiences of other selected third countries in participating in EU-led RS&T initiatives. Canada and Australia were selected as appropriate models in terms of their similarities to New Zealand in relation to background, values, interests and priorities and their greater experience in engaging with the EU in collaborative research.

The majority of data collected was drawn from key-informant interviews with Canadian, Australian and European political elites and supplemented by consultation of relevant government, organisational and project documentation. Information collected from the websites and publications of the Delegation of the European Commission to Australia, the Australian Department of Education, Science and Training (DEST), the Forum for European-Australian Science and Technology cooperation (FEAST) and the European Research Area and Canada (ERA-Can), are examples of the sources that were consulted.

The study looked at the series of bottlenecks identified as affecting the New Zealand-EU RS&T relationship and determined whether these factors also posed problems for the selected third countries' participation in European RS&T ventures. Where comparable information was evident, the responses of selected Canadian and Australian political elites were examined as models for the development of a more effective collaborative relationship between New Zealand and the EU.

(iv) Multiple case-studies

Robert K. Yin identifies the benefit of employing a case-study research approach in terms of its capacity to account for a contemporary phenomenon based within a real life context.⁹ Case-studies can be utilised in the explanation of a particular situation and to provide a basis to apply solutions to the investigated situation. Moreover, Yin states that using a multiple-case design ensures a more complete analysis of the topic focus and will allow for the identification of commonalities between individual studies through the

⁹ Robert K. Yin, *Case Study Research – Design and Methods*, second edition (Thousand Oaks: Sage, 1994), 1.

replication of chosen research methods.¹⁰ In assessing the realities of the contemporary New Zealand-EU RS&T partnership in practice, a multiple case-study formula was adopted to investigate three examples of existing New Zealand-EU collaborative research projects. The selected units of analysis were the Sixth Framework Programme (FP6) projects ISAFRUIT (a European Integrated Research Project that focuses on all aspects of fruit), Food Research in Europe and New Zealand (FOOD-FRENZ) and the Fifth Framework Programme's (FP5) Participation, Leadership and Urban Sustainability (PLUS) venture.

The ISAFRUIT, FOOD-FRENZ and PLUS projects were chosen for investigation in order to employ a study of the concrete realities of engaging with the EU and, in turn, deduce what such initiatives can tell of New Zealand-EU RS&T collaboration as a whole. The specific projects were selected due to their capacity to display differing methods of research cooperation, as well as their varied topical foci, so as to illustrate the range of current opportunities available in New Zealand-EU collaborative RS&T. The findings collated from each study were drawn from both relevant project documentation and a selected theme of structured interview questions, which, whilst taking into account the variety presented by the selected projects, remained as consistent as possible so as to better identify commonalities between the cases.¹¹ Utilising available documentation allowed for the collation of general, fact-based findings concerning the specific cooperative ventures, whilst conducting interviews facilitated access to more detailed information and insights into the realities of New Zealand-EU scientific collaboration.

¹⁰ *Ibid*, 45.

¹¹ A sample interview plan is provided in Appendix IV.

(v) Validity concerns

As referred to above, this thesis draws upon a large amount of primary data sourced from key-informant interviews. Although this can be seen as a real strength of the research, this factor also contributes to the rise of some validity concerns regarding the collated data. Standard disadvantages in using interviews to conduct research apply, in that the retrieved data may have been subject to inaccuracies in the form of interviewer or interviewee bias, selective recall and omitting selected information on the part of the interviewee. Discrepancies in the transcription of interview data must also be mentioned, given that some key-informants did not wish to be recorded. Therefore, the subsequent transcription of notes may have been subject to a greater degree of inaccuracy than the recorded interviews.

With reference to the New Zealand-EU project case-studies, the limited number of participants in each project and the availability of these researchers for interviewing inhibited the capacity to collate a wider field of information. Additionally, given that a multiple case-study design was selected to investigate the cooperative examples, the lengthy process associated with this method thus necessarily limited the number of projects on which to focus.

Finally, the contemporary nature of the research topic must also be identified as a validity concern for this dissertation. The New Zealand-EU relationship in RS&T is a field which, since 2004, has been developing rather rapidly. Consequently, significant developments taking place close to the completion of this thesis. Indeed, on 16 July 2008, the New Zealand-EU STC Agreement was signed and it is expected that the ratification process will be completed before the end of the year. Additionally, some of the research

content refers to emerging initiatives and developments in the New Zealand-EU RS&T relationship, the impacts of which will not be possible to account for within this dissertation. As a result, these developments may prove to influence the nature of future New Zealand-EU research collaboration in a way in which the thesis cannot account for.

(vi) Delimitations

As mentioned above, the New Zealand-EU relationship in the field of RS&T now seems to be developing at a rather rapid pace. For the purposes of this thesis, the signature of the STC Agreement provides the ‘cut-off’ date for the topic content, after which developments between the two parties will not be addressed. In a similar vein, New Zealand researcher participation within FP7 is not addressed, as a collaborative project involving the two parties has yet to be launched within this instalment of the EU Framework Programmes. The examination of New Zealand researcher engagement is therefore focused upon FP5 and FP6, with FP7 being referred to concerning its relevance to the overall development of the EU’s RS&T policy and the growing internationalisation of scientific research.

The thesis specifically investigates the nature of New Zealand-EU RS&T engagement. Although references are made to bilateral relations with EU Member States, such as Britain, France and Germany, this occurs within the context of wider collaboration with the EU. Although the importance of these bilateral relations cannot be ignored, RS&T at the Member State level is not addressed in detail within this dissertation. The research, instead, looks to examine the EU’s overarching role as an RS&T actor and, with regard to the internationalised Framework Programmes, a unique

opportunity for researchers work in a highly collaborative environment. The justification for doing so lies in the observation that Member States are increasingly bringing their domestic research programmes into line with the themes of the Framework Programmes, thus signalling that the EU will increasingly inform the direction of the European research agenda in the future.¹²

In the following chapter, this thesis establishes RS&T as a policy tool within the wider remit of the EU's external relations. The research thus identifies RS&T as a further means to conduct foreign policy. However, the research is limited to the Union's ability to influence developments in international relations through its external relations capacity and thus does not address aspects pertaining to the "official" level of foreign policy provided for by the CFSP pillar.

1.4 Literature review

(i) Introduction

Due to the contemporary nature of the chosen research topic, there is an absence of literature pertaining to the specific New Zealand-EU relationship in RS&T. As outlined above, the majority of the resources drawn upon in the research process were primary in origin. Nevertheless, a wider body of secondary literature exists concerning the EU's capability in RS&T and its increasing importance as an actor in this field. Concerning the theoretical framework adopted for the purposes of this thesis, literature investigating the unconventional nature of the EU within alternative theories of international relations has also been consulted. The dissertation's literature review shall focus on works addressing

¹² Petersen, interview.

the overarching conceptual approach to the thesis, which is employed to the area of New Zealand-EU RS&T relations throughout the remainder of the thesis.

(ii) Theme one: literature focusing on the EU's unconventional role in international relations

Chapter two explores the constructivist framework that this thesis has been placed within, in order to understand the nature of the EU's international role in RS&T. Literature focusing on the potential applications of constructivist theory to EU studies constitutes a growing school of thought. Authors such as Ben Rosamond, Ian Manners and Helene Sjusren, for example, describe the EU as an unconventional actor in international politics. In doing so, they reject the use of traditional rationalist theories, such as realism, regarding their emphasis upon the concept of the 'state' in international relations: "...Rationalist theories might not be able to deal with the particularly complex and multiple ways in which the EU manifests itself in world politics..."¹³

Manners' publications concerning the potential 'normative' nature of the EU also depart from rationalist attempts to fit the Union within a traditional state-centred frame: "...the notion of a normative power Europe is located in... the desire to move beyond the debate over state-like features..."¹⁴ Moreover, Manners considers that the EU's alternative role in international relations predisposes it to act according to an identified set of core norms. As a normative actor, then, Manners also expects the EU to disseminate these norms through engagement with third countries within the international

¹³ Ben Rosamond, "Conceptualizing the EU model of governance in world politics", *European Foreign Affairs Review* 10, no. 4 (2005), 463-478.

¹⁴ Ian Manners and Richard Whitman, *The Foreign Policies of European Union Member States* (Manchester: Manchester University Press, 2000), as referenced in Ian Manners, "Normative Power Europe: A Contradiction in Terms?", *Journal of Common Market Studies* 40, no. 2 (2002), 239.

arena. The next section of the review outlines literature available to account for the variety of ways the EU, as an unconventional international actor, can interact with others.

(iii) Theme two: literature recognising the EU's external relations as a foreign policy tool

Taking into account the EU's unconventional role in international relations, political commentators draw attention to the Union's ability to pursue foreign policy goals outside the remit of traditional 'high politics'. Richard Whitman, for example, suggests that conventional realist theory excludes the influence of economic power in international relations. Realism is thus critiqued by proponents of alternative theories concerning its increasing marginalisation within the globalised world, which has increased the importance of economic actors and policies in international relations.¹⁵ Thus, Franck Petiteville argues that traditional state-centred theories are unable to recognise the political dimension of the EC's external relations.¹⁶

This body of literature is significant to the thesis topic as the EU's emerging RS&T capacity falls within the remit of EC external relations. To accurately assess the Union's international capability in this field, Brian White identifies the potential applications for alternative literature, which goes beyond the traditional focus on diplomatic and military tools.¹⁷ Works by Alice Landau, Whitman, Rosamond and Petiteville draw attention to the absence of EU military capabilities and engagement in

¹⁵ Richard G. Whitman, "The International Identity of the European Union: Instruments as Identity", in *Rethinking the European Union – Institutions, Interests and Identities*, eds. Alice Landau and Richard Whitman (Great Britain: Macmillan Press, 1997).

¹⁶ Franck Petiteville, "Exporting 'values'? EU external cooperation as a 'soft diplomacy'", in *Understanding the European Union's External Relations*, eds. Michèle Knodt and Sebastiaan Princen (London: Routledge, 2003), 127.

¹⁷ Brian White, "The European Challenge to Foreign Policy Analysis", *European Journal of International Relations* 5, no. 1 (1999), as referenced *ibid.*

conventional diplomacy. In doing so, they identify the possibility that the EU international engagement is conducted by alternative means. The content of the thesis thus looks to establish RS&T as one of these alternative tools.

(iv) Theme three: literature addressing the development of the EU's RS&T capability

Thus far, literature touching upon the most recent developments in EU RS&T policy is limited. However, secondary resources were drawn upon to account for the emergence of a pan-European capability in this field. Ulrika Mörth, in particular, is extensively referred to concerning her identification of the EU-US 'technology gap'. She considers this to be a crucial factor in the intensification of research being conducted at the European level.¹⁸

Her work is supplemented by the findings of John Peterson and Margaret Sharp's 1997 publication *Technology Policy in the European Union*. This body of work also identifies EU-US RS&T competitiveness as an influential factor in spurring on greater cohesion in European research. Moreover, Peterson and Sharp also assist in accounting for the increasing internationalisation of research in general – and European research in particular. They draw attention to issues such as the increasing costs of, and risks in, research, determining that spreading these factors between collaborative partners would be beneficial to all parties concerned.¹⁹

The 2000 publication of Luis Menéndez and Susana Borrás' article "Explaining changes and continuity in EU technology policy: the politics of ideas", provides a more recent contribution to developments in EU RS&T. The authors' work reflects the

¹⁸ Ulrika Mörth, "Framing an American threat – The European Commission and the technology gap", in Knodt and Princen, *Understanding the European Union's External Relations*, 75.

¹⁹ Peterson and Sharp, *Technology Policy in the European Union*.

increasing emergence of constructivist thought in accounting for EU international action. Menéndez and Borrás' identify that, although matching its RS&T competitors provided the initial catalyst for the creation of an EU role in RS&T, the influence of ideas, rather than interests, has become an increasingly important factor in shaping policy. They argue that European policymakers' changing perceptions of science and its applications have given rise to the promotion of innovation in areas such as environmental sustainability, health and food. Recent developments in EU RS&T policy are currently considered as reflective of the Union's wider social goals, concerning the promotion of innovation to address 'societal needs'.²⁰

(v) Theme four: literature focused on the wider New Zealand-EU relationship

Maureen Benson-Rea and Mia Mikic's publication "New Zealand-Europe Trade Relations: Reconciling Hypercompetition with the Tyranny of Distance"²¹ was consulted in the investigation of wider New Zealand-EU relations. Although the article focused on the trading relationship, it identified a number of issues that affected this relationship which could, in turn, be applied to New Zealand-EU RS&T collaboration. The issues, in particular, concerned problems created by the geographical distance between the two partners. Linked to this was the identification of New Zealand's limited resources with which to conduct external relations. For the purposes of this thesis, Benson-Rea and Mikic's findings concerning bottlenecks within the New Zealand-EU trade relationship were thus applied to the more specific field of RS&T.

²⁰ Luis Menéndez and Susana Borrás, "Explaining changes and continuity in EU technology policy: The politics of ideas", <http://www.iesam.csic.es/doctrabl/dt-0001.pdf> (12 May 2008), 16.

²¹ Maureen Benson-Rea and Mia Mikic, "New Zealand-Europe Trade Relations: Reconciling Hypercompetition with the Tyranny of Distance", *European Studies*, no. 21 (2005).

Published the same year as the New Zealand-EU STC Arrangement was signed, George F. Stuart's 1991 report on the status of New Zealand RS&T²² may be considered outdated in its ability to apply to New Zealand-EU research collaboration in 2008. However, the report has proved to be a useful starting point, from which consequential developments in the relationship have been gauged. Stuart recognised as early as 1991 that New Zealand policymakers underestimated RS&T's relevance to areas such as economic, health and environmental state priorities. He additionally outlined particular themes in New Zealand's international research engagement that continue to apply today. Geographical isolation and a lack of funding, in particular, were referred to within his report. Stuart's work provides a useful snapshot of New Zealand RS&T in 1991. More importantly, however, it produced valuable insights into factors affecting the New Zealand research community's international engagement that remain relevant in 2008.

(vi) Conclusion

The literature review has provided an introduction to the secondary sources that were drawn upon concerning the wider conceptual framework applied by this dissertation. To summarise, the thesis refers to literature defining the normative nature of the EU and applies this to its role in RS&T. Taking this normative role into account, the research considers collaboration in science as a tool with which the EU conducts its international relations. The works of constructivist theorists are therefore drawn upon to demonstrate how social interaction and shared ideas, values and norms provide an alternative means for the Union to conduct its foreign affairs.

²² George F. Stuart, *A Review of New Zealand collaboration in international science and technology* (Wellington, Ministry of Research, Science and Technology, 1991).

Finally, specific publications addressing New Zealand-EU relations and New Zealand RS&T were referred to during the research process. Investigation of the wider relationship allowed for the identification of particular characteristics which, through the dissertation's primary research, were determined as also affecting the specific RS&T relationship. In the absence of secondary resources addressing the particular field of research, a wider literary consultation process was undertaken. This allowed the identification of existing works and theories of relevance which, in turn, were applied to the new field of research within this thesis.

1.5 Thesis structure

(i) The EU in international relations: constructivism, identity and values

This chapter aims to identify an appropriate theoretical framework to account for the unique role of the EU in international relations. The chapter begins with a critique of traditional realist theory, in an attempt to demonstrate why such an approach cannot account for the Union's ability to utilise its capacity in external relations as a means to conduct foreign policy. RS&T is identified as an increasingly effective tool in the external projection of the Union and, taking this into account, the chapter moves on to establish the EU as a normative power in its role in this field. Linking normative power with the emphasis that constructivist theory places upon the importance social interaction and shared ideas, the chapter thus identifies constructivism as an appropriate theoretical fit within which to examine the Union's international role in RS&T.

(ii) The development of the EU's capability in RS&T to 2008

Chapter three outlines the EC's increasing involvement in the development of a pan-European RS&T capacity to 2008 and identifies a number of external factors as important in influencing the expansion of the EU's role in this field. The chapter also details the path from the Europeanisation of RS&T to its internationalisation. Chapter three's final focus on the Union's current approach to RS&T thus links back to the preceding section's identification of EU as a normative power in international relations.

(iii) New Zealand-EU engagement in the field of RS&T to 2008

The fourth chapter of this thesis focuses on the New Zealand-EU relationship in RS&T to date. It details the beginnings of the official partnership and explains why efforts to collaborate were initially rather limited. The chapter goes on to detail the internationalisation of EU RS&T as an important factor in enhancing New Zealand's involvement within the Framework Programmes. Attention is also drawn to current factors inhibiting more effective engagement between the two and establishes these factors as recurring themes characterising third-country-EU RS&T engagement. Finally, the chapter addresses emerging developments in New Zealand-EU RS&T collaboration in an attempt to deduce the future shape of the relationship.

(iv) A comparative study of selected third countries' engagement with the EU in RS&T: Canada, Australia and New Zealand

A comparative study of Australian and Canadian engagement with the EU in the field of research is undertaken in chapter five. The chapter investigates the prevalence of the

collaborative bottlenecks outlined in the previous chapter within non-associated third countries in general. Where commonalities occurred between the New Zealand, Australian and Canadian experiences, an investigation of the methods employed by each nation to address these issues was undertaken. By comparing the three countries' RS&T engagement with the Union, the chapter finally looks to assess the current status of the New Zealand-EU relationship in this field and, in turn, prospects for the partnership's future.

(v) Case studies: current collaborative projects

Chapter six involves the selection of three New Zealand-EU collaborative research projects for a multiple case-study analysis. The research findings from each study are drawn from data collected from structured interviews with project participants from New Zealand. Ultimately, the chapter identifies commonalities between the case-studies in an attempt to illustrate the wider picture of New Zealand-EU cooperation in RS&T. In doing so, this chapter reinforces the existence of the themes that have been identified in earlier chapters within a real-life context.

(vi) Conclusions

The dissertation's concluding chapter provides a comprehensive summation of the findings drawn from the preceding chapters in an attempt to inform the original topic of investigation. Moreover, it looks to use these findings to provide normative recommendations for the future of joint New Zealand-EU RS&T ventures. The chapter

concludes by identifying additional areas of research that could be investigated concerning the dissertation's research focus.

Chapter Two

The EU in international relations: constructivism, identity and values

2.1 Introduction

The European Union (EU) has emerged as an anomaly in international relations, challenging preconceived assumptions as to the nature of international society and the ways in which world powers interact on the global stage.²³ Neither state nor international organisation, the current status of the EU has been described by some as *sui generis*²⁴ or, in other words, a unique political entity. Other descriptions have described the EU as possessing ‘actorness’²⁵, ‘presence’²⁶, ‘civilian power’²⁷ or ‘normative power’²⁸. Whilst no single approach towards the classification of the EU and its identity has been adopted, it is nevertheless clear that current theories of international relations, which traditionally focus on entities of a state-like orientation, unravel in their attempts to derive the nature of the EU and its global role.²⁹ Indeed, Alice Landau states that efforts on the part of international relations theorists to define the EU are thwarted by the necessity to take into account the continuing integration and transformation of the Union. Moreover, she regards the application of such theory of limited value, as “...no single theoretical

²³ Ben Rosamond, *Theories of European Integration* (United States of America: St. Martin’s Press, 2000), 175.

²⁴ Rosamond, “Conceptualizing the EU model of governance in world politics”.

²⁵ D. Allen and M. Smith, “Western Europe’s Presence in the Contemporary International Arena”, in *The Future of European Political Cooperation, Essays on Theory and Practice*, ed. Martin Holland, (London: Macmillan, 1991), 95-120, as referred to in Ben Tonra, *The European Union’s Global Role*, http://www.fornet.info/documents/TONRA_Presentation%20November%202003.pdf.

²⁶ Gunnar Sjøsted, *The External Role of the European Community* (Farnborough: Saxon House, 1977), as referred to in Tonra, *The European Union’s Global Role*.

²⁷ François Duchêne, “Europe’s role in world peace”, in *Europe Tomorrow: Sixteen Europeans Look Ahead*, eds. Richard Mayne (London: Fontana/Collins, 1972).

²⁸ Manners, “Normative Power Europe”.

²⁹ Alice Landau, “Introduction: The European Union in a Changing Context”, in Landau and Whitman, *Rethinking the European Union*.

framework captures the complexity, the internal dynamics, the richness of the network and the external personality of the EU...”³⁰

Rationalist theories still tend to dominate the literature in the hunt to capture the essence of the EU. Nevertheless, such theory is predisposed to focus on what Sonia Lucarelli terms as the ‘hardware’ aspects of foreign policy, whilst neglecting the influence of existing ‘software’, such as values, norms and principles.³¹ In this regard, rationalism and, in particular, realist theory, fails to reach beyond the attempt to address high politics within the EU’s Common Foreign and Security Policy (CFSP) and recognise the importance of the European Community (EC) Pillar in engaging in foreign policy within its external relations capacity.³² Taking into account Landau’s observation that no one theory can define the complex nature of the EU,³³ this section of the thesis therefore attempts to identify constructivism as an alternative, yet relevant, theoretical framework to apply to the specific rationale of EU external relations in the field of Research, Science and Technology (RS&T).

The chapter begins with a review of conventional rationalist theory and endeavours to explain why such theory is inappropriate in examining the projection of the EU’s image upon the world stage. The chapter then moves on to identify other theories of EU identity and adopts Ian Manners’ concept of the EU as normative in nature. In this context, constructivist theory has been identified as the most suitable fit to conceive of the notion of an EU global presence. A review of this theory and justification for its use

³⁰ *Ibid*, 1-7.

³¹ Sonia Lucarelli, “Introduction: Values, principles and identity in European Union foreign policy”, in *Values and Principles in European Union Foreign Policy*, eds. Sonia Lucarelli and Ian Manners (Great Britain: Routledge, 2006), 1.

³² Rosamond, “Conceptualizing the EU model of governance in world politics”, 463-478.

³³ Landau, “Introduction”, 1.

in addressing EU external relations will be provided, outlining the value of its application to the Union's policies in RS&T. Finally, this section of the thesis aims to clarify the rationale behind the EU's international engagement in science and technology, ultimately looking to identify the Union's use of RS&T as a new form of foreign policy or 'science diplomacy'.

2.2 International relations theory and the EU's global presence

(i) Rationalism in EU external relations

Since its inception as the European Coal and Steel Community (ECSC) in 1951, the present shape of the EU is the result of a short, yet dramatic, evolutionary process. It is the seemingly indefinable state of the EU that has spurred heated debate among international theorists as to which concept of European identity is most suitable. This debate is further enhanced by theorists' cultural differences, whereby American scholars emphasise the importance of realism and power, whilst European scholars tend to focus on the significance of values and rules.³⁴ Currently dominated by rationalist theory, theoretical foci on the EU in international relations have also recently seen alternative theories, such as constructivism, enter the ring and contribute additional perspectives on the classification of the EU.³⁵ However, in order to present a case for the use of constructivism, it is necessary to first examine the theory's opposition in EU external

³⁴ *Ibid.*

³⁵ Filippo Andreatta, "Theory and the European Union's International Relations", in *International Relations and the European Union*, eds. Christopher Hill and Michael Smith (Oxford: Oxford University Press, 2004), 19.

relations to see whether a more suitable fit can be found to address the nature of the EU's RS&T policy development towards third parties.

As outlined earlier, rationalist theory is considered mainstream in its perspectives on international relations.³⁶ The rationalist school of thought, of which political realism is the dominant sub-theory, is typically defined by a focus on the centrality of the state, the pursuit of the national interest and an emphasis on the concept of power.³⁷ In determining the EU's place on the world stage in particular, it is realist literature that currently dominates the scene.³⁸ This observation is significant as although there is no real consensus concerning what sort of actor the EU actually is, it is not, in its current shape, a state. Hence, as Landau argues, the nature and role of the EU, indefinable as it currently may be, precludes applying theoretical frameworks devised to examine states or international organisations.³⁹ Thus, the very definition of rationalism makes such a theory unsuitable when attempting to define the nature of the EU. As Ben Rosamond argues, "...the expectation within the system is that actors be state-like..."⁴⁰ He goes on to claim that:

"...Realist theories of international relations expect nothing less than rational, coherent state-like entities to be the only significant actors in politics beyond the nation state. Liberals and regime theorists anticipate the rise of international cooperation and are more comfortable with a variegated pattern of actors. But states' activities and the rational pursuit of state interests remain the key motors of world politics..."⁴¹

³⁶ Rosamond, *Theories of European Integration*, 172.

³⁷ Hans J. Morgenthau, *Politics Among Nations: The Struggle for Power and Peace*, Fifth Edition (New York, Alfred A. Knopf, 1978), 4-15.

³⁸ Petiteville, "Exporting 'values'?", 127.

³⁹ Landau, "Introduction", 1.

⁴⁰ Rosamond, "Conceptualizing the EU model of governance in world politics", 463-478.

⁴¹ *Ibid.*

It is therefore possible to see that rationalists may neglect to recognise the importance of particular EU characteristics or actions as a result of the limitations placed on their state-centred system of analysis.⁴²

This is indeed the case concerning the economic leverage of the EU, where realism's disregard for economic issues is continuously critiqued by opposing theorists.⁴³ This aspect of realist theory is becoming increasingly marginalised in the changing international environment where, at present, globalisation grants increased influence to economic actors and policies.⁴⁴ Moreover, Petiteville states that realist perceptions of the EU's "international political hollowiness"⁴⁵ stems from a misplaced emphasis on, and comparison of, the CFSP, concerning foreign policy as informed by the observable characteristics of the state.⁴⁶ Supporting this point of view, Rosamond argues that mainstream literature on the topic of the EU focuses on its international capabilities within the framework of the Union's capacity to mimic the traditional features of the state.⁴⁷ These points of view are significant as they suggest an inability on the part of realist theory, in its adherence to the guiding principle of the centrality of the state, to conceive of the political dimension of the EC's external relations. Even more importantly, bypassing the significant political capacity of the EC pillar thus neglects a wealth of international interaction, as this branch of the Union's international relations currently wields more power than that available under the CFSP.⁴⁸

⁴² *Ibid.*

⁴³ Whitman, "The International Identity of the European Union: Instruments as Identity".

⁴⁴ Petiteville, "Exporting 'values'?", 127.

⁴⁵ *Ibid.*

⁴⁶ *Ibid.*

⁴⁷ Rosamond, *Theories of European Integration*, 175-176.

⁴⁸ Petiteville, "Exporting 'values'?", 127.

With specific reference to the Union's role in research, the EU's RS&T capacity also falls under the responsibility of the EC pillar. Consequently, the international dimensions of the Union's RS&T activities are classed as external relations. However, as detailed above, rationalism and, in particular, the realist perspectives that currently dominate EU literature are unprepared to examine the Union's ability to export its interests, values and even identity through such a medium. For example, Ben Rosamond argues that traditional rationalist literature finds it difficult to accurately examine the EU's external relations, where important observations relating to the peculiar character of the Union may be overlooked.⁴⁹ This statement, in turn, emphasises the importance of White's argument that literature addressing the EU's international relations must transcend the traditional focus on diplomatic and military tools.⁵⁰ In addition, this perspective on realist theory would also preclude recognising the potential for the EU's involvement in international RS&T to constitute a new form of foreign policy.

Even theorists who do manage to perceive of the EU as fundamentally different still run the risk of analyzing the Union and its international role in rationalist terms. The absence of traditional state-like tools supporting the Union's international affairs, such as military capability and engagement in conventional diplomacy, is commonly cited in stressing the possibility that the EU embodies something other than an entity pursuing interests and power.⁵¹ However, focusing on such a characteristic can entangle the investigation in conventional theoretical thinking. Sjursen draws on the research of Robert Kagan, who defined Europe as 'Kantian', or 'alternative', in its international

⁴⁹ Rosamond, "Conceptualizing the EU model of governance in world politics", 463-478.

⁵⁰ White, "The European Challenge to Foreign Policy Analysis", 127.

⁵¹ Helene Sjursen, "The EU as a 'normative' power: how can this be?", *Journal of European Public Policy* 13, no. 2 (2006), 236.

relations as opposed to the United States' realist, 'Hobbesian' approach.⁵² Kagan, in turn, views Europe as Kantian by necessity rather than choice, rendering the EU's preference for the use of non-conventional and non-military instruments in its external projection as a "necessary virtue".⁵³ However, as Lucarelli argues, defining the Union in such a way neglects to account for the importance the EU places upon aspects such as democratisation and respect for human rights in the attempt to strengthen international society.⁵⁴ In this way, Kagan makes the assumption that if the EU possessed traditional military instruments it would, like the US, take on a Hobbesian identity and thus overlooks the possibility that the EU may embody a new kind of entity altogether.⁵⁵

(ii) The EU and the notion of civilian power

It is evident that the EU does possess a real presence within the international arena and thus it must encompass an identity of some description. Ben Rosamond, for example, states that despite the unpredictable nature of EU external action, the exhibition of external behaviour on the part of the Union and its perceived importance by other actors illustrates the Union's capacity to act on the global stage.⁵⁶ However, as outlined above, mainstream theorists are consistently challenged in adapting their state-centred precepts in attempts to classify the identity of the EU and derive its appropriate role in international relations.⁵⁷ The primacy placed upon state-centred identities and their conventional characteristics is problematic and an inappropriate fit within the theoretical

⁵² Robert Kagan, *Of Paradise and Power. America and Europe in the New World Order*, (New York: Knopf, 2003), as referenced in Sjursen, "The EU as a 'normative' power", 237.

⁵³ *Ibid.*

⁵⁴ Lucarelli, "Introduction", 7.

⁵⁵ Kagan, *Of Paradise and Power*, as referenced in Sjursen, "The EU as a 'normative' power", 237-238.

⁵⁶ Rosamond, *Theories of European Integration*, 177 and Rosamond, "Conceptualizing the EU model of governance in world politics", 463-478.

⁵⁷ Rosamond, "Conceptualizing the EU model of governance in world politics", 463-478.

framework of this thesis. For this reason, the examination of alternative literature is undertaken in deriving the character of the EU.

Although the final shape of the Union is not yet set, an initial alternative proposal emerged in 1972 regarding the notion of the EU as a ‘civilian power’⁵⁸. Coined by Duchêne, the concept that the European Economic Community (EEC), as it was termed until 1992, could be explained as embodying the notion of a civilian power initially arose due to its early role as a primarily economic actor.⁵⁹ Observing an enhanced international position of the EEC as a result of its increasing economic weight, this observation in turn contributed to the emergence of the notion of ‘economic diplomacy’, which realist theory struggles to accommodate.⁶⁰ At the same time, traditional instruments of foreign policy, such as military capacity and conventional diplomacy, were conspicuous in their absence. The precept that the EEC exercised some kind of civilian power therefore arose, where the Union’s interests in the international arena were supported by a preference for the use of “soft power” tools such as economic instruments, dialogue and diplomacy.⁶¹

The concept of the EU as a civilian actor does allow for a better understanding of the nature of the Union, in its ability to conceive of the exertion of international influence through non-conventional means. However, Ian Manners argues that Duchêne’s concept of Europe as a civilian power does not go far enough in its explanation of the EU’s personality. Arguing that his work remains within the remit of the centrality of the state, Manners views that Duchêne’s emphasis on the Union as “long on economic power”⁶²

⁵⁸ Duchêne, “Europe’s role in world peace”, 32-47.

⁵⁹ *Ibid.*

⁶⁰ Landau, “Introduction”, 8.

⁶¹ Bjorn Hettne and Fredrik Soderbaum, “Civilian power or soft imperialism? The EU as a global actor and the role of interregionalism”, *European Foreign Affairs Review* 10, no. 4 (2005), 535-552.

⁶² Duchêne, “Europe’s role in world peace”, as quoted in Manners, “Normative Power Europe”, 238.

points to the theorists' conventional focus on the importance of power, be it military or otherwise, within international relations.⁶³ In addition, given the transformative nature of the EU, the expansion of its membership, its common positions and third countries' perceptions of the Union as an increasingly important player within the international arena, the present state of the EU indicates a move away from its earlier classification as a civilian power significant for its weight in economic affairs.

Aspects of the Union's early civilian role certainly remain central within its present transformation, as seen through the continued primacy placed upon economic instruments in the pursuit of goals, engagement in preventative and reactive diplomacy and a preference for utilising supranational institutions.⁶⁴ The continued absence of 'hard power' military instruments and traditional modes of foreign policy as defined by high politics also precludes, at present, a state-like transformative process.⁶⁵ Thus, in defining this new and emerging presence of the Union in international relations, Ian Manners promotes the concept of the EU as 'normative.'⁶⁶

(iii) Normative power Europe.

Manners' perception of Europe as a normative entity stems from the importance he places upon ideas and norms as opposed to the traditional focus on the physical expression of power. Embedded in the assumption that the EU embodies a 'post-national' entity,⁶⁷ in defining 'normative Europe', Manners states that:

⁶³ Manners, "Normative Power Europe", 238.

⁶⁴ *Ibid*, 236-237.

⁶⁵ Lucarelli, "Introduction", 1.

⁶⁶ Manners, "Normative Power Europe", 235-258.

⁶⁷ Lucarelli "Introduction", 8.

“...the notion of a normative power Europe is located in the discussion of the ‘power over opinion’, *idée force*, or ‘ideological power’, and the desire to move beyond the debate over state-like features through an understanding of the EU’s international identity...”⁶⁸

Classified as “...collective expectations for the proper behaviour of actors with a given identity...”⁶⁹, Manners suggests that the important influence of norms within international relations was brought to the world’s attention by the 1989 collapse of the Eastern European Soviet regimes, as a result of what was deemed unsustainable ideology.⁷⁰ More specifically, the path from ECSC to EU has seen the development of a series of universal norms that the EU now places as central to relations between Member States and non-EU actors alike, and which are enshrined within the Treaty on European Union (TEU). Manners identifies these as peace, liberty, democracy, rule of law, and a respect for human rights.⁷¹

Rosamond, too, identifies the normative character of the EU, stating that “...the EU’s external relations activities can be read as attempts to shape conceptions of ‘the normal’ in international politics...”⁷² In illustrating this concept, Lucarelli draws on a statement made by the European Council which declares:

“...Does Europe not, now that it is finally unified, have a leading role to play in a new world order, that of a power able to both play a stabilising role worldwide and to point the way ahead for many countries and peoples? Europe as the continent of humane values, the Magna Carta, the Bill of Rights, the French Revolution and the fall of the Berlin Wall, the continent of liberty, solidarity and above all diversity, meaning respect for others’

⁶⁸ Manners and Whitman, *The Foreign Policies of European Union Member States*, as referenced in Manners, “Normative Power Europe”, 239.

⁶⁹ P. Katzenstein, “Introduction”, in *The culture of national security: norms and identity in world politics*, ed. P. Katzenstein, (Ithaca, NY: Columbia University Press, 1996), as quoted in Ben Rosamond, “New Theories of European Integration”, in *European Union Politics*, 2nd edition, ed. Michelle Cini (Oxford: Oxford University Press, 2007), 131.

⁷⁰ Manners, “Normative Power Europe”, 238.

⁷¹ *Ibid.*, 242.

⁷² Rosamond, “Conceptualizing the EU model of governance in world politics”, 463-478.

languages, cultures and traditions... Europe needs to shoulder its responsibilities in the governance of globalisation...”⁷³

This statement thus strengthens the notion of the EU as a normative power. Whilst the Union is now developing some degree of military capability through the European Security and Defence Policy (ESDP), it is evident that it does not intend to pursue international stability through force of power but through the diffusion of ideas, values and norms.⁷⁴ Indeed, Manners claims that “...the EU exists as being different to pre-existing political forms, and that this particular difference predisposes it to act in a normative way...”⁷⁵ Thus, the way in which the EU conducts its external relations can be considered as influenced by an ‘ethics of responsibility’, where norms such as good governance and democracy are built in to its relations both internally and externally.⁷⁶ Lucarelli states that such an approach in turn leads into the description of the EU as a ‘principled actor’, distancing both its vision and role within international society from powers such as the US, which consistently pursues the fulfilment of national interests. Susan Baker, for example, observes that the US “...persistently attributes greater weight to economic over environmental values and to meeting individual needs over the maintenance of the collective good...”⁷⁷

Lucarelli also uses the example of the Union’s distinctive environmental commitments in order to emphasise the normative nature of the EU and its characteristic focus on particular values within international relations. Similarly establishing a comparison between the Union and the US with regard to their respective attitudes

⁷³ European Council, 2001, as quoted in Lucarelli, “Introduction”, 3.

⁷⁴ Lucarelli, “Introduction”, 7.

⁷⁵ Manners, “Normative Power Europe”, 242, as quoted in Sjørnsen, “The EU as a ‘normative’ power”, 236.

⁷⁶ Lucarelli, p. 3.

⁷⁷ Susan Baker, “Environmental values and climate change”, in Lucarelli and Manners, *Values and Principles in European Union Foreign Policy*, 96.

concerning the resolution of climate change, Lucarelli states that at Kyoto, Bonn and Johannesburg, the EU demonstrated its commitment to environmental protection and the pursuit of alternative energy sources,⁷⁸ whereas the United States remained clear in its preference for pursuing economic interests over environmental concerns.⁷⁹ Here, Lucarelli concludes that the Union, in its emergence as a global player, has “...actively challenged the principles adopted by other international actors that are considered cornerstones of foreign policy in the realist traditions...”⁸⁰

However, some debate exists as to whether the projection of EU norms upon international relations actually constitutes the use of ‘soft imperialism’, where particular norms or conditionalities are enforced in order to promote self-interest.⁸¹ In his rejection of the concept concerning the pursuit of ideological imperialism, Manners’ research further distances itself from conventional state-centred analyses.⁸² He argues that the creation of the Union within the post-World War II environment, characterised by the aversion to nationalist tendencies and the emergence of the notion of pooling sovereignty to promote peace, precludes the possibility of such an approach.⁸³ The Union was thus built upon the principles that not only inform its decision making but which the EU now, as Rosamond suggests, seeks to normalise within international relations.⁸⁴

Moreover, Manners draws attention to particular attempts on the part of the EU to promote norms which actually put the Union at odds with traditional allies. The EU’s pursuit of the abolition of the death penalty is the specific example that Manners uses to

⁷⁸ Lucarelli, “Introduction”, 4.

⁷⁹ Baker, “Environmental values and climate change”, 96.

⁸⁰ Lucarelli, “Introduction”, 4.

⁸¹ Hettne and Soderbaum, “Civilian power or soft imperialism?”, 535-552.

⁸² Manners, “Normative Power Europe”, 240.

⁸³ *Ibid.*

⁸⁴ *Ibid.*, 241.

emphasise this point.⁸⁵ Manners states that the EU's promotion of abolitionist norms cannot be attributed to raising domestic support as, in its implementation within the Member States, the decision had not achieved majority support concerning public opinion.⁸⁶ Additionally, Sjørnsen supports Manners' critique in her observation that pursuing the abolition of the death penalty within the international arena cannot be accounted for with reference to self-interest, due to the difficulties it creates with regards to relations between the Union and its traditional ally, the US.⁸⁷

Additionally, this case-study not only assists in debunking the concept of the EU as ideologically imperial but also informs observers as to the ways in which the EU's promotion of norms are both different in their interpretation and implementation. Manners states that the Union's endorsement of abolitionist norms is tied in with the core norm concerning the respect for human rights.⁸⁸ As mentioned previously, the evolution of the EU has seen the gradual application of a series of core norms both internally and, more recently, with regards to the EU's relations with non-associated third countries. The pursuit of abolitionist norms is thus a uniquely European interpretation of the notion of a respect for human rights and, in turn, the tools which the Union utilises in achieving norm diffusion are distinctively European also. Manners claims that the Union is not attempting to convince those governments in question to adopt the norm but is instead looking to raise the issue at the international level. Thus, in the Union's engagement with

⁸⁵ *Ibid*, 245-252.

⁸⁶ *Ibid*, 251.

⁸⁷ Helene Sjørnsen, "Understanding the common foreign and security policy – analytical building blocks", in Knodt and Princen, *Understanding the European Union's External Relations*, 48.

⁸⁸ Manners, "Normative Power Europe", 245.

‘super-executioners’ China and the United States, Manners considers it evident that the Union is actually attempting to transform the ‘language’ of the international arena.⁸⁹

It is this final notion concerning the EU’s potentially transformative effect on international society which ultimately defines Manners’ concept of Europe as normative. Rosamond, for example, suggests that the unusual nature of the Union links to its ability to influence the international environment by merely existing⁹⁰ and Sjursen also adopts Manners’ precept that the EU acts as a ‘changer of norms’ in the international system.⁹¹ Manners elaborates on his position by stating that not only does the Union’s very identity constitute it as a ‘changer of norms’ but that the EU also consciously acts to change norms.⁹² It is within this context that a useful assessment of the Union’s use of RS&T, as a way to diffuse European values throughout international society and promote a new form of foreign policy through engaging in ‘science diplomacy’, can be made.

2.3 The constructivist contribution and its expansion: the EU’s international role and the diffusion of values and norms

(i) Constructivism

Having defined the EU as a normative power, this chapter operates on the assumption that traditional rationalist theory, which places the state as central to its investigations, cannot assist in the examination of the nature of the EU, nor its international RS&T relations. Rosamond claims that the EU fails to exhibit uniformity in either its

⁸⁹ *Ibid*, 248.

⁹⁰ Rosamond, “Conceptualizing the EU model of governance in world politics”, 463-478.

⁹¹ Sjursen, “Understanding the common foreign and security policy”, 48.

⁹² Manners, “Normative Power Europe”, 252.

governance or external relations and, as such, alternative theories of international relations that reject the state as a central precept, and can instead perceive of the Union's identity in different ways, must therefore be relied upon.⁹³ Of such alternative theories, Rosamond considers constructivism as an increasingly influential perspective within international relations theory.⁹⁴ The central principle in the definition of constructivism focuses on the social nature of the international system. Departing from traditional rationalist perspectives, constructivists regard the world as social rather than material, where interests and identities are not given but endogenous to actors' interactions.⁹⁵ Thus, Rosamond argues that the social construction of interests and identities results in common perceptions among actors concerning the international environment and their roles within it and it is this factor that, in turn, contributes to international stability.⁹⁶

Leading on from the concept of the normative role of the Union, Ben Rosamond argues that constructivist theory is more appropriate in its application to EU international relations due to its ability to better account for the proposed normative nature of the EU.⁹⁷ He states that assessing the EU from this angle allows for the relaxation of the suggestion that the EU qualifies as a 'unitary international actor', instead focusing on the notion that: "...The way that actors conceive of themselves, of others and of their environment is crucial to the conduct of that politics..."⁹⁸ Moreover, departing from rationalist preoccupations with utility maximising actors, Rosamond refers to the increased significance that this branch of theory affords to the presence of ideas, knowledge, shared

⁹³ Rosamond, "Conceptualizing the EU model of governance in world politics", 463-478.

⁹⁴ Rosamond, *Theories of European Integration*, 198.

⁹⁵ *Ibid*, 198-173.

⁹⁶ *Ibid*, 198.

⁹⁷ *Ibid*, 168.

⁹⁸ Rosamond, "Conceptualizing the EU model of governance in world politics", 463-478.

beliefs, discourses and communicative action.⁹⁹ By placing the identity of the EU within this framework, it is therefore possible to bring the notion of Europe as a normative power into focus.

With reference to the theory's specific application to the EU, Rosamond states that constructivists would:

“...shift the research agenda of EU studies into the analysis of the role of ideas, the impact of shared beliefs, the effects of dominant discourses and the processes of communicative action...”¹⁰⁰

Referring back to the discussion of Europe's normative character, the EU's attempts to diffuse abolitionist norms were used as an example of the way in which the Union places its set of core norms as central to its perceived role within global society. This observation not only complements constructivism's emphasis on the importance of the role of ideas but, given the EU's attempt to pursue this norm primarily through the use of presidential and parliamentary statements and dialogue,¹⁰¹ also adheres to the theory's identification of discourse and communicative action as important factors in shaping ideas within the international arena.

Placing the EU's leadership in the field of climate change within a constructivist framework provides a further example of the way in which the theory links in with the Union's normative identity. Furthermore, it helps to illustrate how European norms influence the roles the Union chooses to assume and how it plays out these roles in practice. The EU's involvement in seeking the ratification of the Kyoto Protocol in the face of US opposition provides a specific illustration of the strength of the Union's shared beliefs in supporting its role as an international actor. Moreover, the example of the EU's

⁹⁹ *Ibid.*, and Rosamond, *Theories of European Integration*, 173.

¹⁰⁰ *Ibid.*

¹⁰¹ Manners, “Normative Power Europe”, 248.

role in climate change provides a further demonstration of the Union's effective use of discourse and communicative action in the dissemination of these beliefs.

Signed in 1997, the Kyoto Protocol constitutes an international agreement that commits developed countries to reduce their greenhouse gas emissions in the attempt to combat global climate change.¹⁰² Controversially, in 2001, US President George W. Bush and his administration chose to withdraw from the agreement and, in losing the support of such a dominant international player, the Kyoto Protocol was predicted to fail.¹⁰³ However, as Schreurs states, the EU "surprised" the Bush administration in its move to persevere with the Protocol's ratification process and the EU-15, as it was then, agreed to ratification in the following year.¹⁰⁴ The Union therefore risked being put in a position of potential technological disadvantage vis-à-vis the US and, by pushing through the ratification despite America's withdrawal, sent a strong message to the international community concerning its intent to address climate change.¹⁰⁵

The EU's 2002 ratification of Kyoto brought the tally of countries party to the Protocol to 69. Nevertheless, political commentators were dubious as to whether the Union could "...keep the Kyoto Protocol alive".¹⁰⁶ However, the promotion of EU environmental norms through the example the Union had set in pursuing the Protocol's ratification and continued EU-led discourse on this topic within the international arena played a major role in persuading other states to join. For example, the EU's leading role at the 2001 Conference of Parties (CoP) in Bonn saw the Union manage to retain the

¹⁰² Miranda Schreurs, "The Climate Change Divide", in *Green Giants? Environmental Policies of the United States and the European Union*, eds. Norman Vig and Michael Faure (Massachusetts: The MIT Press, 2004), 207.

¹⁰³ *Ibid*, 208.

¹⁰⁴ *Ibid*, 207-208.

¹⁰⁵ *Ibid*, 209.

¹⁰⁶ *Ibid*, 227.

support of major international actors Japan and Russia.¹⁰⁷ Moreover, in May 2008, 182 parties had ratified the Kyoto Protocol¹⁰⁸ and, although not all of these are bound to meet set emission targets, this provides a clear example of the ability of the Union to influence third countries' actions through normative measures.

The added value in adopting a constructivist framework to assess the EU's external relations, and those of RS&T in particular, lies in Rosamond's claims regarding the theory's ability to "...connect with policy work that deals with norms, understandings and belief systems..."¹⁰⁹ This observation ties in with the way in which this chapter looks to present the notion of the EU as an exporter of the ideas, values and norms that it regards as important in strengthening and stabilising the international environment. In reference to their publication *Values and Principles in European Union Foreign Policy*, Lucarelli and Manners take the lead with regard to literature assessing the importance of the role of values and norms within EU foreign policy. Their work is of particular importance in its ability to conceive of EU foreign policy as not only confined to the mechanisms of the CFSP, as well as its examination of the workings of the EC Pillar. Indeed, Petiteville claims that the ongoing politicisation of the EC's international cooperation distorts the perceived separation of EC and CFSP competencies in foreign affairs.¹¹⁰

The work of Lucarelli and Manners focuses on the EU as a polity informed by a set of values, images and principles which also shape the way in which the Union

¹⁰⁷ *Ibid*, 218.

¹⁰⁸ United National Framework Convention on Climate Change, *Kyoto Protocol*, http://unfccc.int/kyoto_protocol/items/2830.php (06 August 2008).

¹⁰⁹ Rosamond, *Theories of European Integration*, 173.

¹¹⁰ Petiteville, "Exporting 'values'?", 133.

projects itself upon the global stage.¹¹¹ Their research thus ties in well with both constructivism's emphasis on the importance of ideas and shared beliefs and the concept of the EU as normative, therefore providing a useful basis with which to extend to the concept of the Union as an exporter of European values through international RS&T cooperation.

(ii) Interpreting Values and Norms in an International Relations Context

The idea of the EU as a normative power, working towards the projection of common European norms and values upon international society, has useful implications in assessing the rationale behind the internationalisation of the Union's RS&T programmes. The application of this concept to account for the EU's international role in RS&T is a new one and thus, before embarking upon such a task, it is necessary to examine the diffusion of European values and norms within the general context of the Union's external relations. Lucarelli defines 'values' as:

“...notions laden with an absolute positive significance for the overall order and meaning we try and give to our world, with freedom, dignity, liberty, equality, solidarity and justice as examples...”¹¹²

Consistent with the notion of the Union as normative, Lucarelli sees the novel entity of the EU as an influencing factor in the projection of novel behaviour also, conducting its external relations within the context of its identified values, principles and images of the world.¹¹³ Moreover, as Lucarelli states, the very creation of the EU was based upon an initial set of values emphasising cooperation within Europe, economic development and the consolidation of democracy. She goes on to observe that the evolution of the EU's

¹¹¹ Lucarelli, “Introduction”, 1-2.

¹¹² *Ibid*, 10.

¹¹³ *Ibid*, 2.

role was accompanied by the expansion of these values also,¹¹⁴ which currently make up the core norms of peace, liberty, democracy, rule of law and respect for human rights, as identified by Ian Manners.¹¹⁵ Presently, these core norms are increasingly accompanied by a set of what Manners terms ‘minor norms’, arising in response to the changing international environment and which concern concepts of social solidarity, anti-discrimination, sustainable development and good governance.¹¹⁶

It is evident that an emphasis on the particular values and norms discussed above is not unique to the EU. Indeed, both Welsh and Sjursen regard these norms as ‘universal’ to international society.¹¹⁷ However, what does distinguish the EU from other international players is the way in which it seeks to interpret and implement these norms.¹¹⁸ The 2003 European Security Strategy (ESS), for example, draws attention to the central aim of the Union to strengthen the international order and secure ‘sustainable peace’.¹¹⁹ In the present international climate, this goal is clearly not one which the EU values alone. However, it is the Union’s unique pursuit of this aim which exhibits the central role that values and norms play in accompanying the EU’s international role:

“...Europe should be ready to share in the responsibility for global security and in building a better world... The development of a stronger international society, well functioning international institutions and a rule-based international order is our objective... Spreading good governance, supporting social and political reform, dealing with corruption and the abuse

¹¹⁴ *Ibid*, 8.

¹¹⁵ Manners, “Normative Power Europe”, 242.

¹¹⁶ *Ibid*, 242-243.

¹¹⁷ Sjursen, “Understanding the common foreign and security policy”, 48 and Ian Welsh, “Values, science and the European Union – Biotechnology and transatlantic relations”, in Lucarelli and Manners, *Values and Principles in European Union Foreign Policy*, 68.

¹¹⁸ Sonia Lucarelli and Ian Manners, “Conclusion – Valuing principles in European Union foreign policy”, in Lucarelli and Manners, *Values and Principles in European Union Foreign Policy*, 203.

¹¹⁹ European Council, *European Security Strategy 2003*, as referenced in Lucarelli, “Introduction”, 3 and Sjursen, “The EU as a ‘normative’ power”, 245.

of power, establishing the rule of law and protecting human rights are the best means of strengthening the international order...”¹²⁰

In this way, it is clear that the EU perceives adherence to such universal norms as a way to address the causes of international instability.¹²¹

This factor certainly distinguishes the EU from other international actors with regards to its preference for using alternative foreign policy tools. Manners claims that dialogue between the EU and United Nations (UN) culminated in the adoption of the idea of ‘sustainable peace’, which determined the need to address “...the causes, rather than just the symptoms, of conflict and violence...”¹²² Such an approach is considered as a more effective way in which to secure and sustain international peace.¹²³ Thus, the EU perceives the need to promote core values of social and economic development, good governance and democratisation, the rule of law and respect for human rights, in the attempt to build an ‘indigenous capacity’ to address international tensions before they can escalate into violent conflict.¹²⁴

It is in regard to this observation that Manners stresses the EU’s unique and important role as a norm-driven power in international relations. His work assessing the impact of the EU’s developing ESDP capabilities warns that militarising may weaken the Union’s normative role and thus claims that possessing military capacity does not ultimately equate to an increase in power.¹²⁵ Moreover, he suggests that ongoing militarisation could shift the balance between the Union’s long and short term activities

¹²⁰ *Ibid.*

¹²¹ Ian Manners, “The constitutive nature of values, images and principles in the European Union”, in Lucarelli and Manners, *Values and Principles in European Union Foreign Policy*, 26.

¹²² Ian Manners, “Normative power Europe reconsidered: beyond the crossroads”, *Journal of European Public Policy* 13, no. 2 (2006), 185.

¹²³ *Ibid.*, 186.

¹²⁴ *Ibid.*, 185-186.

¹²⁵ *Ibid.*

in conflict resolution, disabling the EU's unique approach to addressing international conflict.¹²⁶ Manners' theorising is supported when examining other international actors' roles in resolving international conflict.

In contrast to the EU's current stance on the matter, traditional state-like actors are predisposed to rely on conventional foreign policy instruments which, with regard to military action, tend to address only the symptoms of international stability.¹²⁷ Thus, the EU's current capacity and preference to utilise long term conflict prevention strategies, through its ability to infuse its values and norms within the state structures of others, is not only unique but important in its potential to provide a more effective way to stabilise the international environment. Should the militarisation of the Union eventually take place, then, it will be important to ensure that the normative capacity and focus of the EU is not lost.

(iii) Diffusing Values and Norms in an International Relations Context

It has been argued that the EU operates upon a value-driven image of the world. As detailed above, the Union also regards the implementation of its designated norms as central to providing solutions in securing and sustaining international peace. Romano Prodi, for example, stated in 2003 that:

“...Europe needs to project its model of society into the wider world. We are not simply here to defend our own interests: we have a unique historic experience to offer. The experience of liberating people from poverty, war, oppression and intolerance. We have forged a model of development and continental integration based on the principles of democracy, freedom and solidarity – and it is a model that works...”¹²⁸

¹²⁶ *Ibid.*

¹²⁷ *Ibid.*, 194.

¹²⁸ Romano Prodi 2003, as quoted in Manners, “The constitutive nature of values, images and principles in the European Union”, 19.

The continent's turbulent history therefore allows the EU to perceive itself as a stabilising power and looks to use foreign policy, in its broadest context, as a means of embedding European values within the international system. Within the constructivist framework, actors' interests are dependent on their perceived identities and social roles¹²⁹. In this way, the perception of the EU as a principled power undertaking a stabilising role therefore asserts the Union's interest in influencing international society by promoting aspects of the European experience. Susan Baker also emphasises this point by drawing attention to the increasing prevalence with which the EU makes its external relations both informed by, and conditional upon, core European norms.¹³⁰ Sjusren, for instance, refers to the promotion of democracy, good governance and the introduction of human rights clauses within third party agreements as concrete examples of this observation.¹³¹

In examining the specific mechanisms the EU utilises in the diffusion of norms, Ian Manners' research proves to be a particularly useful reference point. The author identifies six ways in which the Union has dispersed its ideas throughout the international community over time. *Contagion* refers to the unintentional spread of ideas to other political actors. *Informational diffusion* alludes to the impact of the EU's strategic communications. Diffusion resulting from the institutionalisation of a relationship between the EU and a third party is defined as *procedural*. *Transference* refers to substantive or financial exchanges with third parties. *Overt diffusion* is a result of the Union's physical presence within third states. Finally, the *cultural filter* refers to political

¹²⁹ Sjusren, "Understanding the common foreign and security policy", 43.

¹³⁰ Baker, "Environmental values and climate change", 78.

¹³¹ Sjusren, "The EU as a 'normative' power", 235-236.

learning which informs and leads to the adaptation or rejection of norms.¹³² Thus, it is possible to observe that the EU's foreign policy activities consist of a mixture of ways in which to project the Union internationally and where the boundary between the EC and CFSP pillars is transcended. Indeed, Petiteville argues as to the politicisation of the EC's external affairs in his claim that the exportation of values is now present within EU economic cooperation, or 'soft diplomacy', also.¹³³

Manners' case-study concerning the EU's pursuit of abolitionist norms helps to rule out the possibility of ideological imperialism on the part of the EU. As mentioned above, constructivism asserts that actors' perceived identities and roles in turn help to formulate their interests¹³⁴ and, thus, it is this notion that informs Europe's normative interests in the diffusion of universal norms in the stabilisation of international society. However, this is not to say that the EU is purely altruistic in its actions. The diffusion of European norms does, of course, help to serve the material interests of the Union within the general context. Martin Holland suggests that the EU, having successfully established a series of values internally, may now be working to shape reality from a European perspective.¹³⁵ It is also possible to see that strengthening international society naturally meets European interests, providing a stable environment for the Union to conduct its economic affairs. Wyn Rees, for example, states that the EU's engagement with third parties is increasingly working towards satisfying its own security agenda:

¹³² Manners, "Normative Power Europe", 244-245.

¹³³ Petiteville, "Exporting 'values'?", 128.

¹³⁴ Sjursen, "Understanding the common foreign and security policy", 43.

¹³⁵ Martin Holland, discussion with author, Christchurch, New Zealand, October 2007.

“...Whether in the fight against crime, the combating of international drug trafficking or migration, the EU has embedded internal security objectives into its foreign policy agreements...”¹³⁶

It is therefore possible to predict that in internationalising EU RS&T programmes, the Union is working towards the establishment of another mechanism, or ‘scientific diplomacy’, with which to promote European values and achieve a certain degree of material gain.

2.4 Scientific Diplomacy

The preceding sections have established the notion of the EU as an exporter of values and norms through its broadening external relations with other states. The Union’s role as an international RS&T player is a relatively new one and, in addition, the EU’s emerging capabilities in this area provide an interesting blend of the normative versus traditional self-interest in declaring the desire to both “harness the best minds” and “address global issues”.¹³⁷ The European Council’s resolution concerning international cooperation in RS&T helps illustrate these two perspectives in determining the EU’s aims to:

“...strengthen European competitiveness and develop technologies for future markets; develop partnerships in science and technology, in particular with third countries of strategic interest to the Community; share responsibility and conduct RTD on economic and social challenges; promote RTD relevant to the needs and priorities of developing countries for fostering their sustainable growth; share S&T information and contribute to large-scale and cross-frontier science and technology...”¹³⁸

¹³⁶ Wyn Rees, “The External Face of Internal Security”, in *International Relations and the European Union*, eds. Christopher Hill and Michael Smith (Oxford: Oxford University Press, 2004), 218.

¹³⁷ Melae Langbein, interview by author, Brussels, Belgium, 04 July 2007.

¹³⁸ European Council resolution on international RTD cooperation, March 1996, as quoted in European Commission, *Research and Technological Development Activities of the EU: Annual Report 1996* (Luxembourg, 1997).

Thus, as early as 1996, the EU had established a set of objectives aiming to advance the progress of developing countries and other third parties of strategic interest through engagement in RS&T, whilst also looking to increase its own competitiveness in international research. The EU's new emphasis on the importance of RS&T in both internal and external matters is part of a worldwide recognition concerning the importance of science and its useful applications. Globalisation and increasing interdependence between economic blocks have paved the way for the emergence of the knowledge economy in which technological capacity and research developments are central components.¹³⁹

However, this must be qualified as, at present, the EU's external RS&T capacity is still trying to achieve a balance with regard to internal priorities. As we have seen in its external projection of norms in other areas, the EU consolidated such action internally before looking towards engagement with other third parties. Currently, the Union is still working towards greater coherence of internal RS&T policy whilst also attempting to apply its vision for RS&T internationally:

“...the existence within the EU of several prominent nationally-based scientific communities, each with its own institutions, customs and practices, increases the tendency for conflict within the EU over the direction of science policy, its technical anatomy and the location of particular projects...”¹⁴⁰

Additionally, European priorities concerning its international RS&T engagement are typically focused upon its near abroad. During the early stages of the EU's Framework Programmes, for example, opportunities concerning third party research collaboration with the Union were limited to neighbourhood partners or those viewed as priority

¹³⁹ European Commission, “An international cooperation programme in science and technology – Why?”, in *Confirming the International Role of Community Research* (Luxembourg, 1999).

¹⁴⁰ Welsh “Values, science and the European Union”, 61.

countries. In particular, the launch of the Specific International Scientific Cooperation Activities (INCO) within the Fourth Framework Programme (FP4) and its successor, INCO 2, separated third country partners into five groups: pre-accession states; New Independent States (NIS) of the former Soviet Union and Central and Eastern European Countries (CEEC) not in the pre-accession phase; Mediterranean partner countries; developing countries and, lastly, emerging economy and industrialised countries. With regard to their specific opportunities within FP4, pre-accession, neighbourhood, Mediterranean and developing countries received access to EU funding in Framework Programme activities. Industrialised countries could gain access to the Framework Programme on a project-by-project and self-funded basis, provided that they could offer “measurable added value” to the particular project.¹⁴¹ Thus, the key objectives of early international cooperation focused on aspects such as providing assistance to pre-accession, NIS and CEEC countries, accompanied by an emerging focus on the Mediterranean partnership and developing countries also.¹⁴²

With regard to the Union’s current RS&T engagement with non-associated third countries, Bauer claims that the EU also has an interest in balancing international competitiveness amongst industrialised countries, exhibited by its willingness to look beyond the big RS&T players and engage with smaller ones.¹⁴³ Nevertheless, the Union does still distinguish its priorities within this context. For example, New Zealand’s former Science Counsellor, Melae Langbein, draws attention to the Seventh Framework Programme’s (FP7) Marie Curie mobility project, which provides for incoming

¹⁴¹ European Commission, “*International Research and Europe: A Window on the World* (Luxembourg, 2000), 4-5.

¹⁴² *Ibid*, 4.

¹⁴³ Michaela Bauer, interview by author, Brussels, Belgium, June 2007.

international research-related fellowships. The programme funds participants from developing countries to conduct research in Europe for two years and, once completed, the researchers receive an additional year's funding to return to their respective countries and disseminate acquired knowledge, technology and expertise. In contrast, whilst also eligible for funding, researchers from industrialised countries do not receive the additional year's funding as an incentive to return home.¹⁴⁴ Additionally, Paola de Rose, Canada's former Science Counsellor, states that the EU is still very much preoccupied with its near abroad: "The EU is big, dynamic. It keeps changing and keeps adding. And it is still very preoccupied with sorting out issues on the inside."¹⁴⁵ In this way, it is evident that the Union has yet to maximise its international focus in RS&T.

However, Union capabilities in other areas can provide markers as to how and why EU engagement in international RS&T may develop. For example, the establishment of European economic interdependency was conceived of as a way to secure peace within a continent that had been plagued by conflict for centuries. Added to this, over time, was the establishment of further norms and values throughout the community. As Romano Prodi stated, the European model "works"¹⁴⁶, as underpinned by universal values of peace, liberty, democracy, good governance and respect for human rights. Thus, once consolidated at the internal level, these norms have now been expanded to the international arena in a bid to combat global instability, most typically through the Union's powerful economic competencies.

Science, characteristically internationally cooperative by nature, therefore provides a further mechanism with which the Union can promote those norms deemed

¹⁴⁴ Langbein, June 2007.

¹⁴⁵ Paola de Rose, interview by author, Brussels, Belgium, 10 July 2007.

¹⁴⁶ Manners, "The constitutive nature of values, images and principles in the European Union", 19.

central to improving international society. Moreover, developing a role for itself as a global RS&T player could potentially award the EU greater international influence than even its current level of economic leverage. For example, as Paola de Rose states:

“Science underpins everything. Aspects such as health, transport, communication and the economy are all influenced by technological capacities. The field of science also presents issues for society concerning the environment, conflict and stability. Every problem has its roots in technological capacity and the solutions will too. Science is of paramount importance to life and the world we live in.”¹⁴⁷

Thus, in engaging third parties in RS&T collaboration, the EU stands to gain multiple means with which to diffuse European norms and standards in a variety of areas within the international community.

It is possible to predict that scientific collaboration in environmental issues, for example, could be used to promote European environmental norms within third countries in a variety of ways. More specifically, using Manners’ example of the ways in which EU norms are diffused at the international level, links between scientists could provide grass-roots diffusion through *contagion*, *transference* and the learning processes inherent to the *cultural filter*.¹⁴⁸ The Union’s RS&T engagement with third countries through an official Science and Technological Cooperation (STC) Agreement would qualify as both *procedural* and *overt*, regarding the way the Agreement provides for cooperation on European terms and concerning European priorities. This method of diffusion is also relevant with regard to the presence of high level EU delegates at annual Joint Science and Technology Cooperation Committee (JSTCC) meetings, also provided for by the STC Agreement. Finally, referring to the importance Manners grants to the EU’s ability to lead by ‘virtuous example’, the environment is certainly an area with which the Union

¹⁴⁷ De Rose.

¹⁴⁸ Terms as identified by Manners, “Normative Power Europe”, 244-245.

sets an international precedent and European research into alternative means of energy, for instance, has managed to raise the profile of environmental concerns and their potential solutions internationally.

For the EU in particular, then, de Rose claims that the notion of using science as a way to provide solutions to many of the Union's central priorities, such as health, the environment and complementing activities in developing countries is of utmost importance. In particular, the Union recognises an increased emphasis on international cooperation as the most effective means to solve global problems. More specifically, the Union identifies health, the environment and nutrition as important issues that it wishes to address internationally. This is most obviously demonstrated by the thematic priorities of the newly launched FP7. Not only is this Framework Programme the most internationalised to date, it identifies both European and universal research priorities in tackling health; food, agriculture and biotechnology; information and communication technologies; nanosciences, nanotechnologies, materials and new production technologies; energy; environment; transport; socio-economic sciences and the humanities; and security and space.¹⁴⁹ This impressive list of priorities, which the EU has deemed "open to the world"¹⁵⁰ concerning third-party project involvement, reiterates the point that establishing such a European-led international RS&T programme thus enhances the ability to diffuse norms, as well as scientific standards, to an extended number of areas.

Tied in with increasing international RS&T engagement is the Union's focus on enhancing its own technological capacity. Australia's Brussels-based Senior Science and

¹⁴⁹ ESASTAP, *7th Framework Programme (FP7)*, http://www.esastap.org.za/esastap/eufp/fp7_themes.php (03 September 2007).

¹⁵⁰ Melae Langbein, interview with author, Christchurch, New Zealand, 05 December 2006.

Research Officer, Michaela Bauer, claims that in recent years the EU has been using RS&T to enhance its global competitiveness.¹⁵¹ Additionally, Stephen Payton, former Deputy Head of the New Zealand Mission to the EU, stresses the importance the EU places upon the RS&T capabilities of the US and Japan, and rising competitors such as China and India, as providing the impetus for increased EU activity in this area.¹⁵²

Indeed, Ulrika Mörth states: “The perceived need to strengthen Europe’s economic and technological competitiveness towards the US is a regular feature in EU politics”.¹⁵³ Moreover, she claims that EU action in this field has been spurred on by the emergence of three waves of technology gaps. The first wave occurred during the 1960s, out of which emerged the recognition of the benefit of greater coherence between Europe’s national RS&T policies and EU action here culminated in the adoption of the Framework Programme in 1983. The 1980s saw the emergence of a second technology gap concerning the rise of Japan’s technical prowess. The European response was to implement three major programmes – specifically, the European Strategic Programme for Research and Development in Information Technology (ESPRIT), Research and Development in Advanced Communications Technologies for Europe (RACE) and the European Research Coordination Agency (EUREKA).

The EU is now in the midst of the third wave, where the Union’s international weight is not matched by its research capacity and thus explains the renewed emphasis on the importance of engaging in RS&T. As de Rose states, the EU has realised that it is lagging behind other major players. To solve the problem, the Union hopes to attract

¹⁵¹ Bauer, interview.

¹⁵² Stephen Payton, interview by author, Brussels, Belgium, July 2007.

¹⁵³ Mörth, “Framing an American threat”, 75.

researchers to Europe in the knowledge that it “cannot go alone” and thus partly explaining the Union’s aims concerning its international engagement.¹⁵⁴

The rationale behind the EU’s attempts to enhance its international RS&T capabilities can also be seen as a matter of which role the Union perceives it should adopt. Once primarily an economic giant, the EU gradually extended its reach in setting standards for peace, democracy and good governance within the international community. Here, the Union is once again readjusting its parameters as it comes to realise the capacity of RS&T in enhancing both European and international causes. However, the Union’s rationale for engagement in this area is more than simply an attempt to match American research capabilities. De Rose suggests that the Union is also using science as a means of promoting and positioning its norms as an alternative to those of the US.¹⁵⁵ As Mörth has stated, positioning itself in reference to the US pervades EU politics¹⁵⁶ and de Rose, too, alludes to a certain ‘US phobia’ when it comes to how the EU projects itself as a different kind of player upon the global stage.¹⁵⁷ Moreover, she identifies a distinctly European dislike of US hegemony and geopolitics as informed by material gain and the subsequent exploitation of resources.¹⁵⁸

Building upon this, Ian Welsh states that the United States’ actions in this field operate on the basis of economic liberty, freedom of business and the pursuit of profit.¹⁵⁹ De Rose argues that the Union, in its international cooperation, wants to stress that science does not equal commerce and instead wants to imbed the value which science can

¹⁵⁴ De Rose, interview.

¹⁵⁵ *Ibid.*

¹⁵⁶ Mörth, “Framing an American threat”, 75.

¹⁵⁷ De Rose, interview.

¹⁵⁸ *Ibid.*

¹⁵⁹ Welsh, “Values, science and the European Union”, 65.

bring to social, cultural and humanitarian programmes within society.¹⁶⁰ As a result, Welsh argues that the Union now regards RS&T cooperation as a central component of its activities in which to promote such a distinctively European approach.¹⁶¹

As such, the EU's socio-economic priorities come back into focus. Referring back to de Rose's earlier statement, the EU, in particular, holds the belief that science "underpins everything", thus recognising the capacity for RS&T to provide solutions to global problems. Langbein stresses the notion that, in Europe, there exists a degree of altruism that cannot be found anywhere else, identifying the Union's commitment to ensuring an improved quality of life for the citizens of poor countries and working to provide such regions a secure and stable environment.¹⁶² Susan Baker argues that this perspective, in reference to the EU's persistent stance addressing environmental matters, thus drastically differentiates the EU from the US:

"..The US sees many so-called 'global' environmental problems as not global at all they are problems for others. It sees the promotion of sustainable development as a task primarily for developing countries, not for itself... The EU sets climate change policy in broader social, economic, political and moral terms. As such, the EU has developed a highly principled approach, based upon a developed and articulated set of environmental values..."¹⁶³

Leading on from this, de Rose draws attention to the fact that the Union is therefore pursuing big geopolitical objectives as informed by its perceived role as a principled power. Moreover, she regards the EU's utilisation of science as directly relating to core areas of Union policy. Health research, for example, will supplement the fight against diseases such as AIDS and malaria, whilst assisting the technological development and

¹⁶⁰ De Rose, interview.

¹⁶¹ Welsh, "Values, science and the European Union", 59.

¹⁶² Langbein, interview, June 2007.

¹⁶³ Baker, "Environmental values and climate change", 96.

competitiveness of developing countries will help to address issues concerning poverty and quality of life.¹⁶⁴

Even the EU's more competitive relations with industrialised countries are informed by working towards the achievement of mutual benefits:

“...a collaborative approach to research between the European Union and other countries can generate added value and bring considerable socio-economic benefits to everyone concerned...”¹⁶⁵

In this context, de Rose also mentions the Union's interests in “raising collaborative flags, not competitive ones”.¹⁶⁶ These points of view are therefore important to acknowledge when examining the rationale behind the Union's new RS&T focus. Whilst one aspect of the EU's RS&T motivations is to increase its own level of international competitiveness, we can also observe that RS&T is, in fact, one more tool in the Union's ‘soft diplomacy’ arsenal, assisting in the fulfilment of its role as an ethically responsible international power.

2.5 Conclusion: informing the New Zealand-EU RS&T relationship

This chapter has set about identifying the EU as a normative power whose interests, when placed within a constructivist framework, can be examined with regard to the development of a distinctively European international role as informed by a set of common norms. These interests, as it is argued here, focus on strengthening the international environment through the use of a wide range of non-conventional tools that allow the Union to practise its foreign policy. Seeing the adherence to particular universal norms as central to the achievement of stability and prosperity, Europe therefore works to

¹⁶⁴ De Rose, interview.

¹⁶⁵ European Commission, *International Research and Europe: A Window on the World*, 4.

¹⁶⁶ De Rose, interview.

diffuse these norms amongst international society as consistent with its role as a principled world leader. Thus, the Union's international RS&T policy, as embodied by the Framework Programmes, can be regarded as another tool with which to diffuse European norms and scientific standards and thus offer a distinctively European focus as to the role science can play within society.

This section of the chapter serves as both a conclusion and a prelude to what shall be examined throughout the succeeding research. More specifically, how do the combination of normative power, constructivist theory and the research agenda of the EU, as outlined above, help to explain the specifics of the New Zealand-EU RS&T relationship? Paola de Rose argues, in general, that the increasing relevance of science to society means that science is, or should be, embedded in the foreign policy of any political entity.¹⁶⁷ Moreover, cooperation in the field of science, as typically international in the first place, is an easy way to enhance goodwill within political relationships.¹⁶⁸

With specific reference to the New Zealand-EU relationship, it is clear that cooperation with the Union occurs as a result of the third party's willingness to adhere to the given priorities of the Framework Programmes, of which both reflect and promote European norms. In terms of the two parties' RS&T cooperation, then, values can also be seen playing an important role here. Specifically in regard to science, Melae Langbein observes that New Zealand shares six of the seven thematic priorities of FP6.¹⁶⁹ The Union's role with reference to New Zealand, then, is not so much needed to diffuse norms but to consolidate them, in turn maximising available cooperation with a country that obviously shares many of the EU's own values in this field. De Rose, in turn, echoes

¹⁶⁷ De Rose, interview.

¹⁶⁸ Payton, interview.

¹⁶⁹ Langbein, interview, December 2006.

constructivist thought in identifying the notion of shared beliefs as centrally important to engaging in RS&T collaboration with the EU. In this way, she refers to the Union's perception that research will play a fundamental role in determining a solution to environmental problems, of which constitutes a field of major importance to the EU, and goes on to state that exhibiting a willingness to work with the Union on this and other issues of European importance does much to enhance collaboration.

In its engagement with the EU, then, can New Zealand be seen as acting autonomously? Is New Zealand acting or reacting to the EU's presence in this field? Given its historical background, it is natural that New Zealand shares many aspects concerning the European world view. Indeed, as previously mentioned, the Union's set of core norms are generally regarded as universal, as can be seen in the way in which they have also been enshrined within the work of the UN. The fact stands, however, that without the Union taking a leading role in facilitating international RS&T collaboration, New Zealand engagement at the European level would have been restricted. The country's limited involvement within the Framework Programmes pre-FP6 is testament to that.

However, this is not to say that New Zealand is not proactive in its international RS&T relations. New Zealand enjoys both established and emerging relationships with its near abroad in its collaborative measures with Australia, Asia and the US. Now that Europe has made a degree of its RS&T open to the world, however, New Zealand, as shall be discussed in chapter four, has shown an increased readiness to engage with the EU despite the greater geographical difference. Many factors, of course, influence this new focus and the fact that much of the world's leading research takes place in Europe is

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not the least of them. However, using the conceptual framework allows the ability to perceive of non material influences explaining the recent enhancement of the relationship. It is this final observation that would suggest New Zealand's ability to identify with the nature and norms of the EU has played a significant role in determining the Union as an important partner with which to engage. Most importantly, however, it is the presence of shared norms and beliefs that will ensure this relationship will be an enduring one.

Chapter Three

The development of the EU's capability in RS&T to 2008

3.1 Introduction

Since the creation of the European Coal and Steel Community (ECSC) in 1951, Europe has gradually forged a role for itself in the field of Research, Science and Technology (RS&T) despite the initial absence of a treaty basis to support the development of this capacity.¹⁷⁰ Having established the conceptual framework of this thesis in the preceding chapter, the European Union's (EU) path towards integration in the field of science and technology presents an interesting blend of realist and constructivist thinking as consistent with the changing nature of the Union itself. From the 1950s, for example, competitive positioning and economic security were common themes behind the gradual Europeanisation of RS&T policy.¹⁷¹

However, as the EU's international role expanded, so too did global expectations concerning pan-European activities and responsibilities. Although EU competitiveness in this field is, and shall remain, a prominent feature, it is possible to observe the promotion of distinctly European practices and values, such as the advancement of world-wide living standards and the encouragement of sustainable development, in science and technology.¹⁷² In order to effectively examine the current status of the New Zealand-EU relationship in RS&T, it is thus necessary to understand the complex evolution of European science policy to date. This chapter shall therefore address the motives behind

¹⁷⁰ Mörth, "Framing an American threat, 77.

¹⁷¹ *Ibid*, 75.

¹⁷² Welsh, "Values, science and the European Union", 59.

the gradual incorporation of RS&T into the EU's policy arsenal, which has ultimately led to the development of a pan-European competency in this field.

3.2 The Development of European RS&T Policy to 1990 – Addressing the Technology Gap

(i) The Emergence of the Technology Gap in the 1960s

While research currently constitutes the third largest amount of the EU budget,¹⁷³ the European Commission states that the presence of European-level involvement in research dates back to the 1958 establishment of the Joint Research Centre (JRC).¹⁷⁴ The JRC was created within the European Commission in order to assist the European institutions' policy-making processes by providing independent advice and support with specific reference to science and technology.¹⁷⁵ However, despite this provision, the European institutions' early involvement in RS&T was actually rather inefficiently dispersed. Mörth, Peterson and Sharp all draw attention to the absence of the provision for an RS&T competency within the 1957 Treaty of Rome.¹⁷⁶ Instead, limited scope for European Community (EC) action was provided for under general Article 235:

“...If any action by the Community appears necessary to achieve, in the functioning of the Common Market, one of the aims of the Community in cases where this Treaty has not provided for the requisite powers of action, the Council, acting by means of a unanimous vote on a proposal of the

¹⁷³ Peterson and Sharp, *Technology Policy in the European Union*, 160.

¹⁷⁴ European Commission, *Europe on the Move* (Brussels: Directorate-General for Press and Communication, 2004), 4.

¹⁷⁵ *Ibid.*

¹⁷⁶ Peterson and Sharp, *Technology Policy in the European Union*, 4 and Mörth, “Framing an American Threat”, 77.

Commission and after the Assembly has been consulted, shall enact the appropriate provisions...¹⁷⁷

A pan-European capacity in this field was instead governed by the European Atomic Energy Community (Euratom) Treaty and limited to the region's pre-occupation with nuclear technology, through the pooling of nuclear experience and capabilities.¹⁷⁸ Although Euratom did provide for, and promote, European collaboration in a specific scientific field, its activities remained separate from the EC until the creation of the Merger Treaty in 1965.¹⁷⁹ Moreover, agriculture, coal and steel were the only other fields considered for financing at the European level.¹⁸⁰

However, despite the absence of a specific legal basis for RS&T policy, emerging external factors ensured that industrial and research issues were nevertheless priority concerns for the EC.¹⁸¹ The most influential of these factors concerned the emerging gap between the United States (US) and Europe in the field of technological competitiveness. As briefly referred to in the preceding chapter, Ulrika Mörth's study of the European Commission's various responses to the US-European technology gap demonstrates that this gap manifested itself in three separate waves.¹⁸² These waves inevitably influenced and, indeed, spurred on the continued integration of RS&T into a pan-European capacity. The first wave emerged in the 1960s when the initial US-European technology gap became apparent.¹⁸³ The recurring theme present in the early evolution of the EU's

¹⁷⁷ Wikisource, "Treaty Establishing the European Economic Community (EEC)", [http://en.wikisource.org/wiki/The_Treaty_establishing_the_European_Economic_Community_\(EEC\)](http://en.wikisource.org/wiki/The_Treaty_establishing_the_European_Economic_Community_(EEC)) (05 May 2008) and Mörth, "Framing an American Threat", 77.

¹⁷⁸ Peterson and Sharp, *Technology Policy in the European Union*, 4.

¹⁷⁹ Europa, "Summaries of Legislation – Treaty Establishing the European Economic Community, EEC Treaty", 10 July 2007, http://europa.eu/scadplus/treaties/eec_en.htm (05 May 2008).

¹⁸⁰ Peterson and Sharp, *Technology Policy in the European Union*, 28.

¹⁸¹ Mörth, "Framing an American Threat", 77.

¹⁸² *Ibid*, 75.

¹⁸³ *Ibid*, 77.

RS&T capacity concerns that of Europe's lagging technological competitiveness at the international level.¹⁸⁴ Peterson and Sharp also share Mörth's point of view, observing that increasing debate focusing upon a more active role for the EC in RS&T during the 1960s was attributable to growing concern regarding the European-US technology gap.¹⁸⁵ Sandholtz, for example, states that "...a panicky debate erupted in Europe over technology gaps that left European industries dangerously behind the American competitors."¹⁸⁶

Menéndez and Borrás also identify the influence US prowess in science and technology had over the EC's own development in this field. In their focus on the influential role of ideas in the evolution of the EU's RS&T policy, the authors illustrate a series of conventional explanations accounting for the integration of science and technology as an EU competency. They observe that European involvement in RS&T in the 1960s was, as Mörth, Peterson and Sharp state, a response to the disparity in performance between Europe and the US.¹⁸⁷ Building upon this, the concept concerning the creation of a 'European Technological Community' was proposed, with the notion to develop common research policies among the European Economic Community (EEC) members.¹⁸⁸

Buoyed by such proposals, in 1967 the EEC Council of Science Ministers was tasked to investigate collaborative potential within the transport, oceanography, metallurgy, environmental, meteorology, data processing and telecommunications

¹⁸⁴ *Ibid* 75.

¹⁸⁵ Peterson and Sharp, *Technology Policy in the European Union*, 28.

¹⁸⁶ W. Sandholtz, *High-Tech Europe – The Politics of International Cooperation* (Berkeley: University of California Press, 1992), as quoted in Mörth, "Framing an American Threat", 77.

¹⁸⁷ Menéndez and Borrás, "Explaining changes and continuity in EU technology policy".

¹⁸⁸ Peterson and Sharp, *Technology Policy in the European Union*, 28.

industries.¹⁸⁹ The following year, as a direct result of this initiative, 40 collaborative projects were proposed by interested European companies.¹⁹⁰ Even more significant to the promotion of European-level RS&T activities, however, was the 1971 formation of the Cooperation in Science and Technology (COST) programme. Membership included a representative from the Commission in addition to the admission of European Organisation for Economic Cooperation and Development (OECD) Member States. Although separate from the Community, and funded nationally, this programme nevertheless demonstrated the potential for advancing European-level research and, in later years, achieved just that when membership was extended to Eastern and Central European countries in 1989.¹⁹¹

Adding to the aforementioned US influence upon early European activity in the field of science and technology, Menéndez and Borrás identify the tendency for researchers of this topic to attribute the role of key individuals with the continued development of a pan-European capacity in RS&T in the 1970s.¹⁹² Indeed, Peterson and Sharp stress the impact that French President François Mitterrand's recommendations for the promotion of alliances between European companies had upon renewed Community involvement in industry, science and technology.¹⁹³ Similarly, they also identify Etienne Davignon's role as Commissioner for Industry from 1977 to 1985 as "an important step on the road to new European programmes"¹⁹⁴. Under Davignon's leadership, by encouraging European companies to relinquish their focus on national niches and

¹⁸⁹ *Ibid*, 31.

¹⁹⁰ *Ibid*.

¹⁹¹ *Ibid*, 31-32.

¹⁹² Menéndez and Borrás, "Explaining changes and continuity in EU technology policy", 5.

¹⁹³ Peterson and Sharp, *Technology Policy in the European Union*, 69.

¹⁹⁴ *Ibid*, 6 and 70.

collaborate, the Commission was able to forge a more coherent approach to RS&T. In turn, these developments culminated in the creation of the European Strategic Programme for Research in Information Technology (ESPRIT).¹⁹⁵

However, despite being faced with the prospect of lagging behind the US in scientific and industrial competitiveness, the initiative to forge the envisioned “technological community” at the European level was not realised. Peterson and Sharp argue that it was not until the end of the 1970s, with the emergence of European-wide crises in the steel, ship-building and textiles industries, that a more active role for the European Commission in RS&T was embraced.¹⁹⁶ They go on to state that, however, these early attempts to integrate a degree of RS&T policy into the workings of the EC were relatively fruitless: “...Attempts to develop collaboration on a Community basis, promoted by the Commission, had largely disappointing results...”¹⁹⁷ Although attempting to forge a more coherent European technological strategy to close the emerging technology gap was promoted by the European institutions, in effect, the opposite occurred. Member States instead reverted to pursuing what Peterson and Sharp term a policy of ‘techno-nationalism’ by concentrating their research efforts purely at the national level.¹⁹⁸

Stagnating attempts to step up Community activity in the field of RS&T thus reflected popular realist notions based upon state interest, such as the challenges presented by tension between governments and varying national policies and priorities.¹⁹⁹ However, as Peterson and Sharp observe, the narrow focus of Member States on national

¹⁹⁵ *Ibid.*

¹⁹⁶ *Ibid.*, 30.

¹⁹⁷ *Ibid.*, 41.

¹⁹⁸ *Ibid.*, 4-5.

¹⁹⁹ *Ibid.*, 41.

interests and individual capacities in RS&T actually exacerbated the US-European technology gap: "...Far from promoting the development of new technologies, 'national champion' policies fragmented markets and isolated companies from competition..."²⁰⁰

As a result, by the 1980s, Member States and the European institutions alike recognised the need for a change of approach in their attempts to match the capacity of American research and development activities.

(ii) External Influences and Changing Tactics in the 1980s

Due to the failure of the national champion policies that were adopted to address this initial challenge, a secondary wave of competitive positioning occurred during the 1980s.²⁰¹ This second rush of activity was a response not only to the challenge from the US but also a combination of other external factors. Mörth identifies the quick rise of Japan in the field of RS&T as the catalyst for the renewed promotion of a European research capacity.²⁰² Peterson and Sharp, too, emphasise this point:

"...Japan and other South-East Asian countries emerged as strong, export-oriented economies as innovation became the focal point of competition, with the frequent launch of new models accelerating product cycles and increasing research and development costs..."²⁰³

Whilst this was indeed an important factor, however, the technological challenge from Japan and ongoing competition versus the US were only two of many factors spurring on the European institutions' 'second wind' in its attempts to forge policy on RS&T at the European level.

²⁰⁰ *Ibid*, 4-5.

²⁰¹ *Ibid*, 5-6 and Mörth, "Framing an American Threat", 77-78.

²⁰² Mörth, "Framing an American Threat", 77.

²⁰³ Peterson and Sharp, *Technology Policy in the European Union*, 68.

By the 1980s it had become evident what worked with respect to European RS&T and what did not. As already outlined, the national champion policies pursued in the 1960s proved detrimental to European technological competitiveness in the global arena. Similarly, in terms of Europe's preoccupation in the field of nuclear technology, collaboration was not consistent and reflected tensions between respective national interests.²⁰⁴ On the other hand, the 1978 creation of the EC fusion programme, the Joint European Torus (JET)²⁰⁵, Airbus and the European Space Agency (ESA) all demonstrated positive possibilities to extend the degree of RS&T being conducted at the European level:

“...Each illustrated the strength and utility of functionally specific frameworks for collaboration in sectors where go-it-alone national approaches were simply not viable...”²⁰⁶

Thus, the first wave of competitive positioning proved to be a difficult learning process within the Europeanisation of RS&T. The second wave in the 1980s therefore saw the European institutions examine both successful and unsuccessful ventures in this field and attempt to define a clearer, more coherent role for European science and technology. As Peterson and Sharp state, although the first wave in the experimentation with European RS&T produced relatively few successes, such initiatives nevertheless provided valuable guides in the development of future collaborative programmes.²⁰⁷

Also of particular importance to RS&T developments in the 1980s was the economic crisis in 1983, which forced France to rethink its focus on purely national research. As one of the larger RS&T players in Europe, the fact that France chose to

²⁰⁴ *Ibid*, 35.

²⁰⁵ EFDA-JET, “The World's Largest Nuclear Fusion Research Facility”, 2008 <http://www.jet.efda.org/> (12 May 2008).

²⁰⁶ Peterson and Sharp, *Technology Policy in the European Union*, 42.

²⁰⁷ *Ibid*, 44.

abandon policies which centred on the notion of the national champion, and instead throw its support behind the Commission, did much to promote the possibility of a Community competence in the field of science and technology.²⁰⁸ This change of focus led policy-makers within the European institutions to readdress the EC's role in advancing European research, seeing in the creation of the working group on Forecasting and Assessment in Science and Technology (FAST).²⁰⁹ The working group not only released a series of reports in priority areas of work and employment, the information society and the biosociety, but also proposed a clearer role for the Community in RS&T in general:

“...first, to achieve a certain collaboration and division of labour in order to pursue jointly a range of options; and secondly to carry out those specific programmes where there are evident economies of scale...”²¹⁰

Thus, a combination of shifting attitudes on the part of the EC Member States and a general acknowledgement of the failure of earlier initiatives allowed the gradual expansion of the Community's involvement in the promotion of European RS&T.

Peterson and Sharp also observe that the consolidation of the EC's involvement concerning issues in science and technology benefitted from the general boom in European integration during the late 1980s. The authors identify factors such as progress made in the liberalisation of the internal market, the economic upturn that occurred during this period and the collapse of communism as important in consolidating an expanded competence for the EC in a number of areas, including RS&T. This development manifested itself most visibly through the EC's proposal to establish a programme based upon cross-border collaboration of European companies and research

²⁰⁸ *Ibid.*, 69.

²⁰⁹ *Ibid.*

²¹⁰ *Ibid.*

institutes and the gradual deconstruction of barriers to such cooperation.²¹¹ Consequently, the concept of the Framework Programme was born, whereby Member States were required to unanimously agree upon proposed budgets and EC RS&T objectives before the initiative could be launched.²¹²

(iii) The Creation of the Framework Programme and EUREKA

The first of the Framework Programmes was thus launched in 1984 with the initial objective to combine the efforts of the JRC with other collaborative European projects. Spanning from 1984 to 1987, the budget for the First Framework Programme (FP1) was set at €3.75 billion.²¹³ However, most of the outlined budget was allocated to JRC and ESPRIT projects and, therefore, this first instalment of the Framework Programmes was particularly limited in scope.²¹⁴ Moreover, Peterson and Sharp observe that, despite the increasing critical mass of Member States pushing for a degree of Community management over scientific and technological affairs, the launch of this first programme was initially met with strong resistance from some of Europe's more significant players in RS&T.²¹⁵ Britain and Germany, for example, opposed the creation of a leadership role for the EC in this field in favour of protecting their respective competitiveness in RS&T at the national level.²¹⁶ This state of affairs remained the norm during successive Framework Programme instalments. In preparation of the launch of the Second Framework Programme (FP2), for instance, the proposed €10 billion budget was rejected

²¹¹ *Ibid.*, 80.

²¹² *Ibid.*, 80-81.

²¹³ During this period, the European Currency Unit (ECU) was used. However, for the purpose of consistency within this thesis, all monetary amounts are converted to the Euro.

²¹⁴ *Ibid.*, 81.

²¹⁵ *Ibid.*

²¹⁶ *Ibid.*

and reduced to €5.4 billion due to influential opposition from these two players.²¹⁷ This example therefore illustrates that, despite the recognition of a role for the EC in RS&T, national interests still held sway over attempts to forge new policies in this area.

Nevertheless, what collaboration these early Framework Programmes did encourage served to enhance the potential for the expansion of such cooperation in the future. Cooperation in this field was also ushered along by the creation of EUREKA in 1985. Although unaffiliated with the EC, this pan-European funding and project coordinating institution helped contribute to the promotion of European RS&T cooperation by encompassing Community and non-Community states alike in its membership. In addition to the EC12, membership in 1985 was extended to Austria, Finland, Norway, Sweden, Switzerland and Turkey. In 1992, EUREKA became one of the first Western European groupings to include Central and Eastern European countries such as Hungary, Slovenia, the Czech Republic, Poland, Russia and Romania within its remit.²¹⁸

In terms of the Framework Programmes, the third (FP3) not only saw another increase in budget to €6.6 million but also introduced the Human Capital and Mobility scheme. This venture aimed to promote ease of cross-border movement for European researchers, which was considered beneficial for the development of Europe's RS&T capacity.²¹⁹ The implementation of such collaborative programmes clearly demonstrated the benefits provided by initiatives promoting an international focus. Member States involved in such cross-border cooperation could not deny the logic of cost-cutting, the

²¹⁷ *Ibid.*

²¹⁸ "EUREKA! A Network for Market Oriented R&D", 2008, <http://www.eureka.be/about.do>, (14 May 2008) and Peterson and Sharp, *Technology Policy in the European Union*, 89-90.

²¹⁹ Peterson and Sharp, *Technology Policy in the European Union*, 83.

avoidance of duplication and the networking opportunities that the Framework Programmes allowed.²²⁰ Thus, the European institutions' promotion of the Framework Programme persevered and even expanded in the face of some Member States' dissent. As a result, the Community's increasing involvement in collaborative research gradually became "...an accepted feature of Europe's industrial landscape..."²²¹

(iv) The Single European Act

The fact that pan-European involvement in RS&T was becoming increasingly acceptable, and even expected, was most clearly demonstrated by the provision of a legal mandate for the EC's expanding role in this field. 1986 marked the introduction of the Single European Act (SEA), which established the goal to complete the single European market within a five year period. In addition, within the treaty's Title VI, the SEA granted the Community a legal competence in RS&T for the first time.²²² More specifically, article 130f of this title sets the overarching goal for the EC as:

"...The Community's aim shall be to strengthen the scientific and technological basis of European industry and encourage it to become more competitive at the international level..."²²³

Moreover, article 130g set out the required actions on the part of the Community in order to recognise this aim:

"...(a) implementation of research, technological development and demonstration programmes, by promoting cooperation with undertakings, research centres and universities;

²²⁰ *Ibid*, 86.

²²¹ *Ibid*, 113.

²²² *Ibid*, 8 and 80-81.

²²³ "The Single European Act; Title VI; Article 130f", 17 February 1986, http://ec.europa.eu/economy_finance/emu_history/documents/treaties/singleeuropeanact.pdf (7 May 2008).

- (b) promotion of cooperation in the field of Community research, technological development, and demonstration with third countries and international organisations;
- (c) dissemination and optimisation of the results of activities in Community research, technological development, and demonstration;
- (d) stimulation and the training and mobility of researchers in the Community...²²⁴

Hand in hand with these provisions, article 130i also legally entrenched the Framework

Programmes and their continued development within the EC's RS&T responsibilities:

- “...1. The Community shall adopt a multiannual framework programme setting out all its activities. The framework programme shall lay down all the scientific and technical objectives, define their respective priorities, set out the main lines of activities envisaged and fix the amount deemed necessary...
- 2. The framework programme may be adapted or supplemented, as the situation changes...²²⁵

The SEA thus established a more clearly cut path for the further development of the EC's RS&T policies in the 1990s. However, as we shall see in the following section, emerging internal and external factors greatly influenced the evolution of Europe's RS&T capacity during this period.

3.3 The Emergence of a Normative European RS&T Policy from 1990

(i) RS&T in the Globalised World

With the collapse of the Soviet regime, the 1990s ushered in a real period of global change. The dissolution of this major international player inevitably changed perceptions concerning the nature of national security as well as international politics in general.²²⁶

Peterson and Sharp, for example, view the end of the Cold War as a turning point

²²⁴ “The Single European Act; Title VI; Article 130g”.

²²⁵ “The Single European Act; Title VI; Article 130i”.

²²⁶ Peterson and Sharp, *Technology Policy in the European Union*, 17.

concerning preoccupations with traditional military security. This period saw civilian technologies and their potential applications to the notion of “economic security” emerge as new priority areas of innovation:

“...The European Union’s role to promote economic security and collaborative research programmes such as the Framework Programme and EUREKA became viewed as general tools in the efforts of European governments to promote economic competitiveness and, ultimately, economic security...”²²⁷

Additionally, defined as the process by which external pressures increasingly influence individual states and institutions to adopt a degree of interdependence in order to stay internationally competitive, globalisation had also taken hold by the 1990s.²²⁸ Moreover, Kluth and Andersen state that by this period the utility of international technological collaboration had become clearer than ever: “...Autarky is impossible in science and technology: all firms need external sources of advice, information and technical collaboration...”²²⁹ Peterson and Sharp’s argument supports this point of view, as they identify globalisation’s effect on the erosion of states’ control over economic and technology policy as a result of the inevitable liberalisation of markets.²³⁰ Kluth and Andersen claim that globalisation in turn gave rise to the emergence of what they term ‘techno-globalism’, which is defined as the global exploitation of technology, global technological cooperation and the global generation of technology.²³¹

The emergence of techno-globalism ensured not only the expansion of European RS&T but the internationalisation of this field in general. This development shall be

²²⁷ *Ibid.*

²²⁸ Michael Kluth and Jørn Andersen, “Pooling the technology base: The globalization of European research and technology organizations”, in *Technology, Innovation and Competitiveness*, eds. Jeremy Howells and Jonathan Michie (Cheltenham: Edward Elgar, 1997), 65.

²²⁹ Kluth and Andersen, “Pooling the technology base”, 71-72.

²³⁰ Peterson and Sharp, *Technology Policy in the European Union*, 17-18.

²³¹ Kluth and Andersen, “Pooling the technology base”, 66.

discussed in further detail in section 3.4 of the current chapter. In terms of the present focus on the Europeanisation of science and technology, the European institutions had successfully managed to navigate Member States away from protectionist RS&T in favour of a more international focus. Consequently, by the 1990s, collaboration at the European level had become well established.²³² This shift in approach helps illustrate the basic importance of facilitating cross-border cooperation as consistent with the notion that collaboration begets collaboration. For example, Peterson and Sharp draw attention to the long-term benefit of encouraging cooperation between young researchers in the 1980s and 1990s in pointing out that this group will, in turn, lead scientific and technology development in the 21st Century. More importantly, these researchers would thus already possess fruitful collaborative linkages as a result of Framework Programme participation.²³³ Moreover, a Commission study conducted between 1992 and 1994 revealed that researchers themselves ranked the provision of collaborative opportunities as one of the most important factors behind their participation in the Framework Programmes.²³⁴

Nevertheless, despite the consolidation of the Community's role in facilitating collaborative research, Mörth claims that such collaboration was still hindered by the inability on the part of both the European institutions and Member States to develop RS&T policies that would complement each other at the national level. In addition, she also draws attention to the problems created by the separation of RS&T policy from other relevant areas. For example, Cini identifies the close connection between technology,

²³² Peterson and Sharp, *Technology Policy in the European Union*, 83-85.

²³³ *Ibid*, 125.

²³⁴ *Ibid*, 192-193.

trade, competition and economic policies,²³⁵ whilst Mörth goes on to conclude that Europe's initial inability to integrate these policies hindered the conversion of science and technology developments into commercial gain.²³⁶ In attempting to address this issue, the European Commission released the 1993 *White Paper on Growth, Competitiveness and Employment*.²³⁷ Seen as a particularly groundbreaking document in the evolution of European RS&T, the *White Paper* recognised the need to link research to economic growth and employment in order to promote competitiveness at the European level.²³⁸ The *White Paper's* content was then built upon with the publication of the 1995 *Green Paper on Innovation*²³⁹ which proved to be the seminal document around which an entirely new policy frame was formed. For example, Menéndez and Borrás draw attention to the *Green Paper's* objective to re-align separate yet complementary policy areas and thus forge a more coherent policy around the conception of innovation.²⁴⁰ The integration of such policy areas shall be discussed in the following section.

More recently, the EU has taken further steps in forging a comprehensive role for itself in the field of RS&T. The creation of the Lisbon Agenda in 2000 saw EU heads of state pledge to make the Union "...the most competitive and dynamic knowledge-driven economy by 2010..."²⁴¹ Furthermore, in 2002, the Barcelona European Council set state targets at three per cent of Gross Domestic Product (GDP) for research and innovation in

²³⁵ M. Cini and L. McGowan, *Competition Policy in the European Union* (London: Macmillan, 1998), as referenced in Mörth, "Framing an American Threat", 79.

²³⁶ Mörth, "Framing an American Threat", 79.

²³⁷ European Commission, *White Paper on Growth, Competitiveness and Employment* (Brussels, 1993).

²³⁸ Menéndez and Borrás, "Explaining changes and continuity in EU technology policy", 13.

²³⁹ European Commission, *Green Paper on Innovation* (Brussels, 1995).

²⁴⁰ Menéndez and Borrás, "Explaining changes and continuity in EU technology policy", 13.

²⁴¹ EurActiv.com, "Lisbon Agenda", *EU Treaty & Institutions*, 21 May 2007, <http://www.euractiv.com/en/agenda2004/lisbon-agenda/article-117510> (14 May 2008).

an attempt to refocus EU states on the importance of RS&T investment.²⁴² In the same year, the Sixth Framework Programme (FP6) was launched, with greater opportunities for third country participation thanks to the development of the Marie Curie mobility actions. These actions were created out of FP6's Human Resources and Mobility activity, with a budget of €1,580 million, which seeks to facilitate the mobility of eligible researchers and promote excellence in European research.²⁴³

In addition, the year 2000 also saw the creation of the Union's European Research Area (ERA). The Community Research and Development Information Service (CORDIS) claims that the birth of the ERA arose out of:

“...the realisation that research in Europe suffers from three weaknesses: insufficient funding, lack of an environment to stimulate research and exploit results, and the fragmented nature of activities and the dispersal of resources...”²⁴⁴

The ERA therefore aims to ensure better efficiency in the use of resources and to facilitate cooperation between participating nations by allowing easy transferral of knowledge, technology and man power.²⁴⁵ Thus, a renewed attempt has been made to ensure that the ERA is focused on priority RS&T areas, mirroring the seven thematic priorities of FP6, with attention paid to genomics and biotechnology for health, information society technologies, nanotechnologies, aeronautics and space, food safety and health risks, sustainable development and citizens and governance in a European

²⁴² Europa, “2002 – Communication ‘More Research for Europe’”, *Investing in European Research: Towards 3% of GDP*, http://ec.europa.eu/invest-in-research/action/2002_communication_en.htm (16 May 2008).

²⁴³ Europa, “The Marie Curie Actions: An Overview”, *Marie Curie Actions – Human Resources and Mobility Activity*, 20 January 2006, http://ec.europa.eu/research/fp6/mariecurie-actions/action/level_en.html (06 May 2008).

²⁴⁴ Cordis, “ERA – The Concept”, *European Research Area*, <http://cordis.europa.eu/era/concept.htm> (06 May 2008).

²⁴⁵ *ibid.*

knowledge-based society.²⁴⁶ In terms of funding, EU Framework Programmes are to be used as the financial instrument required to maintain this new addition to the EU's research and development plans. For example, the Europa web site claims "...The EU's Framework Programme for Research and Technological Development is a major tool to support the creation of the European Research Area..."²⁴⁷ Thus, it is evident that the EU has recently been taking concrete steps to address its unsatisfactory past performance in RS&T.

(ii) The Integration of RS&T into the EU Policy Arsenal

It is evident that competitive positioning was still a concern for Europe as it came to grips with this new era of globalisation. Collaboration at the European level was not just required to enhance Europe's scientific and technological capacity but, more importantly, necessary to survive in the post-industrial world.²⁴⁸ However, although Mörth considers the 1990s to mark the third wave of technology gap 'fever', the author observes that the challenge and European response that characterised this third wave was markedly different to the previous two. For example, as mentioned above, she states that during this period Europe was more concerned with addressing unemployment issues and promoting internal growth and stability. Thus, Mörth considers this third wave in the transformation of EU technology policy as complementing the Union's evolving presence as a civilian power.²⁴⁹ The provisions of the Treaty of Maastricht, ratified in 1993, help illustrate this

²⁴⁶ Wikipedia: The Free Encyclopedia, s.v. "European Research Area", 5 June 2008, http://en.wikipedia.org/wiki/European_Research_Area (5 June 2008).

²⁴⁷ European Commission "Sixth Framework Programme 2002-2006", *Research*, http://ec.europa.eu/research/fp6/index_en.cfm?p=0 (06 May 2008).

²⁴⁸ Peterson and Sharp, *Technology Policy in the European Union*, 225.

²⁴⁹ Mörth, "Framing an American Threat", 78.

transformative process. The Treaty expanded upon the legal competencies granted by the SEA and allowed the further expansion of an EU role in science and technology in order to promote competitiveness at the international level.²⁵⁰ Moreover, the Treaty not only set out RS&T as a priority area for the EU but also expanded its remit from a primarily industrial focus to the development of a broader policy which would support other European priorities and objectives.²⁵¹

This, in turn, leads into Menéndez and Borrás' research regarding the different nature of EU RS&T policy in the 1990s. As referred to earlier, these authors identified particular trends in existing literature concerning the evolution of Europe's science and technology policy. Addressing the technology gap vis-à-vis the competitive challenge from the US and Japan and the influence of individuals within the Commission falls into what Menéndez and Borrás consider to be conventional explanations in this field of study.²⁵² Moreover, these explanations also fit within an overarching theme concerning the pursuit of the national interest, thus reflecting the kind of realist point of view that dominated international relations theory until the collapse of the Soviet Union. However, Menéndez and Borrás claim that such explanations cannot account for the shift in Europe's attitude towards RS&T policy within the changing international environment of the 1990s. The authors claim that the EU has now moved from the formation of interest-based technology policies to the development of a comprehensive innovation policy, dominated by the role of ideas.²⁵³

²⁵⁰ Peterson and Sharp, *Technology Policy in the European Union*, 8.

²⁵¹ Menéndez and Borrás, "Explaining changes and continuity in EU technology policy", 11.

²⁵² *Ibid*, 5.

²⁵³ *Ibid*, 1.

Furthermore, this shift from the original structure of the EU's RS&T activity also reflected the changing focus of science and technology itself. As aforementioned, Mörth considers that the 1990s saw Europe working to promote its international competitiveness by addressing internal factors such as unemployment.²⁵⁴ This therefore marked the path towards the development of European RS&T to benefit the social need, complementing other EU priorities such as the contribution to solutions on environmental, health, regional development and societal issues. Peterson and Sharp state that the Treaty of Maastricht allowed, for the first time, these other EU-driven policies to become linked with European RS&T.²⁵⁵ In this way, as the development of a Community competence in RS&T had benefitted from favourable attitudes towards general European integration during the 1980s, science and technology in turn assisted the further integration and cohesion of other policy areas.

Examining the gradual incorporation of social issues within European RS&T in the 1990s, it is possible to observe the way in which RS&T policy begins to fit within the conceptual framework set out in the previous chapter. Menéndez and Borrás state that the emergence of Europe's innovation policy is attributable to the combined ideas and learning processes of policymakers within the European institutions. They consider the work on the *Green Paper on Innovation* as a response to new theories on RS&T and the role it has to play within the new structure of the knowledge-based economy.²⁵⁶ This development can be regarded as reflecting constructivist predictions in that it is evident that the EU's role as an RS&T player has gradually been reshaped within an evolving

²⁵⁴ Mörth, "Framing an American Threat", 78.

²⁵⁵ Menéndez and Borrás, "Explaining changes and continuity in EU technology policy", 10-11 and Peterson and Sharp, *Technology Policy in the European Union*, 124-126.

²⁵⁶ Menéndez and Borrás, "Explaining changes and continuity in EU technology policy", 16.

social framework. In determining each response to both external and internal factors influencing the effectiveness of European RS&T, such responses have been fluid rather than fixed, dependent on a logic of “appropriateness” and reflecting the varied identities of the evolving European institutions.²⁵⁷ Moreover, Europe’s recognition of the complementarities in particular policy areas gave rise to the application of science and technology in addressing pan-European economic, social and environmental issues. In effect, utilising RS&T served to expand the Union’s set of normative policy tools and therefore its capabilities as a normative international actor.

3.4 The Increasing Internationalisation of European RS&T Policy and the Seventh Framework Programme

The most recent step in the evolution of the EU’s RS&T policy has been that of its internationalisation. Just as the European institutions had recognised the benefits of cross-border collaboration as a result of Member States’ detrimental experiments in nationalistic RS&T in the 1960s and 1970s, the post-industrial world required an even greater degree of cooperation in order to minimise expense and risk. Peterson and Sharp, for example, draw attention to the utility of international partnering:

“...Competition increases and firms focus on innovation, which in turn drives the pace of technological change. As it accelerates, product life cycles decrease, and research and development costs and uncertainties increase. Even large multinationals hesitate to go it alone... it makes sense not to make irreversible decisions, to limit exposure to risk and to share heavy upfront costs that may not be retrieved. Strategic partnering provides a mechanism that meets all these requirements...”²⁵⁸

²⁵⁷ Mark A. Pollack, “Theorizing EU Policy-Making”, in *Policy-Making in the European Union*, 5th edition, eds. Helen Wallace, William Wallace and Mark A. Pollack (Oxford: Oxford University Press, 2005), 22-23.

²⁵⁸ Peterson and Sharp, *Technology Policy in the European Union*, 54.

A degree of internationalisation had been present in previous Framework Programmes but the Union's activities in this area were initially limited. Indeed, it was not until ten years after the Framework Programme's inception, with the launch of FP4 in 1994, that Europe specifically began extending opportunities to third countries.²⁵⁹ For example, the Council Decision of 23 November 1994, concerning cooperation with third countries in the field of research and development, states:

“...the strengthening of the scientific and technological base of the European Union also depends on an adequate level of cooperation with third countries and international organisations, based on the principle of mutual interest; whereas such cooperation may enhance the competitiveness of European industry...”²⁶⁰

Moreover, in terms of the global benefits of international cooperation, the document also mentions that:

“...greater cooperation in the field of science and technology can help to meet major international challenges such as health, nutrition and environmental protection and can contribute to solving regional and global problems...”²⁶¹

In addition to officially recognising the importance of such collaboration, FP4 also made use of a specific frame to enhance international cooperation, known as the ‘Second Activity’ or ‘Cooperation with third countries and international organisations’ (INCO).²⁶² Unlike the first, third and fourth activities, which provided potential cooperation opportunities that allowed Community or associated states the option of partnering with a non-Community country, the second activity stated that partnership must compulsorily

²⁵⁹ *ibid.*

²⁶⁰ European Commission, “Council Decision of 23 November 1994: adopting a specific programme of research and technological development, including demonstration in the field of cooperation with third countries and international organizations (1994 to 1998)”, in *Framework Programmes for Research (1994-1998) and their Implementation*, (Luxembourg, ECSC-EC-EAEC, 1995), 327.

²⁶¹ *ibid.*

²⁶² European Commission, “International Cooperation”, in *Research and Technology Development Activities of the European Union: Annual Report 1995*, (Luxembourg, ECSC-EC-EAEC, 1996), 12.

include at least once partner from a non-Community country.²⁶³ Although this initial programme was only extended to Central and Eastern European countries (CEECs), the New Independent States (NIS) of the former Soviet Union and developing countries,²⁶⁴ this activity kick started Europe's focus on the necessity of third country participation in research and development programmes and entrenched such cooperation as an important aspect of EU RS&T policy.

It was not until the launch of the Sixth Framework Programme (FP6) that European research became "open to the world".²⁶⁵ Within this Programme, any 'legal entity', such as a research institute, university, company or individual person, from a third country was eligible to participate in FP6 projects provided that the minimum project consortium composition was satisfied.²⁶⁶ However, as the Lisbon Agenda set forth in 2000, the main focus of FP6 remained the consolidation of European RS&T with a focus on the ERA²⁶⁷ in the hope of realising the agreed objective to become the world's leading knowledge-based economy by 2010.²⁶⁸ Thus, the completion of the internationalisation of the Framework Programmes had yet to be realised.

Nevertheless, since FP4, the level of internationalisation in EU RS&T had intensified, occurring due to a range of influential factors. As mentioned above, the EU's goal to become the world's most competitive knowledge-based economy indicates that

²⁶³ European Commission, "International Scientific Cooperation Without Frontiers", in *Cooperation with Third Countries and International Organizations in the Field of Research and Technology Development*, (Luxembourg, 1996), 17.

²⁶⁴ *ibid*, 18.

²⁶⁵ European Commission, *The European Union's Sixth Framework Programme for Research and Technological Development is Open to the World*, <http://www.efbweb.org/downloads/Final%20Nature%20Ad%20p1.pdf> (12 May 2008).

²⁶⁶ European Commission, *The 6th Framework Programme in brief*, ftp://ftp.cordis.europa.eu/pub/documents_r5/natdir0000040/s_1926005_20030402_150735_6FPL021926en.pdf (12 May 2008).

²⁶⁷ Cordis, *Sixth Framework Programme*, <http://cordis.europa.eu/fp6/dc/index.cfm?fuseaction=UserSite.FP6HomePage> (12 May 2008).

²⁶⁸ European Commission, *Europe on the Move*, 2.

competitive positioning vis-à-vis other large RS&T players is, and will remain, a driving factor influencing European developments in science and technology. However, the recurring theme found in Commission publications concerning research and its international dimension is that of the emergence of global problems requiring global solutions:

“...it is becoming clearer day by day that vital problems – in particular those involving health, the environment and nutrition – can be effectively solved only at the global scale...”²⁶⁹

The increasing pace of technological progress, the rising costs of research and the ease with which the information society allows the exchange of ideas are also referred to as factors influencing the Union's efforts to internationalise its RS&T programmes.²⁷⁰

The Union's current RS&T venture, the Seventh Framework Programme (FP7), has been touted as the ‘flagship’ in the history of EU collaboration in this field. Set to span from 2007 to 2013 and equipped with a budget of €53.2 billion, it is not only the EU's largest Framework Programme to date but also its most internationalised.²⁷¹ FP7 thus represents the tipping point from the previous focus on Europeanised RS&T collaboration to comprehensive international cooperation in this field. Following on from FP6, the new Framework Programme in part represents a continuation of its predecessor. To ensure that European-led research retained the momentum it gathered during FP6, the thematic priorities promoted within FP7 are compatible with those set out in the

²⁶⁹ European Commission, *European Research Open to the World. Confirming the International Role of Community Research* (Luxembourg: Office for Official Publications of the European Communities, 1998), 5.

²⁷⁰ European Commission, *Cooperation with third countries*, 4.

²⁷¹ European Commission, *European Research in Action: The Seventh Framework Programme (FP7)* (Brussels: Europa Publications Office, 2007), 2.

preceding Programme.²⁷² In fact, the Union's research priorities remain unchanged, with only one new addition in the field of space and security.²⁷³ However, this is where the Programme's similarities with FP6 end. Instead of being divided in terms of thematic priorities, FP7 is sectioned into four working areas. 'Cooperation', 'Capacities', 'People' and 'Ideas' constitute the titles of these specific programmes and, in a further departure from previous Framework Programme structures, collaboration at the international level is built into each respective area.²⁷⁴

The EU has thus aimed to maximise the outcomes of FP7's internationalisation by ensuring its strategic implementation across all sectors of the Programme. For example, the European Commission states that the 'Cooperation' programme, as signalled by its title, provides the opportunity for third country researchers to engage with their European counterparts in the Programme's selected thematic areas. 'Capacities', in turn, not only works to strengthen the research capabilities of the EU but of other priority regions also. A strong international dimension is naturally present within the 'People' programme, in its facilitation of cross-border research mobility. Finally, 'Ideas' promotes excellence in the field of frontier research and thus the programme seeks to attract such excellence both internally and externally.²⁷⁵ Sieglinde Gruber, head of communication for the

²⁷² INCITE, *EU Framework Programme: Research Themes in FP7*, http://www.inciteproject.org/thematic_profiles.asp (14 May 2008).

²⁷³ FP7's other priorities, as referred to in the fourth chapter of this dissertation, focus on the information society; health; transport; nanosciences, nanotechnologies materials and new production technologies; energy; environment; food, agriculture and biotechnology and finally socio-economic sciences and the humanities. Sourced from EurActiv.com, "FP7: Simplification and more business orientation", <http://www.euractiv.com/en/science/fp7-simplification-business-orientation/article-137599> (20 May 2008).

²⁷⁴ European Commission, *A new approach to international scientific and technological cooperation in the 7th Research Framework Programme (2007-2013) and 7th Framework Programme of the European Atomic Energy Community (Euratom) (2007-2011)* (Brussels, 2007), 4.

²⁷⁵ *Ibid.*, 7.

international dimension of FP7, thus states that international collaboration has, in effect, been 'mainstreamed' throughout the workings of the Framework Programme.²⁷⁶

In addition to non-associated third countries' eligibility to participate in each of these working areas, FP7 also promotes themes expressly targeted for such cooperation. For example, selected activities within the thematic priorities of the 'Cooperation' programme have also been specifically targeted as areas for collaboration with third countries.²⁷⁷ Linked in with this is the presence of the Specific International Cooperation Actions (SICA), which constitutes another new initiative particular to FP7. This venture was introduced as a means to promote the participation of non-associated third countries in FP7 and enhance the level of internationalisation within the 'Cooperation' programme.²⁷⁸ The 'Capacities' programme, too, includes one dedicated internationally cooperative activity amongst the seven that are generally open to all non-associated third countries. This specific initiative is solely targeted towards international cooperation with the EU's designated International Cooperation Partner Countries (ICPC) and seeks to facilitate dialogue and information exchange in RS&T with these selected partners.²⁷⁹

Gruber thus identifies two avenues for potential third country engagement with the EU in FP7. She refers to the first of these as 'passive', in the sense that non-associated third countries are eligible to participate in all areas of the Framework Programme. With regard to SICA and the particular priorities selected for international collaboration, the approach is thus determined to be 'targeted' both thematically and

²⁷⁶ RTD Info, "International cooperation, the cornerstone of the Seventh Framework Programme", http://ec.europa.eu/research/rtdinfo/special_fp7/fp7/01/article_fp723_en.html (03 May 2008).

²⁷⁷ *Ibid.*

²⁷⁸ *Ibid.*

²⁷⁹ European Commission, *A new approach to international scientific and technological cooperation in the 7th Research Framework Programme*, 6.

geographically.²⁸⁰ A specific example of SICA in practice entails the selection of India as a target country for collaboration within the 'Cooperation' programme's priority in health. Titled as 'Highly innovative research in HIV/AIDS, malaria and tuberculosis between Indian and European partners', the specific joint venture will span from 2007 to 2008 and provides just one example of targeted international collaboration emerging from the early stages of FP7.²⁸¹

The launch of FP7 therefore signifies the comprehensive incorporation of international research collaboration into the EU's Framework Programmes. Indeed, the realisation of objectives set out by the current Programme relies on such cooperation. The European Commission states the challenges presented by influencing factors such as globalisation, emerging global powers and the expenses and risks associated with contemporary research and development, require utilising internationally collaborative research links in order to respond effectively. For example, the Commission recognises the need for strategic partnering with third countries in relevant areas of RS&T in order to fulfil FP7's goals to strengthen the Union's own capacities in this field. Moreover, in securing better access to cross-border research, forging linkages with researchers in third countries is essential. Finally, international cooperation is also essential in addressing FP7's thematic priorities in areas which transcend national borders, such as in the fields of climate change and energy.²⁸²

More importantly, however, international cooperation has also contributed to the further integration of RS&T with other complementary EU policies. In its 1996 publication on RS&T collaboration with third countries, the Commission determined a

²⁸⁰ *Ibid*, 7.

²⁸¹ *Ibid*, 14.

²⁸² *Ibid*, 6.

role for such international cooperation in assisting the implementation of EU policies on the environment, health, education, transport, energy, agriculture, the accession process, development aid, and the promotion of external relations in its broadest sense.²⁸³ Moreover, the Commission states that RS&T collaborations with third countries have also contributed to Union policies outside the remit of science and technology:

“...cooperation with industrial countries has been steered partly towards the objectives of the telecommunications policy, energy policy and transport policy. It has of course been possible to coordinate joint research activities with developing countries with the objectives of EU development policy. Finally, as part of the eastward enlargement of the European Union, cooperation with former Eastern block countries has been carefully coordinated with the objectives of DG I, which is responsible for external relations...”²⁸⁴

The increasing internationalisation of the EU's RS&T efforts can also be linked to the Union's normative role within international politics. As mentioned in the previous chapter, the EU aims to promote a distinctly European model in its collaborative engagement with others, reflecting core European norms and values whilst working to fulfil its geopolitical objectives.²⁸⁵ Ian Welsh, for example, draws attention to the fact that the American focus on the economic opportunities science and technology can offer differs greatly from the EU's objectives of promoting science to benefit primarily social needs.²⁸⁶ Having thus comprehensively worked to establish such norms and standards throughout the expanded EU, the internationalisation of European RS&T indicates the Union's attempt to engage with others and further diffuse European norms and standards through the use of such scientific collaboration.

²⁸³ *Ibid*, 5.

²⁸⁴ European Commission, *European Research Open to the World*, 7.

²⁸⁵ De Rose.

²⁸⁶ Welsh, “Values, science and the European Union”, 65.

3.5 Conclusion

The EU's current role in RS&T has been subject to a number of complex evolutionary changes since it first established a presence for itself in this field in the 1950s. Concern regarding the growing technology gap between Europe and the US in the 1960s initially resulted in experimentations in nationalistic research and development, which in fact served to widen this gap. Having thus proved the utility of a European approach to RS&T, the 1980s saw increasing Europeanisation in this field as the EU attempted to both enhance its competitiveness vis-à-vis its competitors and forge an appropriate role for itself. Collaborative programmes such as COST, ESPRIT, EUREKA and the Community's Framework Programmes all served to promote cross-border cooperation. Moreover, this extensive level of socialisation of European researchers and policymakers alike further consolidated an EU role and identity in this field and provided new paths for the continued development of European RS&T.

From the 1990s, increasing interaction between policymakers led to an integrated set of policies which, instead of solely reflecting change occurring within the international environment, also complemented the normative role that the EU had come to encompass. Finally, as successive Framework Programmes introduced an increasing number of internationally collaborative opportunities, EU RS&T became truly internationalised with the launch of FP7. The Europeanisation, then internationalisation, of EU RS&T reflected the changing identity of the Union itself, as it expanded its global competencies and responsibilities and recognised the potential for the application of scientific and technological developments to complement its activities. Presently, European RS&T is intertwined with key Union priorities in areas such as health, the

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environment and the promotion of economic growth within developing countries, thus signalling the complete integration of RS&T within the EU policy arsenal and the addition of another tool with which to manage its external relations.

Chapter Four

The New Zealand-EU relationship in the field of RS&T to 2008

4.1 Introduction

An official dialogue between the European Union (EU) and New Zealand concerning collaboration in the field of Research, Science and Technology (RS&T) was established in 1991 with the creation of the New Zealand-EU Science and Technological Cooperation (STC) Arrangement.²⁸⁷ The terms of the Arrangement focused on providing for cooperation in fields of mutual interest – specifically agriculture, biomass, biotechnology, the environment, forestry, renewable energies, telecommunications and information technology.²⁸⁸ Despite this initial step, however, New Zealand failed to fully exploit the opportunities presented by potential RS&T collaboration with the EU. This is partly due to the fact that the importance of research and development to other areas of national priority, such as the economy, health and the environment, has only recently been recognised in New Zealand. Previously, forging RS&T links were seen as a useful way to gain diplomatic benefits and were thus established for the prime purpose of foreign policy. At the same time, New Zealand has had to work harder to raise its profile within the EU, as the Union steadily grows in both political and economic importance on a global scale.

Other issues, such as the limited opportunities for third country participants under previous EU framework programmes, the inevitable dilution of New Zealand's

²⁸⁷ Delegation of the European Commission to New Zealand, "Arrangement between the Commission of the European Communities and the Government of New Zealand for cooperation in science and technology", *Agreements*, 20 March 2008, http://www.delaus.cec.eu.int/newzealand/EU_NZ_relations/science_tech_agreement.htm (25 March 2006).

²⁸⁸ *Ibid.*

international RS&T collaboration efforts with regard to limited funds and inadequate investment on the part of New Zealand's private sector, have also hindered New Zealand's progress in capitalising upon the 1991 STC Arrangement. Taking into account the content of this dissertation's third chapter concerning the development of the EU's science policy, this chapter links RS&T developments in New Zealand with those of the EU in the context of the wider collaborative relationship. In doing so, this section of the thesis focuses on developments put in place to enhance New Zealand-EU RS&T relations between 1991 and 2008 and attempts to address why such efforts were initially slow to take-off. Finally, the chapter concludes by addressing the most recent developments in New Zealand-EU RS&T, in an attempt to deduce the future prospects of the relationship.

4.2 New Zealand's overarching relationship with the EU

Traditionally, trade has been the most important connection for New Zealand in terms of New Zealand-EU relations. As our second largest trading partner after Australia, the EU-New Zealand trading relationship is worth €4.7 million.²⁸⁹ However, New Zealand has not been completely embraced by the EU as a sought after trading partner. New Zealand, Benson-Rea and Mikic argue, suffers from a problem termed the 'tyranny of distance', which "remains its largest single obstacle" in creating high demand for EU-New Zealand relations.²⁹⁰ Moreover, EU protectionism regarding butter and the Union's ability to source milk from cheaper producers, such as South America, suggests that although agricultural exports may enjoy a secure market, it is unlikely New Zealand will be able to

²⁸⁹ Conversion of NZ \$9,971,560, as referred to in Benson-Rea and Mikic, "New Zealand-Europe Trade Relations", 21.

²⁹⁰ *Ibid*, 19.

look to the EU as an ongoing market for New Zealand dairy products.²⁹¹ The 2004 EU Enlargement to 25 members, and to 27 in 2007, has meant that New Zealand has had to work harder to make its voice heard over those countries who are more of a priority for the Union.

In his presentation of the paper titled *New Zealand and the European Union Since 1990*, Matthew Gibbons outlined New Zealand's early responses to the possibility of a declining EU market. Gibbons argued that relations had been deteriorating since the 1960s when Great Britain, our vital link to Europe, joined the European Economic Community (EEC), thus putting New Zealand export interests at risk by exposing the country to the Community's Common Agricultural Policy (CAP).²⁹² In 1988, Gibbons states that Britain demonstrated it was no longer prepared to battle for New Zealand's interests in the face of reduced butter and sheep meat quotas and by 1990 the relationship was regarded as having become strained and weakened.²⁹³ Indeed, Don McKinnon claimed in 1991 that "...our view of Europe is still very largely shaped by our dismay at the Community's approach to agriculture..."²⁹⁴ During the early 1990s, then, New Zealand politicians saw Europe as declining in importance in terms of the trade relationship. The National government, in particular, favoured refocusing on Asia and closed embassies in Athens and Vienna in 1990 and 1991 respectively.²⁹⁵

²⁹¹ Matthew Gibbons, "New Zealand and the European Union Since 1990", *National Centre for Research on Europe – Roundtable Seminars*, 2006.

²⁹² *Ibid.*

²⁹³ *Ibid.*

²⁹⁴ Don McKinnon, "Europe Without Walls", in *Europe Without Walls – The Papers of the Twenty-Sixth Foreign Policy School*, ed. Roberto G. Rabel (Dunedin: University of Otago, 1991), 8.

²⁹⁵ Gibbons, and New Zealand Ministry of Foreign Affairs and Trade, "Relations Between New Zealand and the EU", *Europe Division*, <http://www.mfat.govt.nz/foreign/regions/europe/eu/euenlargementtext.html> (25 March 2006).

However, despite deteriorating trade relations in the 1990s, with the Union gradually adopting responsibility as a global actor, European influence began expanding into other areas of importance to New Zealand. For example, Philomena Murray draws attention to the theory of neofunctionalism and the way in which EU cooperation in one area has inevitably spilled over into other sectors of responsibility.²⁹⁶ For example, in its review of the 1999 Joint Declaration on Relations Between the European Union and New Zealand, the 2004 document *New Zealand and the European Union: Priorities for Future Cooperation* illustrates just how far the Union's sphere of influence has expanded. Whilst trade is still of primary importance in regard to the relationship, collaboration has now extended to areas of global and regional security, development cooperation, the environment, fisheries, transport, education, people-to-people links and science, technology and innovation.²⁹⁷ Thus, despite deteriorating trade relations in the 1990s, the EU has today evolved into an actor wielding real influence on important international issues. In this way, New Zealand cannot afford to disregard how important the EU still is, in terms of similar priorities and values and the power the Union has to influence areas of New Zealand interest. Encompassing 27 countries since 2007, the EU is a force that cannot be ignored.

4.3 Early New Zealand engagement in EU-led RS&T

(i) The EU as an emerging RS&T player

²⁹⁶ Philomena Murray, *Australia and the European Superpower: Engaging with the European Union* (Victoria: Melbourne University Press, 2005), 256.

²⁹⁷ Delegation of the European Commission to New Zealand, *The European Union and New Zealand Joint Declaration on Relations and Cooperation* (Wellington, 2007), 3.

Since New Zealand signed its STC Arrangement with the European Community (EC) in 1991, the EU today has become an important player in the field of RS&T. In 1991, Holmes and Pearson claimed that the creation of the single market would enable the EC to fulfil one of its primary aims – increasing Community competitiveness through technical innovation.²⁹⁸ As a powerful world player in terms of economy, then, the Community felt it was required to increase competitiveness in other areas to enhance its position on the world stage. The Union’s increasingly important role on the international stage generally, and the development of its internationalised RS&T policy in particular, has been discussed in greater detail in chapters two and three of this dissertation. To briefly restate, however, the EU’s goal to enhance its competitiveness in RS&T was formed once the EC recognised that it was trailing behind countries such as Japan and the United States (US) in terms of research and development.

The resulting ‘technological gap’ still troubles the EU today.²⁹⁹ For example, in a European Commission presentation, it was reported that it could take the Union up to 50 years to match US prowess in research, science and technology, given its unsatisfactory progress in this field in the past.³⁰⁰ Indeed, it is estimated that Europe invests less than two percent of Gross Domestic Product (GDP) in RS&T, compared to two-and-a-half and three percent in the US and Japan respectively.³⁰¹ Thus, as discussed in the preceding chapter, the EU has worked towards becoming globally competitive in this field through

²⁹⁸ Frank Holmes and Clive Pearson, *Meeting the European Challenge: Trends, Prospects and Policies* (Wellington, Victoria University Press, 1991), 163.

²⁹⁹ *Ibid*, 164.

³⁰⁰ Tobias Buck, “EU ‘is 50 years behind the US for innovation’”, *Financial Times* 2 (2006): 8.

³⁰¹ Europa, “Investing in European Research”, *Investing in European Research: Towards 3% of GDP*, European Commission, http://ec.europa.eu/invest-in-research/index_en.htm (2 September 2006).

the use of the Framework Programme and its ability to foster cooperation on an international scale, which is deemed of great importance in facilitating RS&T successes.

(ii) Science for diplomacy's sake

In the past, however, New Zealand failed to recognise the importance of research and development in terms of its capacity to generate economic, environmental and social benefits. This is shown most obviously through the way in which New Zealand began forming a seemingly impressive list of bilateral RS&T arrangements in the 1970s, the majority of which remained inactive and existed merely to achieve advantages in the fields of diplomacy and trade.³⁰² For example, in 1991 New Zealand had seven science and technology agreements in place, with a further eight agreements providing for the possibility of science and technology cooperation. However, only three of these arrangements were ever active, involving cooperation with Germany, the US and joint collaboration with Australia and the United Kingdom (UK) through a tripartite arrangement.³⁰³

In his study of New Zealand's international relations in the field of science, George Stuart argued that initially New Zealand was not alone in this respect. He claimed that since the 1950s many countries formed bilateral agreements for the purpose of furthering diplomacy, stating that:

“...science, with its ethos of internationalism and universalism, was ideal for establishing diplomatic linkages with few complications or disadvantages and little concern for a significant positive return from the linkage...”³⁰⁴

³⁰² Stuart, *A Review of New Zealand collaboration in international science and technology*, 1.

³⁰³ *Ibid*, 12.

³⁰⁴ *Ibid*.

By the time New Zealand and the EC signed the 1991 STC Arrangement, however, New Zealand had fallen behind in terms of recognising the complementary nature of research and development and economic and trade policies.³⁰⁵ Moreover, Stuart also emphasised that whilst the rest of the world was undergoing a transformation in terms of increasing involvement in private sector RS&T, New Zealand levels of private investment remained, and indeed continue to remain, low.³⁰⁶ For example, a 1989/90 survey conducted by the Department of Statistics and the Ministry of Research, Science and Technology (MoRST) revealed that of a survey of 7,900 private businesses, only 1,027 or 13 percent were involved in research and development. Furthermore, the survey found that in terms of the total €98 million³⁰⁷ expenditure on RS&T committed by these firms, 26 percent or €24 million³⁰⁸ was attributed to the top five ranked RS&T firms, whilst 50 percent of this expenditure fell within the top 30 firms surveyed.³⁰⁹ Today, MoRST's 2005 summary of research and development in New Zealand acknowledges that private sector investment is still relatively low and that the contribution made to RS&T by this sector needs to be raised as quickly as possible.³¹⁰

At the time of Stuart's review, New Zealand's relationship with Germany in the field of science was the only collaborative effort seen as working effectively.³¹¹ As previously mentioned, whilst some international cooperation was conducted through bilateral governmental agreements, international cooperation in science on the part of

³⁰⁵ *Ibid*, 3.

³⁰⁶ *Ibid*.

³⁰⁷ Conversion of NZ\$208 million, as at 11 August 2008.

³⁰⁸ Conversion of NZ\$51.5 million, as at 11 August 2008.

³⁰⁹ Stuart, *A Review of New Zealand collaboration in international science and technology*, 23.

³¹⁰ New Zealand Ministry of Research, Science and Technology, *Research, Science and Technology in New Zealand...picking up the pace...Summary December 2005*, <http://www.morst.govt.nz/uploadedfiles/Documents/Current%20work/Pace/SummaryofPace.pdf> (2 September 2006).

³¹¹ Stuart, *A Review of New Zealand collaboration in international science and technology*, 1.

New Zealand was primarily informal in nature and rather limited. For example, Stuart identifies the problem presented by travel costs in terms of restricting the participation of New Zealand's scientists in international collaborative efforts.³¹² The author states that the ability to acquire travel funds was a major factor in influencing the degree of participation in collaborative projects. The structure of the research funding system further exacerbated this issue as international travel was not allocated to researchers as a specific fund. As such, Stuart states that travel became "a trade-off with other budget items."³¹³ Moreover, he claims that scientists from overseas "are getting closer to our leading researchers than we are to them", citing estimated ratios of incoming to outgoing travel ranging from 0.7 to three times.³¹⁴ Stuart saw these issues as important as they limited New Zealand's ability to forge further international links and in turn reap the benefits of participation in joint-research projects.³¹⁵

(iii) Changing tactics in the 1990s

In 1991, George Stuart's review of New Zealand's international cooperation in the field of science and technology proved instrumental in improving New Zealand's levels of international scientific collaboration. Stuart brought problematic issues to the attention of the science community and emphasised the need to incorporate research and innovation into other areas of government priority. Stuart's study was followed by the release of a discussion paper,³¹⁶ which in turn led to the publication of the 1992 science strategy³¹⁷ in

³¹² *Ibid.*

³¹³ *Ibid.*, 11.

³¹⁴ *Ibid.*

³¹⁵ *Ibid.*, 1.

³¹⁶ New Zealand Ministry of Research, Science and Technology, "A Continuing Role for Government? : a discussion paper on international links in science and technology", in *International Science and Technology Links*, Report no. 8, 1991.

an attempt to address the shortcomings expressed in Stuart's initial review. Out of this strategy emerged an overall goal for RS&T:

“...economic prosperity, a sustainable environment, and cultural and social well-being for New Zealand through the effective application of scientific research, technology and innovation...”³¹⁸

Moreover, the 1992 strategy also identified the need to:

“...selectively develop strategic relationships with other countries that will add maximum value to New Zealand science and technology programmes...”³¹⁹

Thus, the strategy signified a departure from traditionally forging meaningless RS&T documents for the advantage of furthering foreign policy goals instead. The document also saw the emergence of the New Zealand government as a more proactive force in facilitating international linkages, embodying a new role to coordinate and support traditional cooperative ventures between scientists, as well as to provide for mainstream science funding.³²⁰ Furthermore, in a statement to the Foundation for the allocation of the Public Good Science Fund, the government specifically identified the importance of RS&T to New Zealand as a long term priority.³²¹

Despite the acknowledgement of New Zealand's new found interest in science and technology and the opportunities it presented, progress was slow moving during the early 1990s. Rick Petersen claims that although there was some movement within MoRST to promote opportunities for participation in the Fourth and Fifth Framework Programmes (FP4 and FP5) amongst New Zealand's research community, this early

³¹⁷ New Zealand Ministry of Research, Science and Technology, “The Government's Role in Promoting International Links in Science and Technology”, in *International Science Strategy*, Publication no. 8, 1992.

³¹⁸ *Ibid*, 11.

³¹⁹ *Ibid*, 12.

³²⁰ *Ibid*, 12-13.

³²¹ *Ibid*, 13.

effort proved ultimately unproductive. This failure to actively promote the Programmes from 1996-1998 was attributed, in part, to the fact that key individuals involved in the drive eventually left their posts.³²² This experience therefore suggests that, despite New Zealand's new focus upon the importance of science and technology, this focus was not sufficiently entrenched to withstand the removal of key personnel committed to New Zealand-EU RS&T cooperation.

Nevertheless, a further review of New Zealand links with Europe, conducted by Petersen in 1998, renewed the commitment to seek RS&T cooperation with the EU. Detailing aspects such as potential RS&T, policy and research linkages with the EU, the document concluded that MoRST should attempt to forge closer policy linkages and seek involvement in the Union's Framework Programmes as provided by the existing STC Arrangement.³²³ Petersen claims that in terms of actual New Zealand-EU collaboration, however, activity in this area remained limited until 2001. Instead, MoRST continued to centre its attention upon major bilateral RS&T partners such as Germany, Britain and France.³²⁴ This is partly due, in terms of directing attentions towards the EU, to the widely held view that unwieldy bureaucratic processes exist with regards to forming Framework Programme contracts, which thus discourages New Zealand researchers from pursuing collaborative opportunities with the EU and helps to explain the continued focus upon bilateral initiatives.³²⁵

New Zealand's focus on bilateral partners remains important in 2008, with New Zealand still investing heavily in its scientific relationship with Germany. For example,

³²²Rick Petersen, "MoRST Feedback", 30 June 2006, personal e-mail (30 June 2006).

³²³ *Ibid.*

³²⁴ *Ibid.*

³²⁵ *Ibid.*

Germany's Alexander von Humboldt Fellowship programme, which supports New Zealand scientists conducting research in Germany, has now been complemented by New Zealand's own Julius von Haast funding scheme, arising out of the International Science and Technology (ISAT) Linkages Fund to facilitate collaborative New Zealand-German research projects.³²⁶ However, it is difficult to compare this long-standing collaborative effort with that of the fledgling New Zealand-EU RS&T relationship, where the EU equivalent to a von Humboldt scheme has only recently been launched in the form of the Marie Curie Fellowship and which, to date, has not been complemented by a reciprocal New Zealand programme.³²⁷

4.4 A new approach: New Zealand's RS&T engagement with the EU post-2000

(i) The Lisbon Agenda and the Sixth Framework Programme

New Zealand, therefore, did not really begin to pay attention to EU science and technology developments until 2001-2002, spurred on by MoRST's meeting with the European Commission's Director General (DG) for Research and Technology Development (RTD) at the time, Archilleas Mitsos. The meeting produced positive feedback in regards to renewed cooperation efforts between New Zealand and the EU, as provided for by the original 1991 STC Arrangement. Petersen states that this meeting was in turn followed by the creation of a MoRST policy package directed at the New Zealand-EU relationship. This set of policies provided confirmation on issues such as

³²⁶ The Royal Society of New Zealand, "Julius von Haast Fellowship Award", *Promoting Excellence in Science and Technology*, <http://www.rsnz.org/funding/vonhaast/> (10 May 2006).

³²⁷ Melae Langbein, "The NZ-EU science and technology relationship", 22 April 2006, personal e-mail (22 April 2006).

affirming the EU as a priority RS&T partner for New Zealand, the necessity of continued cooperation with EU officials in Canberra and Brussels to facilitate admittance into relevant Framework Programme projects, as well as continuing to work with the opportunities provided by the STC Arrangement.³²⁸ This new focus on Europe as a priority partner, however, is best illustrated by the provision of funding in the 2003 Budget for a New Zealand Science Counsellor, based in Brussels, who would work to raise New Zealand's profile within the EU as a viable research and development partner.

Petersen suggests that, although strong links were present with European actors at the bilateral level, such as with Germany, France and the UK, the EU's autonomous efforts concerning research and development did not catch New Zealand's attention until the creation of the Lisbon Agenda and the inception of the Sixth Framework Programme (FP6) in 2002. It was not until then, he states, that the research goals of the EU began to link in with issues complementary to New Zealand's.³²⁹ In fact, the thematic priorities of FP6 appealed to a wide range of potential partners, and MoRST's 2004-2007 International Strategy claimed that six of the seven FP6 priorities were of great importance in New Zealand research and development.³³⁰ More specifically, the Ministry determined these priority themes as those focusing on genomics and biotechnology for health; information society technologies; nanotechnologies and nanosciences; food quality and safety; sustainable development, global change and ecosystems; and citizens and governance in a knowledge-based society.³³¹ Moreover, the most recently launched

³²⁸ Petersen, personal e-mail, June 2006.

³²⁹ *Ibid.*

³³⁰ Rick Petersen, "MoRST 2005/07 Bilateral Relationship Management Plan doc", 07 May 2006, personal e-mail (07 May 2006).

³³¹ *Ibid.*

Seventh Framework Programme (FP7) has seen the retention of these priorities and thus demonstrates the Union's continued relevance to New Zealand's own RS&T priorities.

Thus, in terms of complementary New Zealand-EU priorities, New Zealand researchers stand to gain from involvement in current EU-led RS&T projects. Moreover, when taking into account the theoretical framework that provides the backdrop to this dissertation, shared domestic research priorities with those promoted in FP6 and FP7 are indicative of the wider New Zealand-EU relationship as a whole. For example, the thematic fields of genomics and biotechnology for health, food quality and safety, sustainable development and citizens and governance in a knowledge-based society all demonstrate the two parties' recognition of the social applications of scientific research. Even within the economically competitive field of research and development, New Zealand and EU researcher activities in this area still manage to reflect and promote the shared socially-driven priorities deemed important in the pursuit of larger geopolitical goals. Referring to de Rose's opinion concerning the wide-ranging applications of RS&T, the two parties consider cooperation in scientific research as a means to address development and governance issues, promote sustainable development and environmental protection and encourage innovation to increase productivity and competitiveness on a global scale.³³²

(ii) Increasing involvement in EU-led RS&T initiatives

Despite the initial delay in willingness to jump on the European research and development 'bandwagon', New Zealand researchers have already enjoyed a series of

³³² Delegation of the European Commission to New Zealand, *The European Union and New Zealand Joint Declaration on Relations and Cooperation*.

initial successes in regards to gaining involvement in EU led projects. FP5, for example, saw New Zealand researchers participate in only three of the Programme's projects.³³³ HortResearch, a New Zealand Crown Research Institute (CRI) focused on fruit research, was the first researcher contingent to participate within the Programme. The specific project, dubbed CROPPRO (development of integrated farming approaches for sustainable crop production in environmentally-constrained systems in the Pacific region) was launched in November 2001 within the Specific International Scientific Cooperation Activities II (INCOII) programme area of FP5.³³⁴

The Alpha-1 International Registry project, launched in January 2002, marked the second FP5 initiative that included participants from New Zealand. Encompassed within the Quality of Life and Management of Living Resources (QoL) programme area, New Zealand participation was represented by the University of Otago. The project specifically focused upon the creation of a DNA database of the chromosome disorder Alpha-1-antitrypsin deficiency (AAD), in an attempt to establish the deficiency's links with the development of emphysema, and other potential diseases, in smokers.³³⁵

Participation, Leadership and Urban Sustainability (PLUS), launched in February 2002 within the remit of the Energy, Environment and Sustainable Development (EESD) theme, was the third FP5 project to include a researcher from New Zealand. PLUS has been selected as a case-study for investigation within this dissertation and will be discussed in greater detail in chapter six. However, in brief, New Zealand's participation in the initiative was represented by Christine Cheyne from Massey University, whose

³³³ New Zealand Ministry of Research, Science and Technology, "New Zealand researchers and FP6", in *Briefing Papers: New Zealand 2003 RS&T Delegation to the EC Directorate-General*, 5.

³³⁴ FEAST, "CROPPRO", *Projects*, <http://www.feast.org/projects/?ID=119> (6 August 2008).

³³⁵ FEAST, "Alpha-1 International Registry", *Projects*, <http://www.feast.org/projects/?ID=166> (6 August 2008).

research focused upon contributions of leadership and community participation in improving urban policies in the field of sustainable development.³³⁶

In addition to the limited participation of New Zealand researchers in FP5 initiatives, those researchers that did participate did so through domestic institutional and governmental funding channels, due to their ineligibility to qualify for DG RTD funding.³³⁷ However, considering how the launch of FP6 provided a catalyst for MoRST's increased engagement with the EU, New Zealand researchers' levels of project participation were greatly increased within this Framework Programme. The Coordinator for the Facilitating Research cooperation between Europe and New Zealand (FRENZ) service, Carole Glynn, states that 60 project proposals were submitted within the four year duration of FP6 and that 20 of those also received funding.³³⁸ The dissertation's case-study focus on collaborative New Zealand-EU projects in practice has selected two of these FP6 projects, ISAFRUIT (increasing fruit consumption to improve health) and Food Research in Europe and New Zealand (FOOD-FRENZ), to investigate in greater detail.

New Zealand also received a specific reference in the project call FP6-2005-FOOD-4C, the details of which focus upon Specific Support Actions to increase Food, Agriculture and Biotechnology cooperation with New Zealand.³³⁹ During this period, New Zealand gained two Marie Curie Fellowships also.³⁴⁰ Most recently, within the first year of FP7, 2007 saw New Zealand researchers respond to the Programme's launch by submitting 35 proposals, of which Glynn states that 17 have been, or are likely to be,

³³⁶ FEAST, "PLUS", *Projects*, <http://www.feast.org/projects/?ID=89> (6 August 2008).

³³⁷ New Zealand Ministry of Research, Science and Technology, "New Zealand researchers and FP6", 5.

³³⁸ Carole Glynn, interview by author, National Centre for Research on Europe, 05 February 2008.

³³⁹ Glynn, interview, February 2008.

³⁴⁰ Langbein, personal e-mail.

funded. The first year of New Zealand researchers' engagement in FP7 therefore marks a one-in-two proposal submission success rate, improving upon the one-in-three average of FP6 project proposals.³⁴¹

Other developments also signified that New Zealand was attempting to increase its involvement in European RS&T. In February 2005, for example, Queenstown hosted the Second International Conference on Advanced Materials and Nanotechnology. Ezio Andreta and Renzo Tomellini from the European Commission DG RTD also participated in the conference, promoting cooperation between the EU and New Zealand regarding combined research in nanotechnology and advanced materials.³⁴² Other delegations of European Commission officials to New Zealand involved visits focusing on the Marie Curie Fellowships in November 2004, Galileo in February 2006, and Food, Agriculture and Biotechnology in June 2006.

In terms of reciprocal visits on the part of New Zealand, in July 2005 MoRST took a delegation of researchers to Europe for a seven day visit in response to the reference made to New Zealand in call FP6-2005-FOOD-4C. With the tendency for the first two calls of each Framework Programme to be the largest, this visit was particularly significant as New Zealand made the effort to forge new contacts and raise its profile within Europe close to the launch of FP7.³⁴³ Since the return of the July 2005 delegation, MoRST has continued its work to enhance New Zealand's standing within Europe as a viable research and development partner. Another delegation of New Zealand researchers

³⁴¹ Glynn, interview, February 2008.

³⁴² Slovenian Research Agency, "2nd International Conference on Advanced Materials and Nanotechnology", *Sixth Framework Programme Nanotechnologies, materials, production process and devices*, 04 January 2005, <http://www.rtd.si/eng/6op/podr/nanoteh/dogodki/05/2-medn-konf-NMP-040105.asp> (25 September 2006).

³⁴³ Melae Langbein, "Draft: News from Melae Langbein, MoRST's S&T Counsellor for Europe", http://www.europe.canterbury.ac.nz/morst/pdf/melae's_report_dec05.pdf, (25 September 2006).

was sent to Europe in September 2005, with the focus on climate change and Antarctica, with a further delegation travelling to Europe in March 2006 concerning potential collaboration in the field of advanced networks.³⁴⁴

In addition, the UK, Germany and France presently fall within the top five ranked countries for bilateral scientific cooperation with New Zealand.³⁴⁵ New Zealand can, and does, utilise these existing linkages to obtain entry into EU framework programmes, by satisfying the Community partner requirement for third country participation. For example, Chief Executive of MoRST, Helen Andersen, stressed that the recently signed Dumont d'Urville Collaborative Science and Technology Support Programme between New Zealand and France not only paves the way for more effective bilateral cooperation but is also significant in terms of French links into European research.³⁴⁶

Since the 1991 STC Arrangement, then, significant development in New Zealand's policy regarding science and technology is evident. The government has recognised that the foremost areas of national importance, such as the economy, environment and health, can reap real benefits through conducting research and development. New Zealand has also accepted the necessity to forge effective international relationships to enhance its own RS&T developments. At present, then, with the thematic priorities of FP6 and FP7 clearly demonstrating EU-led projects as complementary to New Zealand's national research and development priorities, New

³⁴⁴ Langbein, personal e-mail.

³⁴⁵ New Zealand Ministry of Research, Science and Technology, *Global Relationships*, <http://www.morst.govt.nz/?CHANNEL=Global+relationships&PAGE=Global+relationships> (25 September 2006).

³⁴⁶ Embassy of France, "France and New Zealand Sign Agreement Supporting Science and Technology Collaboration: Dumont d'Urville call for proposals 2006", *France In New Zealand*, http://www.ambafrance-nz.org/article.php3?id_article=720 (25 September 2006).

Zealand researchers are finally reaching out towards Europe and attempting to form an effective RS&T relationship.

(iii) FRENZ

Launched in 2006, the programme for Facilitating Research cooperation between Europe and New Zealand, or FRENZ, constitutes a joint venture of the European Commission and MoRST. Headed by Coordinator Carole Glynn, FRENZ acts as a medium to provide information and support for New Zealand researchers, in order to increase New Zealand's overall participation in EU-led projects and FP7 in particular. As its overall mission statement, FRENZ seeks to:

“...increase the quality, quantity, profile and impact of NZ-EU research cooperation under FP7 through increased awareness of opportunities and facilitating the realisation of these opportunities for NZ engagement in EU research programmes...”³⁴⁷

Glynn states that the goal is to achieve more successful proposals rather than simply submitting an increased number of proposals for consideration.³⁴⁸ Although Glynn outlines that FRENZ aims to coordinate New Zealand's approach towards EU research and development,³⁴⁹ she claims that traditional informal scientific contacts are still crucial and thus the aim is to work with existing linkages. Scientific ‘matchmaking’, Glynn says, is not a viable option, as cooperative relationships in the past have been built upon established informal linkages and a high degree of trust.³⁵⁰ This observation is of particular relevance to the content of this thesis, in that the importance of personal

³⁴⁷ FRENZ, “The FRENZ Mission”, *Facilitating Research cooperation between Europe and New Zealand*, <http://www.frenz.org.nz> (06 June 2006).

³⁴⁸ Carole Glynn, interview by author, National Centre for Research on Europe, Christchurch, 03 June 2006.

³⁴⁹ *Ibid.*

³⁵⁰ *Ibid.*

linkages constitutes a major theme of the New Zealand-EU RS&T relationship. This theme is most obviously demonstrated within the findings of the case-studies selected for investigation in chapter six.

The main instruments at the initiative's disposal involve weekly themed emails, the FRENZ website, training courses, briefing visits and, most importantly, the FRENZ Helpdesk, which enables one to one contact with Carole Glynn.³⁵¹ Glynn considers this personal assistance as the most useful aspect of the venture, regarding the opportunity it provides for researchers to meet with an advisor familiar with the working of the Framework Programmes. Moreover, especially for researchers new to the Framework Programmes, one-to-one contact allows for the effective management of the often overwhelming level of information associated with Framework Programme project proposals.³⁵² A recent informal survey, concerning the effectiveness of FRENZ to date, illustrated New Zealand researchers' opinions as to the usefulness of the venture. The respondents to the survey reported that Glynn provided "...a prompt, accurate, helpful service..."³⁵³ Additionally, Glynn was considered to have an excellent understanding of FP7 and its associated bureaucratic processes. The survey participants unanimously recognised the FRENZ service as unique and necessary for researchers looking to engage in EU Framework Programmes.³⁵⁴

Carole Glynn also considers FRENZ to constitute a useful aspect of the wider MoRST-led strategy to engage with the EU and she attributes increasing New Zealand-EU collaboration to the Ministry's activities and provision of the role of the Science

³⁵¹ FRENZ, "FRENZ Services", *Facilitating Research cooperation between Europe and New Zealand*, http://www.frenz.org.nz/frenz_services.htm (6 June 2006)

³⁵² Glynn, interview, February 2008.

³⁵³ Rick Petersen, "Evaluation of FRENZ Services", 15 May 2008, personal e-mail, (15 May 2008).

³⁵⁴ *Ibid.*

Counsellor. More specifically, she refers to the way in which the creation of FRENZ has allowed for New Zealand's inclusion in networking National Contact Points (NCPs) within the Framework Programmes. For example, Glynn states that the Food-Agriculture-Fisheries-Bio (FAFB) theme of FP7 has released a call concerning networking NCPs for the development of training programmes, within which Glynn is involved in her capacity as FRENZ Coordinator. More importantly, she claims that the opportunity to engage this way not only grants access to other NCPs but to their researchers, providing a valuable means with which to establish new personal linkages. Additionally, by granting New Zealand a voice within such NCP events, Glynn considers these opportunities as providing a way for New Zealand to shape the development of future projects and raise its profile within EU-driven RS&T forums.³⁵⁵

Most recently, FRENZ has been successful in submitting a proposal within the 'Cooperation' section of FP7, which provides for the significant expansion of the initial three year 'pilot' project.³⁵⁶ More specifically, the bilateral cooperation call focused upon national support activities in third country, of which FRENZ qualified. Carole Glynn states that, although yet to complete the negotiation phase of the proposal, the enhanced initiative will provide better funding thus allow more to be done concerning the promotion of the New Zealand-EU RS&T relationship.³⁵⁷ For example, MoRST has committed to doubling its current financial commitment to FRENZ whilst the EU's contribution may possibly quadruple, dependent on the outcome of the negotiation process.³⁵⁸ The expansion of FRENZ will also introduce new aspects into its current

³⁵⁵ Glynn, interview, February 2008.

³⁵⁶ *Ibid.*

³⁵⁷ *Ibid.*

³⁵⁸ *Ibid.*

activities. Carole Glynn mentions the possibility to apply the venture's resources to also address the presence of the currently untapped diaspora of European researchers in New Zealand. She also touches on the potential to showcase New Zealand research within Europe as a way of enhancing existing linkage building methods.³⁵⁹ However, the negotiation process has yet to be completed and it is not yet certain what the enhanced version of FRENZ will look like.

The FRENZ initiative also provides a useful platform through which to promote potential participation within EU led RS&T projects. This is particularly important with regard to the way in which a lack of awareness of the availability of cooperative projects had hindered New Zealand researchers' involvement in the Framework Programmes.³⁶⁰ For example, Jill Stanley, a HortResearch participant in the EU-led FP6 ISAFRUIT project, mentions difficulty accessing information concerning third country participatory guidelines as a particular impediment to more effective engagement with the Union.³⁶¹ Through the creation of FRENZ, then, the EU and MoRST have specifically attempted to address this issue. Moreover, with the help of the Brussels-based Science Counsellor, the platform acts as a crucial contact point and information centre for New Zealand's leading scientists, thus ensuring New Zealand is well placed to effectively engage in FP7 calls.

(v) Upgrading the Arrangement: the 2008 STC Agreement

The most recent development in the New Zealand-EU RS&T relationship is the upgrade of the 1991 STC Arrangement to an STC Agreement, signed on 16 July 2008. As

³⁵⁹ *Ibid.*

³⁶⁰ FEAST, "FRENZ to increase New Zealand participation in FP7", *Articles*, 5 July 2006, <http://www.feast.org/?article&ID=268> (6 September 2006).

³⁶¹ Jill Stanley, interview by author, telephone interview, 20 June 2008.

previously stated, New Zealand's official relations with the EU had, until 2008, been governed by the STC Arrangement. The former Arrangement, however, did not possess any legal backing such as that provided by a typical EU-third country STC Agreement. Nevertheless, both parties were initially satisfied that the Arrangement would adequately cover the scope of present and future relations between the two.³⁶² However, both Melae Langbein and Carole Glynn mention that the different nature of the Arrangement, as opposed to the Agreement, created confusion amongst European researchers and the Commission.³⁶³ The resultant uncertainty regarding New Zealand's eligibility to participate in EU Framework Programmes arguably created further barriers to collaboration, as European researchers were unsure whether they could bring New Zealand partners into a project. Rick Petersen reiterates this point by stating that New Zealand's bilateral research partners have found it "more hassle than it's worth" to bring New Zealand researchers in on a Framework Programme project thanks to the absence of the STC Agreement.³⁶⁴

Misunderstandings regarding the Arrangement created additional problems with the launch of FP7. Under the new programme, STC Agreements hold more weight than in previous ones, where the eligibility criteria to respond to recent calls for proposals has included the need to possess such an Agreement.³⁶⁵ Langbein, for example, states that a Commission official referred to New Zealand's STC Arrangement as having "inferior" status to that of an Agreement, thus concluding that New Zealand would have fewer

³⁶² Langbein, interview, December 2006.

³⁶³ Langbein, interview, June 2007 and Glynn, interview, February 2008.

³⁶⁴ Petersen, interview.

³⁶⁵ Langbein, interview, June 2007.

opportunities to engage in FP7.³⁶⁶ The former New Zealand-EU STC Arrangement was thus no longer valid in terms of the contemporary climate. The dominant conclusion reached by MoRST's June 2006 *Assessment of the EU-New Zealand STC relationship* focused on the necessity to secure a formal STC Agreement³⁶⁷ and, in March 2007, MoRST Minister Steve Maharey and Janez Potočnik, the EU's Science and Research Commissioner, pledged to work towards upgrading the Arrangement to an Agreement.³⁶⁸ This Agreement, as outlined earlier, was signed between New Zealand and the European Community in July 2008. The upgraded Agreement allows for New Zealand researchers' full engagement in FP7 activities, whilst also removing the barrier presented by misunderstandings concerning the validity of the previous Arrangement.³⁶⁹

4.5 Assessing the future of the New Zealand-EU RS&T relationship

(i) Persisting collaborative bottlenecks

In upgrading New Zealand's STC Arrangement to an Agreement, MoRST has effectively removed a major barrier impeding New Zealand researchers' access to EU Framework Programme projects. Similarly, the creation of FRENZ in 2006 has also assisted in addressing problems presented by the previous lack of information concerning third country RS&T engagement with the EU. Moreover, these two initiatives naturally assist in raising the visibility of New Zealand's research capabilities within the EU, thus

³⁶⁶ Langbein, interview, December 2006.

³⁶⁷ Rick Petersen, "MoRST Assessment of the EU-New Zealand STC relationship", 03 September 2006, personal e-mail (03 September 2006).

³⁶⁸ CORDIS, *Different hemispheres, same ambitions: New Zealand and Europe*, http://cordis.europa.eu/fetch?CALLER=EN_NEWS_INTERVIEW&ACTION=D&DOC=9&CAT=NEWS&QUERY=1189498002662&RCN=27295 (05 September 2006).

³⁶⁹ Karla Falloon, "European Community-New Zealand Science and Technology Agreement", 17 July 2008, personal e-mail (17 July 2008).

addressing one of the central goals, and recurring themes, of New Zealand-EU RS&T activities.³⁷⁰ However, other factors still threaten to hamper effective engagement with the EU in this field. Stuart, for example, identified the associated factors of distance and a lack of internationally focused research funding as barriers to more effective New Zealand-EU RS&T engagement during the 1990s.³⁷¹

These two factors continue to influence New Zealand-EU RS&T collaboration today and constitute two additionally recurring themes which characterise the nature of the two parties' relationship in this field. MoRST has identified that "the EU will be an important source of funding and potential determinant of what becomes relevant science."³⁷² However, although the Ministry stated in 2005 that "...New Zealand's relationship with the EU will be the focus of a major government effort over at least the next three years...", Carole Glynn argues that MoRST's promotion of RS&T collaboration with the EU does not translate into Foundation for Research, Science and Technology (FRST) funding of such cooperation.³⁷³ For example, Glynn claims that FRST's International Investment Opportunities Fund (IIOF) was initially set up to overcome the asynchrony of deadlines between EU Framework Programme calls and available domestic funding.³⁷⁴ However, she states that this fund has now been essentially 'earmarked' for RS&T cooperation with Asia, regarding the way that the fund's evaluation process automatically ranks project submissions for collaboration with Asian partners at a higher rate than those proposing to work with Europe.³⁷⁵

³⁷⁰ Petersen, personal e-mail, July 2006.

³⁷¹ Stuart, *A Review of New Zealand collaboration in international science and technology*, 1 and 11.

³⁷² Petersen, personal e-mail, May 2006.

³⁷³ Glynn, interview, February 2008.

³⁷⁴ *Ibid.*

³⁷⁵ *Ibid.*

With reference to securing IIOF funding to collaborate with Europe in RS&T, Jill Stanley also states that “it’s just about impossible to get marks that would make it.”³⁷⁶ Furthermore, Stanley states that difficulties securing funding for travel also impacts upon a researcher’s ability to make personal contact with European researchers, thus identifying the influence that the combination of geographical distance and an absence of relevant funding has upon the ability to both forge new collaborative linkages and maintain existing ones.³⁷⁷ Returning to Carole Glynn’s earlier observation concerning the importance of personal links in international RS&T, this is an impediment that needs to be addressed given the fact that, despite the political initiatives of the New Zealand government and the European Commission in enhancing cross-border RS&T cooperation, personal linkages in this field remain of vital importance to a researcher’s ability to collaborate internationally.

A lack of available financial assistance regarding the internationalisation of New Zealand science is also exacerbated by unsatisfactory levels of funding for basic research. On 03 March 2008, 460 of New Zealand’s leading researchers representing universities, CRIs and independent research institutions, submitted an ‘open letter’ to MoRST Minister Pete Hodgson.³⁷⁸ The contents of the document focused on the need to increase the provisions of the Marsden Fund, New Zealand’s dominant basic research funding body. The fund’s current commitment of €18 million³⁷⁹ can afford to assist only seven percent of research applicants.³⁸⁰ In addition, the letter called for the government to bring

³⁷⁶ Stanley, interview.

³⁷⁷ *Ibid.*

³⁷⁸ Craig Borley, “Top Brains warn of NZ research ‘catastrophe’”, *The New Zealand Herald*, 04 March 2008, http://www.nzherald.co.nz/section/1/story.cfm?c_id=1&objectid=10495988 (11 August 2008).

³⁷⁹ Conversion of NZ\$39 million, as at 11 August 2008.

³⁸⁰ Borley, “Top Brains warn of NZ research ‘catastrophe’”.

its general RS&T investment into line with that of other OECD countries, to approximately three percent of GDP. Currently, the country's level of investment in this area sits at only one percent of GDP.³⁸¹

Referring back to George Stuart's identification of New Zealand's inability to recognise the potential applications of RS&T for other policies of national importance, the open letter's signatories also voiced this opinion. Victoria University's Professor Jeffery Tallon, for example, stated:

“...We need to wake up. Collectively in New Zealand we haven't got our heads around that we're in direct competition with the rest of the world. We're falling behind. It's a slow-burning catastrophe...”³⁸²

Indeed, Pete Hodgson agrees:

“...There is no doubt that our nation's future is dependent on a strong and enduring focus on science and technology and equally there is no doubt that as a nation we underrate the role that R&D [research and development] has played and will play...”³⁸³

As mentioned earlier, MoRST has enhanced its promotion of international RS&T opportunities. However, it is evident that New Zealand's researchers consider that the Ministry, and government, still do not recognise the value that science and technology can contribute to the country's international competitiveness and prosperity. In a world where “...the science and technology scene is moving quite quickly...”³⁸⁴, New Zealand's capacity in the field of RS&T stands to suffer, should this situation not be addressed. With respect to its engagement with the EU, a potentially declining level of research innovation and excellence will make participation in the highly competitive Framework Programme projects more difficult for New Zealand researchers.

³⁸¹ *Ibid.*

³⁸² Jeffery Tallon, as quoted *ibid.*

³⁸³ Pete Hodgson, “Science Funding”, *The Listener* 3548, no. 214 (2008).

³⁸⁴ *Ibid.*

Finally, Carole Glynn identifies misinformation as another major collaborative impediment to New Zealand participation in EU-led research programmes.³⁸⁵ Despite the fact that the newly signed STC Agreement dispels any confusion concerning the validity of New Zealand's former Arrangement, Glynn states that the circulation of misinformation concerning Framework Programme participatory rules remains a problem. For example, she mentions that many European researchers, who have been involved in previous Framework Programmes, "labour under the misapprehension of what can and can't happen" concerning assumptions made as a result of such previous experience.³⁸⁶ As a result, she states that a large part of her responsibilities as FRENZ Coordinator involve addressing such misinformation and disseminating the correct guidelines for third country Framework Programme participation amongst European and New Zealand researchers alike. However, Glynn stresses the need for the European Commission to update and coordinate the information disseminated by European NCPs in order to address this problem more cohesively.³⁸⁷

(ii) Recent and emerging New Zealand-EU initiatives in the field of RS&T

Emerging New Zealand and EU initiatives to enhance levels of RS&T engagement do present the opportunity to reduce the negative impacts distance and funding can have upon New Zealand researchers' international cooperation in the future. On 1 July 2007, the intergovernmental European Cooperation in Science and Technology (COST) initiative announced the launch of a two year pilot scheme to enhance links between

³⁸⁵ Glynn, interview, February 2008.

³⁸⁶ *Ibid.*

³⁸⁷ *Ibid.*

European and New Zealand researchers.³⁸⁸ More specifically, the venture provides for up to 20 travel grants of €2 500 each to assist with the travel costs of New Zealand and European researchers engaged in COST actions. Di McCarthy, Chief Executive for the Royal Society of New Zealand (RSNZ), states that:

“...The scheme is a pragmatic and much-needed initiative. Global scientific research still faces practical barriers such as a lack of funding for travel. This agreement helps alleviate some of those barriers and provides opportunities for face-to-face cooperation, which we know is so essential for effective and productive research collaboration...”³⁸⁹

Although separate from the Framework Programme, the priorities of the pilot project reflect those promoted in FP6 and FP7, thus focusing upon medical and health research; agriculture; forestry; biotechnology and food; nanotechnology; information and communications technology; and environment and climate change.³⁹⁰ As the initiative is still a work in progress, it is not yet feasible to deduce any final outcomes of the project. However, Jill Stanley considers New Zealand’s participation in this initiative as highly valuable, given the opportunity it provides to address issues regarding distance, funding and the facilitation of personal RS&T links in one go.³⁹¹

In a similar vein, Carole Glynn identifies FP7’s International Research Science and Exchange Scheme (IRSES) as another valuable tool to enhance international contacts and alleviate the impact distance and restricted domestic funding has upon New Zealand-EU RS&T cooperation.³⁹² With the first call for proposals to be published on 24 November 2008, the scheme fits within the broader framework of FP7’s Marie Curie

³⁸⁸ COST Office, “Kiwi and European scientists overcome tyranny of distance”, 1 July 2007, http://www.cost.esf.org/uploads/media/COST-New_Zealand_Pilot_Scheme.pdf, (7 August 2008).

³⁸⁹ Di McCarthy, as quoted *ibid.*

³⁹⁰ *Ibid.*

³⁹¹ Stanley, interview.

³⁹² Glynn, interview, February 2008.

mobility services. IRSES thus aims to strengthen connections between European research organisations and third country partners possessing an STC Agreement through the facilitation of staff exchanges and networking opportunities.³⁹³

However, whilst Glynn and Stanley consider the scheme a valuable opportunity, they both point out that New Zealand's domestic financial contribution of €70 000³⁹⁴ per annum will greatly restrict the number of New Zealand researchers able to participate. For example, Stanley states that at present, several IRSES proposals put forward by New Zealand research teams have received positive feedback on evaluation. However, she predicts that, should the proposals' European counterparts secure available EU finance, MoRST will be oversubscribed to provide New Zealand's side of the funding.³⁹⁵ Glynn therefore views participation in IRSES as "a great idea", but does not consider that MoRST's current level of commitment to the scheme will be effective in reaping any substantial collaborative benefits.³⁹⁶

In an attempt to address the asynchrony between EU Framework Programme proposals calls and domestic funding deadlines, as previously identified, Rick Petersen states that MoRST has recently committed to work towards a degree of harmonisation with the EU.³⁹⁷ More specifically, he refers to a recently secured agreement with DG RTD officials, which is predicted to involve the adoption of coordinated calls with New Zealand in mutually important areas of research, as one proactive example of MoRST's

³⁹³ EURResearch, "FP7 People: International Research Staff Exchange Scheme-IRSES", 10 July 2008, http://www.euresearch.ch/fileadmin/documents/PdfDocuments/Callfiches/CF_People-IRSES_08.07.10_fz.pdf (8 August 2008).

³⁹⁴ Conversion of NZ\$150 000, as at 11 August 2008.

³⁹⁵ Stanley, interview.

³⁹⁶ Glynn, interview, February 2008.

³⁹⁷ Petersen, interview.

activities in this area.³⁹⁸ Petersen states that the initiative is still very much in the beginning stages, with the final shape of the project not yet set, but it is expected that the two parties will select projects to be supported and provide the funding for them within their own systems.³⁹⁹ The creation of this initiative is therefore a major breakthrough for New Zealand researchers in the way it manages to address primary barriers to RS&T cooperation with Europe. With each party pledging to attach funds to selected priorities, researchers will be guaranteed funding should their proposal be accepted. Moreover, as the coordinated call allows the scheme to operate on the same time frame and be subject to the same evaluation processes, it will thus bypass difficulties created by asynchronous funding and proposal deadlines.⁴⁰⁰

Finally, New Zealand RS&T has recently seen fundamental changes at the domestic level, which, in turn, will naturally enhance the country's international activities in this field. On 11 March 2008, New Zealand's Labour-Progressive government announced the launch of the 'New Zealand Fast Forward' scheme, which will go some way to addressing the concerns expressed by New Zealand researchers in their open letter to Pete Hodgson. New Zealand Fast Forward, more specifically, will consist of a €325 million⁴⁰¹ commitment on behalf of the government and will be matched by funds from New Zealand industry.⁴⁰² Predicted to span over the next ten to fifteen years, it is expected that available governmental funds for the initiative could reach up to €465 million⁴⁰³ which, when combined with the financial commitment from New Zealand

³⁹⁸ Langbein, interview, December 2006.

³⁹⁹ Petersen, interview.

⁴⁰⁰ Langbein, interview, December 2006.

⁴⁰¹ Conversion of NZ\$700 million, as at 11 August 2008.

⁴⁰² Ministry of Agriculture and Fisheries, "New Zealand Fastforward", <http://www.maf.govt.nz/mafnet/new-zealand-fast-forward/nz-fast-forward-overview.pdf> (11 August 2008).

⁴⁰³ Conversion of NZ\$1 billion, as at 11 August 2008.

industry, will equate to total of €929 million.⁴⁰⁴ New Zealand Prime Minister, Helen Clark, states that this fund will constitute one of the largest investments in research in the country's history.⁴⁰⁵

The initiative is part of the Labour-Progressive government's larger 'economic transformation agenda', which aims to "...transform the New Zealand economy into a smart, sustainable, high value supplier of the goods and services which global markets demand..."⁴⁰⁶ Consequently, the scheme has targeted the pastoral and food primary sector industries in a bid to build upon their existing competitive advantage in this field.⁴⁰⁷ More specifically, the criteria for investment have been identified as the development of sustainable pastoral systems; research and education capability; food innovation clusters; and internationalisation.⁴⁰⁸ To date, Fonterra, Meat and Wool New Zealand, Zespri, Dairy New Zealand and PGG Wrightson have committed their participation from the side of New Zealand industry.⁴⁰⁹

With respect to the EU, New Zealand gains from the domestic commitment to further develop research excellence in this field, concerning the new scheme's ability to enhance the country's international research competitiveness as a whole. By building upon existing strengths in research, New Zealand's currently sought-after expertise in agricultural and food innovation should become even more visible within Europe. In addition, New Zealand stands to reap economic and trade benefits through the

⁴⁰⁴ Conversion of NZ\$1 billion, as at 11 August 2008, and Ministry of Agriculture and Fisheries, "New Zealand Fastforward".

⁴⁰⁵ Helen Clark, "Launch of New Zealand Fast Forward".

⁴⁰⁶ *Ibid.*

⁴⁰⁷ Ministry of Agriculture and Fisheries, "New Zealand Fastforward".

⁴⁰⁸ *Ibid.*

⁴⁰⁹ Clark, "Launch of New Zealand Fast Forward".

development of these research capabilities, given that the Union also constitutes New Zealand's second largest trading partner.⁴¹⁰ For example, Helen Clark states that:

“...consumers in affluent markets have rising expectations about the quality of the food they consume and the way it is produced. We can expect ever more focus on the functionality of food and on the extent to which it is sustainably produced and supplied...”⁴¹¹

Referring to the thematic priorities of FP6 and FP7, with their foci on areas such as innovation in food, agriculture and sustainable development, it is possible to observe that the EU constitutes such an ‘affluent market’. Tailoring scientific innovations to the demands of such a market, the Fast Forward venture thus signals that New Zealand has succeeded in recognising the way in which RS&T can complement economic, health and social issues of national priority.

4.6 Conclusion

The chapter began by outlining the provisions of New Zealand's 1991 STC Arrangement with the EU in RS&T and illustrated why early collaboration in this field was limited. Drawing on the findings of Stuart's 1991 review of New Zealand's international science strategy, factors impeding effective New Zealand-EU engagement in research were identified as those of geographical distance and an absence of internationally-focused domestic funding. In addition, Stuart attributed the New Zealand government's inability to consider the relevance of scientific innovation to other areas of national priority as further inhibiting international cooperation in science and technology.⁴¹²

⁴¹⁰ Benson-Rea and Mikic, “New Zealand-Europe Trade Relations”, 21.

⁴¹¹ Clark, “Launch of New Zealand Fast Forward”.

⁴¹² Stuart, *A Review of New Zealand collaboration in international science and technology*, 12-13.

In 2008, the contribution of RS&T to the economic and social development of New Zealand has been recognised. MoRST's 2004-2007 International Strategy reveals that New Zealand produces less than 0.2% of the world's activity in RS&T. To promote development in areas of national priority such as the economy, health and the environment, it is essential for New Zealand to be able to access a larger proportion of science and technology activities. Additionally, in terms of New Zealand's status as a small, geographically isolated, industrialised nation, scientific collaboration at the international level is now recognised for its ability to provide access to expertise, high cost research facilities and new technologies that will enable New Zealand to enhance its own RS&T capabilities. The Labour government's economic transformation agenda, combined with the provisions of the 2008 New Zealand Fast Forward scheme, can be seen as an attempt to improve New Zealand's rate of productivity as compared to its competitors.⁴¹³ Moreover, with respect to the EU, Europe's integrated science and technology network, coupled with a new emphasis on the importance of international collaboration, provides a valuable opportunity for New Zealand researchers to access Europe's technological resources and expertise.

However, although New Zealand has now recognised the relevance of RS&T to other goals of national priority, aforementioned factors regarding distance and funding still threaten to impede researchers' attempts to collaborate with the EU. Added to these, as identified throughout this chapter, are problems concerning a lack of visibility within the EU, a lack of credible information as to the Framework Programme's provisions for cross-border partnerships, asynchrony between European and New Zealand proposal and

⁴¹³ Scoop, "Mallard: Economic Transformation", *Parliament*, 30 August 2006, <http://www.scoop.co.nz/stories/PA0608/S00531.htm> (6 September 2006).

funding deadlines and, finally, recognition of the vital role that personal linkages still play in New Zealand-EU research collaboration. These issues constitute recurring themes not only within this dissertation, but also regarding the wider scope of the New Zealand-EU RS&T relationship. In light of the combined activities MoRST, FRENZ and the Brussels-based Science Counsellor are continuing to undertake in order to forge stronger links with the EU in this field, hopes are nevertheless high that Europe will continue to look toward New Zealand for partnership, and that it will do so more often.

Chapter 5

A comparative study of selected third countries' engagement with the EU in RS&T: Canada, Australia and New Zealand

5.1 Introduction

In the preceding chapter, the focus was placed upon assessing New Zealand's engagement with the European Union (EU) in the field of Research, Science and Technology (RS&T) to 2008. Whilst progress has indeed been made in strengthening RS&T cooperation, there is room for improvement. However, New Zealand has not been the only non-associated third country to face difficulties concerning access to EU Framework Programmes. Former Canadian Science Counsellor, Paola de Rose, stated in a 2004 CORDIS release that the Sixth Framework Programme (FP6) "...is not designed for collaboration outside the EU and it is often an uphill struggle for third countries to get involved in FP6 projects..."⁴¹⁴ Jean-Francois Desvignes-Hicks, project manager of the Forum for European-Australian Science and Technology cooperation (FEAST), mentions that although the EU is Australia's largest RS&T partner, the figures are derived from collective collaboration with individual Member States, rather than with the EU as a whole.⁴¹⁵ Moreover, even the United States (US), as the EU's main RS&T competitor, has found it difficult to engage with the EU. Indridi Benediktsson, Science Officer for Horizontal Aspects and Coordination within Research and Technological Development (RTD) Health, outlines that although the EU receives the largest amount of Framework

⁴¹⁴ CORDIS, "Canada to tackle low participation in framework programmes with new EU-Canada cooperation office", <http://cordis.europa.eu/express/archive/100904/summary.htm#aaa> (03 September 2007).

⁴¹⁵ J. Desvignes-Hicks, interview by author, Delegation of the European Commission to Australia and New Zealand, Canberra, 12 April 2007.

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Programme proposals from the US, it lags behind other third country RS&T players such as China concerning project proposal success rates.⁴¹⁶

In order to assess New Zealand's own level of involvement with the EU, this section examines other non-associated industrialised third countries' collaborative experiences with the Union in the field of RS&T. Canada and Australia were selected as appropriate third country models to compare with New Zealand, in terms of their similarities in background, values, interests and priorities. The chapter then investigates a series of barriers to RS&T collaboration with the EU and examines the selected third countries' responses and initiatives adopted to address these issues, in turn determining their potential to be adapted to New Zealand's situation. In doing so, this chapter draws upon data collected through interviews with key-informants recognised for their involvement in strengthening Canadian, Australian and New Zealand linkages with the EU in RS&T.

5.2 Identifying Appropriate Case-Studies: Canada and Australia

(i) Canada

As the world's twelfth largest economy,⁴¹⁷ Canada may not immediately appear to be an appropriate example with which to compare New Zealand's collaborative experiences with the EU once New Zealand's constrained RS&T resources are taken into account. Moreover, the research investment structures of the two countries differ greatly. At present, New Zealand investment in RS&T is drawn largely from government funding,

⁴¹⁶ Indridi Benediktsson, interview by author, Research Directorate General, Brussels, 3 July 2007.

⁴¹⁷ *Ibid.*

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yet public sector RS&T investment is recorded at 0.52 percent and is thus almost 25 percent below the Organisation for Economic Cooperation and Development (OECD) average.⁴¹⁸ Moreover, private sector investment amounts to a third of the OECD average and contributes only one third to New Zealand's total RS&T investment. In contrast, other OECD countries' private investment in this field typically constitutes at least two thirds of the total.⁴¹⁹ By brief comparison, the Canadian business sector accounts for 47 percent of total RS&T investment whilst the government, as the second largest funding provider, accounts for 18 percent.⁴²⁰

The federal structure of Canada's government also means that RS&T policy must be formulated in a different way compared with New Zealand's policy making system.⁴²¹ The Canadian government, for example, does not possess the equivalent of New Zealand's Ministry of Research, Science and Technology (MoRST). Instead, responsibility in this field is divided between its 23 federal agencies.⁴²² The Canadian government's approach to science policy therefore does not utilise a single driving force and instead operates in a decentralised way.⁴²³

However, there are many similarities that allow for comparison. Referring to New Zealand's relationship with Canada, the Ministry of Foreign Affairs and Trade (MFAT) states that:

⁴¹⁸ Langbein, personal e-mail.

⁴¹⁹ New Zealand Ministry of Research, Science and Technology, "Background Paper to: Science for New Zealand's Future... picking up the pace...", <http://www.morst.govt.nz/Documents/work/pace/Pace-Background-1-Long-Term-Sustainable-RST-Funding.pdf> (21 March 2006).

⁴²⁰ Ontario, "R&D Profile: Total spending on R&D in Canada by Performing and Funding Sectors", http://www.2ontario.com/welcome/bcrd_507.asp (02 April 2006).

⁴²¹ De Rose, interview.

⁴²² *Ibid.*

⁴²³ *Ibid.*

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“...Our shared Commonwealth heritage, parliamentary, legal and defence traditions, as well as people to people contacts engender a similar world view and we tend to identify with each other's interests and concerns...”⁴²⁴

In terms of Commonwealth heritage, Paola de Rose emphasises the fact that Canada was built by immigration and therefore enjoys a huge “spontaneous connection” with former colonial powers, namely Britain and France. De Rose sees this as an important component as regards involvement in EU RS&T ventures.⁴²⁵ This situation similarly applies to New Zealand and its researchers with regards to relations with the United Kingdom (UK). Unlike the bilateral RS&T relationships that New Zealand has forged with Germany and France, no formal arrangement exists between the UK and New Zealand regarding cooperation in science. Nevertheless, 28 percent of New Zealand-based researchers work with partners from Britain and MoRST states that “...research links with Britain have profoundly influenced this country's research effort”, foreseeing that the UK shall remain a key RS&T partner in the future.⁴²⁶

(ii) Australia

In comparison, Australia's experiences in engaging with the EU provide an even closer comparison. Australia is similarly disadvantaged by the ‘tyranny of distance’ concerning its relations with Europe. In addition, Benson-Rea and Mikic state that the relationship between Europe and both Australia and New Zealand “...is one of unequal partners...”⁴²⁷ However, Australia is akin to both Canada and New Zealand in the way that, despite

⁴²⁴ New Zealand Ministry of Foreign Affairs and Trade, “Canada”, <http://www.mfat.govt.nz/Countries/North-America/Canada.php> (21 September 2007).

⁴²⁵ De Rose, interview.

⁴²⁶ New Zealand Ministry of Research, Science and Technology. “United Kingdom”, *Global Relationships*, <http://www.morst.govt.nz/international/global/uk/> (15 September 2007).

⁴²⁷ Benson-Rea and Mikic, “New Zealand-Europe Trade Relations”, 24.

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these issues, similar values and historical ties manage to ensure that a relatively close relationship between the two continents prevails. The Joint Declaration on Relations Between the EU and Australia, signed on 26 June 1997, helps to illustrate this fact by referring to “...close historical, political, economic and cultural ties...”, “...shared commitments to the respect and promotion of human rights, fundamental freedoms, democracy and the rule of law...”, “...our common interest in international peace, security and stability, and in sustainable development...”, and “...our common commitment to free and open market principles...”⁴²⁸

In this way, Australia shares New Zealand's predicament by finding itself in a situation where, although geographically placed within the Asia-Pacific, Australia maintains a strictly Western identity.⁴²⁹ Brenner states that although collaboration with countries in the Asia-Pacific region is an increasing priority for Australia, enduring historical ties have helped to ensure that research links with Europe remain strongest.⁴³⁰ He also associates more recent influences, such as the continued integration and enlargement of the EU and the creation of the European Research Area (ERA), as factors that have increased Europe's attractiveness as a research partner.⁴³¹ To support this finding, Brenner's report discloses that, of Australia's international research collaborations, 38 percent of those are with European partners. Partnerships with Asia/Southeast Asia are recorded at 28 percent, whilst the US registers at 23 percent. Australia's expenditure on international research collaboration echoes these figures,

⁴²⁸ Philomena Murray, “Appendix 1: Joint Declaration on Relations Between The European Union And Australia”, in *Australia and the European Superpower: Engaging with the European Union*, (Melbourne: Melbourne University Press, 2005), 272.

⁴²⁹ Benson-Rea and Mikic, “New Zealand-Europe Trade Relations”, 24.

⁴³⁰ Karsten Brenner, *Forum on European-Australian Science and Technology cooperation (FEAST) Assessment Report*, http://ec.europa.eu/research/iscp/pdf/feast-assessment-report_en.pdf, (18 April 2006).

⁴³¹ *Ibid.*

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placing spending on cooperation with Europe at 34 percent, Asia/Southeast Asia at 32 percent and the US at 25 percent.⁴³² Today, the EU is Australia's largest partner in terms of both trade and RS&T collaboration.

Regarding Australia's RS&T profile within the EU, it is evident that Australia is much more visible than New Zealand. Australia possesses a Science and Technological Cooperation (STC) Agreement, as compared to New Zealand's Arrangement, and New Zealand's former Science Counsellor, Melae Langbein, also stresses that Australia managed to recognise the EU's new role in world politics from an early stage. Thus, Australia has pursued a relationship with the Union in a more systematic manner. Langbein also states that Australia managed to tap into the European diaspora and, through hiring Europeans in the RS&T sector, thus expanded the country's international linkages by using the new networks available to them. In addition, Langbein says that Australia was quicker to appreciate the value of the Framework Programme.⁴³³ Brenner's study supports this comparison. New Zealand, as illustrated by Stuart's findings concerning international scientific collaboration in the early 1990s, originally forged scientific cooperation arrangements for diplomatic purposes and has only increased its levels of engagement with the EU in RS&T since 2004. However, Brenner states that Australia recognised the importance of engaging with the international science community at an early stage, due to the country's disadvantages regarding population size and isolation. Moreover, Brenner says that the Australian government and research community have realised that:

⁴³² *Ibid.*

⁴³³ Langbein, interview, December 2006.

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“...in times of a global knowledge economy and society first-class relevant research can only be done as an active and recognised part of the international scale, in networks and collaboration with the best partners world-wide...”⁴³⁴

As discussed in further detail in the following sections, Canada and Australia have also experienced similar problems in effectively engaging with the EU in RS&T as a non-associated third country. Moreover, Canada and Australia have also deployed a series of comparable approaches to those that New Zealand has recently begun to develop. The STC Agreement, the installation of a Science Counsellor in Brussels and the creation of information points ERA-Can (the European Research Area and Canada) and FEAST are cases in point. Hence, as countries with longer histories in RS&T collaboration with the EU, the two prove to be appropriate and useful studies to compare New Zealand's experiences with. More importantly, such comparison helps to examine ways to apply responses and initiatives that are identified as constructive in enhancing third countries' RS&T relationships with the EU.

5.3 Common barriers, common responses? Canada, Australia and New Zealand

(i) Visibility

With respect to RS&T collaboration with the EU, Canada and Australia have faced similar problems to New Zealand in their attempts to access EU Framework Programme projects. In the context of a globalised world and the creation of increasingly knowledge-based societies, no single country can be a sole operator in RS&T. Although the US remains the key player in this field, the EU has assumed a higher degree of importance

⁴³⁴ Brenner, *FEAST Assessment Report*, 6.

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geopolitically and as a market. Thus, the Union's efforts to raise its competitiveness as a world player in science and technology have not gone unnoticed by interested third parties. With particular regard to the EU's attempts to foster international cooperation, countries such as Canada, Australia and New Zealand have thus sought to access what Europe has to offer in RS&T.

However, as mentioned above, former Canadian Science Counsellor Paola de Rose considers cooperation with the EU in RS&T to be particularly difficult for non-associated third countries in general. De Rose states that although Canada has fashioned itself as a world player, with an important geopolitical role as a balancing power and champion of multilateralism, its global influence is declining. Furthermore, the country is a much smaller world player when compared with the EU's economic and geopolitical influence. Canada's potential as an RS&T partner thus inevitably suffers from a lack of visibility within the EU.⁴³⁵

When asked to assess factors influencing the difficulty in attracting the EU's attention, de Rose suggests that the Union is still very much preoccupied with internal matters: "the EU is big, dynamic, keeps changing and keeps adding."⁴³⁶ As expressed in chapter two, candidate countries, associate countries, International Cooperation Partner Countries (ICPC), the Mediterranean and near neighbours make up various EU priority partners, which all require attention. As a result, these more pressing priorities partially obscure non-associated third countries from view.

With respect to RS&T in particular, the EU is highly focused on boosting its internal performance. De Rose states that Member State RS&T investment and output

⁴³⁵ De Rose, interview.

⁴³⁶ *Ibid.*

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remains particularly varied and thus the Union is faced with the challenge of bringing the 'laggards' in research up to par. The EU's motivation to increase its competitiveness in this discipline also ties in with what de Rose suggests to be a 'US obsession' on the part of the EU: "the EU is always looking at the US and seeing how it could improve".⁴³⁷ De Rose states that this obsession, or phobia, is partly built on a dislike for US hegemony and the US approach to geopolitics, involving the exploitation of available resources and the spread of its world view and culture.

Australia's Senior Science and Research Officer in Brussels, Michaela Bauer, echoes de Rose's views concerning EU preoccupations. Bauer states that Australia and New Zealand have faced similar challenges in terms of visibility on the 'EU radar', as Europe is heavily focused on the big players in RS&T as well as the newly emerging economies.⁴³⁸ Stephen Payton, former Deputy Head of the New Zealand Mission to the EU, supports this sentiment. Payton asserts that RS&T as a discipline has evolved since the creation of the Lisbon Agenda in 2000. Given the emergence of additional competent players in this field, such as Japan, China and India, the Union has become increasingly concerned with staying ahead of its competitors. Furthermore, the EU is faced with the possibility that the structures created at Lisbon, to foster increased competitiveness in RS&T, have calcified and are no longer functioning correctly.⁴³⁹ Payton identifies the EU's efforts to mirror US success in the commercialisation of research, as well as its

⁴³⁷ *Ibid.*

⁴³⁸ Michaela Bauer, interview by author, Australian Mission to the European Union, Brussels, July 2007.

⁴³⁹ Stephen Payton, interview by author, New Zealand Mission to the European Union, Brussels, 10 July 2007

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attempts to overhaul its internal educational structures, as a further example of its preoccupation with potential competition.⁴⁴⁰

Thus, given the EU's present level of internal preoccupation, it is evident that the Union finds it difficult to reach out and engage with third countries that do not require immediate attention.⁴⁴¹ In terms of an appropriate third country response to this situation, de Rose sees it as imperative to understand the EU's stance on these issues, accept that countries such as Canada, Australia and New Zealand are small players in comparison and make concessions accordingly.⁴⁴² Lynne Hunter, Adviser to the Australian Delegation of the European Commission, reiterates this point. The Framework Programme is Europe's programme and so, she states, the EU is by necessity focused on Europe. To maintain visibility in such an environment, Hunter argues that:

“You've got to have people banging on other people's doors... which is why it's essential that you have a Counsellor on the ground there... If you want to be noticed, you have to make those personal contacts and maintain them... If you're not there, it's not that we're not interested, it's just that other people will be there to fill the gap.”⁴⁴³

New Zealand's former Science Counsellor also supports this point of view by drawing attention to the need for third countries to have a realistic assessment of their size as compared to the EU. With specific reference to New Zealand's geopolitical standing on the world stage, Langbein goes on to state:

“New Zealand is small, far away and doesn't enter the EU radar concerning future potential as a world power... We have to recognise that and that we have more to lose in terms of not having a relationship. We need to do more of the running to keep making it easy for the EU to engage with us...”⁴⁴⁴

⁴⁴⁰ *Ibid.*

⁴⁴¹ De Rose, interview.

⁴⁴² *Ibid.*

⁴⁴³ Lynne Hunter, interview by author, Australian Delegation of the European Commission, Canberra, 12 April 2007.

⁴⁴⁴ Langbein, interview, July 2007.

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In raising third country visibility within the EU, Desvignes-Hicks stresses the need to promote RS&T successes and “show Europeans that it’s not just about kangaroos and kiwis”.⁴⁴⁵ Unless European researchers have completed a PhD, or some other form of work experience, with someone from Australia or New Zealand, Hunter states that these researchers will not necessarily look to either country for partners given the wealth of excellence closer to home.⁴⁴⁶ Desvignes-Hicks states that a third country wanting to engage with the EU needs to demonstrate the benefit, or added value, of bringing an outside partner into a Framework Programme project.⁴⁴⁷ Bauer claims that niche capabilities are important here and, more specifically, that the Australian and New Zealand geographic location is still an important factor. The climate, geography, oceanic environment, access to Antarctica and connections with the Asia Pacific have all brought European researchers out to Australia and New Zealand to work with local researchers.⁴⁴⁸

Placing New Zealand-EU RS&T cooperation within the selected theoretical framework, de Rose claims that the importance of engaging in research relating to the Union’s social priorities cannot be overemphasised. De Rose claims that working on files such as development, health and the environment, where science underpins the Union’s geopolitical objectives, does a lot to raise a country’s profile in the EU. Identifying which of these areas New Zealand can participate in, and demonstrating support for the EU in its priority fields, would therefore signify much in the way of commitment to the Union’s ideals.⁴⁴⁹ The environment, in particular, is certainly an area of high mutual priority.

⁴⁴⁵ Desvignes-Hicks, interview.

⁴⁴⁶ Hunter, interview.

⁴⁴⁷ Desvignes-Hicks, interview.

⁴⁴⁸ Bauer, interview.

⁴⁴⁹ De Rose, interview.

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Ensuring that New Zealand remains visible as a willing participant in this field would assist in promoting local researchers as desirable partners in EU Framework Programme consortiums.

(ii) Funding

De Rose stresses that an additional way for a non-associated third country to “get noticed” in the busy EU environment is for that country to “pay its own way in” and participate on a self-funding basis. According to de Rose, funding is a “huge issue” and she claims that if researchers are able to acquire adequate investment then it is much easier to make third-country-EU RS&T collaboration happen.⁴⁵⁰ Indridi Benediktsson echoes de Rose’s emphasis on the importance of self-funded project participation, stating that the inclusion of a self-funded third country partner renders the process of creating a research consortium much simpler. Third country researchers will therefore be more likely to gain access to Framework Programme projects. Benediktsson goes on to outline the added benefit of a self-funded third country partner, as it allows the integration of another partner without reducing the overall funding. The project, therefore, gains not only additional expertise but also supplementary funding.⁴⁵¹

Funding issues are linked to other barriers to international RS&T cooperation, in terms of a lack of both information on available funding and the funds themselves. De Rose sees third countries’ lack of awareness concerning Framework Programme rules for international collaboration as a real problem and identifies the issue of self-funding as a specific component of this. De Rose suggests that third countries need to publicise the

⁴⁵⁰ *Ibid.*

⁴⁵¹ Benediktsson, interview.

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Framework Programmes and better communicate clear and detailed information on issues such as the rules of engagement, proposal requirements, legal liability and intellectual property.⁴⁵² Melae Langbein suggests that it is important to understand that the Framework Programmes are funded by the European tax-payer, for the benefit of Europe, and third country researchers should not expect to have their involvement funded by Europe.

In turn, this can create problems for researchers who are unaware of the participatory rules in EU Framework Programmes. During his visit to New Zealand in 2006 to attend the inaugural Joint Science and Technology Cooperation Committee (JSTCC) meeting, Indridi Benediktsson identified a lack of awareness of Framework Programme opportunities within the domestic research community. Benediktsson states that although individual New Zealand researchers expressed interest in the opportunities presented by RS&T cooperation with the EU, this interest waned when they found that participation would only be funded by the EU should their involvement be regarded as critical to a particular project.⁴⁵³ Canada, de Rose states, hampered its own involvement in EU RS&T collaboration through the promotion of cooperation which its government could not provide funding for. For this reason, Canada's potential as a desirable partner in the eyes of European researchers was initially decreased.⁴⁵⁴ Melae Langbein states that: "we need to walk the talk and never promise more than we can do"⁴⁵⁵, thus stressing the importance of avoiding a similar situation.

⁴⁵² De Rose, interview.

⁴⁵³ *Ibid.*

⁴⁵⁴ *Ibid.*

⁴⁵⁵ Langbein, interview, July 2007.

(iii) Distance

Finally, a component in spurring on the creation of ERA-Can was Canada's distance to the EU and the subsequent difficulties in attaining the personal linkages necessary to create international partnerships.⁴⁵⁶ Australia and New Zealand are even further removed geographically and, as such, distance proves to be a greater hurdle to local researchers. This 'tyranny of distance' has been discussed in the previous chapter, where it was shown that although the world has become better connected, person to person contacts in the field of science are still of utmost importance. Facilitating Research cooperation between Europe and New Zealand (FRENZ) Director, Carole Glynn, emphasises that informal contacts are crucial and, as part of her role within the initiative, aims to work with researchers' existing linkages due to the importance of trust concerning collaborative contacts between scientists.⁴⁵⁷

As a result, distance, in combination with limited access to funding, means that it can be difficult for New Zealand's researchers to network effectively at the international level. De Rose draws attention to the absence of a formal mechanism for linking scientists, stating that the assumption that scientists are always well connected can mean that not enough is done on the part of both the EU and third countries to facilitate better networking. She identifies young researchers as particularly vulnerable in this environment but states that although attempts have been made to address the issue, no best approach has yet been identified.⁴⁵⁸

⁴⁵⁶ Communications Research Centre Canada, "340,000 Euro for ERA-Can", *News*, http://www.crc.ca/en/html/crc/home/partners/ncp/news/era_can_mar2005 (04 September 2007).

⁴⁵⁷ Glynn, interview, June 2006.

⁴⁵⁸ De Rose, interview.

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The preceding section has focused on common problems affecting the collaborative efforts in RS&T of Canada, Australia and New Zealand and the way in which each has interpreted these issues within the context of their relationship with the EU. The following section addresses particular initiatives such as the Science and Technological (STC) Agreement, ERA-Can, FEAST and FRENZ. It also explores programmes intended to address increasing levels of private investment and harmonisation in RS&T, designed to combat the abovementioned barriers to international cooperation and boost third country RS&T engagement with the EU.

5.4 The Science and Technological Cooperation Agreement

(i) Australia

Australia proves to be an interesting test case in assessing the importance of possessing an Agreement, as opposed to the Arrangement which had governed New Zealand's RS&T relations with the EU to July 2008. Although Australia's formal Agreement with the EU was not signed until 1994, this document differs from New Zealand's initial Arrangement as it falls under the category of Australia's 'Treaty Series' and is thus legally binding.⁴⁵⁹ Moreover, with regard to its position as an industrialised country, Australia's STC Agreement was the first of its kind to be signed with the EU.⁴⁶⁰ Philomena Murray's *Australia and the European Superpower: Engaging with the European Union* addresses the gap in literature on the Australia-EU relationship and draws attention to the changing focus of engagement between the two. Murray states that,

⁴⁵⁹ Department of Foreign Affairs and Trade, "Australian Treaty Series 1994 No 24", <http://www.austlii.edu.au/other/dfat/treaties/1994/24.html> (05 April 2007).

⁴⁶⁰ Brenner, *FEAST Assessment Report*, 5.

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as with New Zealand, agriculture has “dominated the agenda” regarding engagement with the EU.⁴⁶¹ However, she draws attention to the fact that, since the 1980s, the relationship has diversified and matured. Murray lists the formation of a series of accords on nuclear transfers, wine, scientific and technical cooperation, mutual recognition of conformity assessment and consumer protection as examples.

Australia's STC Agreement with the EU is of a new breed of EU-third country agreements, of which Australia has been the first to be approached. However, departing from those arguments promoting Australia as an attractive RS&T partner, Murray claims that these agreements were made because Australia “...is a small country and was regarded as unlikely to cause major problems with these agreements...”⁴⁶² She also identifies an opinion from a publication which proposed that such agreements were signed with Australia first “...for the very reason that Australia is not the USA... or China...”, thus essentially rendering Australia a ‘guinea-pig’ as regards the EU's initial intent behind the formation of such agreements.⁴⁶³

Desvignes-Hicks, however, disputes this argument. He states that factors such as size, capacity, capability and access to resources all vary from country to country and in that sense it is impossible to design the same type of agreement to extend further to other countries, such as the US or China.⁴⁶⁴ Lynne Hunter supports this point of view by drawing on the example of FEAST. Although the initiative was a pilot project, the EU was not looking to identify a test case, as shown by the way in which the process was encompassed within the competitive environment of the Fourth Framework Programme

⁴⁶¹ Murray, *Australia and the European Superpower*, 82.

⁴⁶² *Ibid*, 82-83.

⁴⁶³ *Ibid*, 83.

⁴⁶⁴ Desvignes-Hicks, interview.

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(FP4) channels.⁴⁶⁵ It was the success of the project that saw tailored versions extended to other targeted third countries. The European Researchers Abroad (ERA-Link) project, which works to link US researchers with Europe through networking, the provision of information and career assistance, provides another example of a pilot project that proved successful and resulted in the European Commission's intent to extend similar projects to other interested parties.⁴⁶⁶

Nevertheless, regardless of the notion that a certain amount of Australia's attractiveness concerning partnerships with the EU may be attributed to its role as "road-tester", these initiatives have allowed Australia to reap benefits in EU RS&T cooperation. Australia's experience, like the Canadian one, demonstrates the importance of establishing that initial level of visibility which, in turn, opens doors for further collaborative opportunities. Being made the focus for both the first STC Agreement and the FEAST programme launch has meant that Australia has had the opportunity to build up its relations with the EU over a considerable period of time.⁴⁶⁷ For example, as Philomena Murray illustrates, the formation of the 1994 STC Agreement granted admission to the EU Framework Programmes on a self-funding basis, whilst also opening up access to Australian research and development to Europe.⁴⁶⁸ FP4 was the first in which Australia participated; 34 collaborative projects, worth €40 billion, took place. A minimal increase to 38 projects was seen with Australian participation in the Fifth Framework Programme (FP5) but the combined value of these projects was much higher,

⁴⁶⁵ Hunter, interview.

⁴⁶⁶ Desvignes-Hicks, interview.

⁴⁶⁷ Bauer, interview.

⁴⁶⁸ Murray, *Australia and the European Superpower*, 83.

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at €200 billion.⁴⁶⁹ Better still, FP6 saw the inclusion of Australian participants in over 100 projects.⁴⁷⁰ Finally, the launch of the Seventh Framework Programme (FP7) has seen the Framework Programme internationalised to an even greater degree. Hunter and Desvignes-Hicks stress that the goal is to increase Australian involvement even further within this seventh instalment.⁴⁷¹

(ii) Canada

From Canada's experience in operating under the framework of an STC Agreement, it is important to recognise that its success depends very much upon how effectively a country can utilise the opportunity. De Rose concedes that the Agreement certainly acted as a 'door opener'⁴⁷², especially with regard to earlier Framework Programmes, where participation was dependent upon the existence of such an Agreement.⁴⁷³ De Rose identifies Canada's participation in ERA-Can, New Opportunities for Research Funding Agency Cooperation in Europe (NORFACE) and the European Research Area on Society Aspects of Genomics (ERA-SAGE), as specific examples of 'spin-off' benefits arising from entering into an STC Agreement with the EU.⁴⁷⁴

More specifically, ERA-SAGE investigates the ethical, legal and social aspects (ELSA) of genomics. Consisting of a consortium of funding agencies from the UK, Austria, Norway, Finland, Germany, Israel, Switzerland and Canada, the programme works towards a common goal of increasing the coordination and cooperation of its

⁴⁶⁹ *Ibid.*

⁴⁷⁰ FEAST, "Introduction to FP7", <http://www.feast.org/fp7/> (5 April 2007).

⁴⁷¹ Hunter and Desvignes-Hicks, interview.

⁴⁷² De Rose, interview.

⁴⁷³ *Ibid.*

⁴⁷⁴ *Ibid.*

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members' national programmes in the chosen discipline.⁴⁷⁵ In turn, NORFACE is made up of twelve research funding councils from Estonia, Denmark, Finland, Germany, Iceland, Ireland, the Netherlands, Norway, Portugal, Slovenia, Sweden and the UK. Canada is an associate partner of the initiative and, with a focus on its members, NORFACE aims to coordinate research, funding and policy development in Europe.⁴⁷⁶ As discussed in section 5.7, entering into such initiatives constitutes one aspect of Canada's attempts to harmonise its domestic research with the EU's.

Possessing an STC Agreement also formalises the relationship between governments and provides the opportunity to have science and technology on the agenda. The creation of the JSTCC as a component of the Agreement ensures that the two parties are brought together annually to discuss RS&T issues. However, de Rose stresses that the Agreement does not act as an ultimate solution to addressing problematic issues in international RS&T collaboration. Despite the formalisation of the relationship, there is no provision of a strategy and no money attached to the Agreement. Moreover, the effectiveness of the JSTCC relies on how proactive the two parties are. With specific reference to Canada, de Rose mentions that the Heads of the Delegations, although often high-ranking representatives, do not necessarily possess expertise in the field of science or research policy. De Rose asserts that the briefing notes provided for the annual meeting are often inadequate in terms of the depth of the issues and thus the meetings are not necessarily constructive.⁴⁷⁷ Canada is not unique in this sense. Lynne Hunter states

⁴⁷⁵ Social Sciences and Humanities Research Council of Canada, "Canadian GE³LS Research Funding – Articulating Best Practices and Exploring Future Directions", <http://www.genomecanada.ca/erasage/background.asp> (22 April 2007).

⁴⁷⁶ NORFACE, "About NORFACE", <http://www.norface.org/norface/publisher/index.jsp?PID=93&nID=94> (22 April 2007).

⁴⁷⁷ *Ibid.*

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that, until recently, Australia's JSTCC meetings have been more of an exchange in demonstrating what Australia does in RS&T rather than addressing a collaborative strategy.

(iii) New Zealand

As discussed in the preceding chapter, New Zealand's official relations with the EU in the field of RS&T were initially governed by an STC Arrangement. However, given the gradual transformation of Framework Programme rules for participation and the subsequent confusion regarding New Zealand researchers' eligibility to access EU-led projects, both parties agreed to negotiate an 'upgrade' of the Arrangement. Signing an STC Agreement would therefore bring New Zealand's basis for cooperation into line with other non-associated third countries. The development of the STC Agreement has also been detailed in the previous chapter and was officially signed on 16 July 2008.

However, Melae Langbein claims that the process of negotiating such an Agreement is lengthy, requiring 'interservice consultation'⁴⁷⁸, a decision from the College of Commissioners, mandates from each of the Member States and the official translation of the final Agreement into the EU's 23 official languages.⁴⁷⁹ The delay in recognising the utility of 'upgrading' to an Agreement initially hampered New Zealand's participation in the first stages of FP7, given the Programme's new emphasis on the STC Agreement. For example, Melae Langbein specifically mentioned two early calls of FP7 which New Zealand researchers were in danger of being unable to participate in, given that the eligibility criteria of both projects determined the need for non-associated third

⁴⁷⁸ Consultation with other EU Directorate Generals.

⁴⁷⁹ Langbein, interview, December 2006.

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countries to possess an STC Agreement with the EU.⁴⁸⁰ This example thus emphasises the necessity for MoRST to play close attention to Framework Programme developments to ensure that New Zealand's basis for participation in these Programmes does not once again become outdated.

Nevertheless, with an STC Agreement now signed, New Zealand has followed Australia and Canada in securing an 'official' means to collaborate with the Union in RS&T. New Zealand has removed the cooperative barrier posed by the former Arrangement, as identified in chapter three, and ensured its eligibility to participate in future Framework Programme projects. However, given the recent creation of the Agreement, it is thus necessary to heed Canada's and Australia's experiences from their own, more lengthy, participation within such a framework. For example, it is imperative to ensure that the momentum of engagement is maintained because, as de Rose states; "if we don't fully engage then we don't achieve what we want."⁴⁸¹ The JSTCC, for instance, is a potentially excellent mechanism to increase collaboration given its provision of regular meetings solely focused on RS&T relations. However, it is necessary to ensure that the JSTCC is utilised as effectively as possible, with a view to address set targets and a New Zealand-EU strategy for the RS&T relationship.

It is therefore New Zealand's responsibility to ensure that the STC Agreement is utilised effectively. Returning to Melae Langbein's observation, as a smaller and less visible RS&T world player, New Zealand has to "do all the running."⁴⁸² New Zealand has more to lose by having an ineffective RS&T relationship with the EU than vice versa, especially considering the variety of EU internal and international preoccupations. The

⁴⁸⁰ Langbein, interview, July 2007.

⁴⁸¹ *Ibid.*

⁴⁸² *Ibid.*

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EU should therefore not be relied upon, or expected, to ensure that the partnership is functioning properly.

5.5 The information desk: ERA-Can, FEAST and FRENZ

(i) ERA-Can

As previously noted, science cooperation at the international level was hampered by third country researchers' lack of awareness of opportunities in EU RS&T collaboration, Framework Programme participatory rules, proposal requirements, available funding, legal liability and intellectual property. The Canadian response to this issue, the ERA-Can project, was created within FP6 to address a series of bottlenecks identified by the Canadian government that were deemed to hamper Canadian-EU cooperation in RS&T. Those bottlenecks, more specifically, involve an;

“...insufficient awareness of opportunities, inadequate connections amongst researchers, the distance hurdle to building the trust and confidence necessary for partnerships, the complexity of S&T programs on both sides, and the lack of assistance for navigating such programs...”⁴⁸³

Launched in 2006 with an initial budget of €810 000 over three years,⁴⁸⁴ the project aims to combat such barriers to collaboration by providing researcher assistance in the form of an information service. ERA-CAN thus constitutes a forum devoted to outlining Canadian-EU collaborative opportunities in RS&T.⁴⁸⁵ By addressing the above issues, ERA-Can ultimately provides a way to “...increase the quality, quantity, profile and

⁴⁸³ Communications Research Centre Canada, *340,000 Euro for ERA-Can*.

⁴⁸⁴ Conversion of 1.3 million Canadian dollars (currency conversion rate as at 8 August 2008), and The European Research Area and Canada, “About ERA-Can: Overview”, http://www.ERA-Can.ca/en/Overview_20.html, (05 September 2007).

⁴⁸⁵ Communications Research Centre Canada, *340,000 Euro for ERA-Can*.

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impact of S&T cooperation between Canada and the ERA...⁴⁸⁶ More specifically, ERA-Can utilises tools such as the provision of a comprehensive, informative website and e-mail alerts to Canadian and European researchers and acts as an information desk to provide advice to researchers.⁴⁸⁷ De Rose claims that although ERA-Can was slow to launch, it has proved to be a very useful mechanism, particularly regarding the provision of a single contact point within Canada's decentralised system.⁴⁸⁸

In addition to ERA-Can, a series of ad hoc measures were adopted in order to address the information gap concerning collaborative opportunities within both the EU and Canada. In terms of informing researchers within the EU, de Rose ensured a constant level of communication with EU contacts through monthly e-mails that provided regular updates on Canadian RS&T. Of particular note, however, was the creation of the 'Third Country Counsellor Group', which aimed to resolve the absence of an EU mechanism for discussing third country issues. The group covered issues such as model contracts and intellectual property issues, in an attempt to better publicise information on third country participation with the Framework Programmes.

(ii) FEAST

Australian-EU cooperation in the creation of FEAST was a world first example, signalling the creation of a new tool in facilitating collaborative efforts between third countries and the EU. The success of FEAST has spawned eight other projects of a similar orientation internationally, including New Zealand's FRENZ. As with ERA-Can,

⁴⁸⁶ Paola de Rose, *ERA-Can 'An initiative to increase Canada-Europe S&T Cooperation' Summary of the FP6 Proposal*, http://www.tpf.hu/upload/docs/kutatas_hirlevel/eracan.pdf (05 May 2007).

⁴⁸⁷ *Ibid.*

⁴⁸⁸ De Rose, interview.

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FEAST seeks to identify, support and strengthen Australian RS&T cooperation with the EU.⁴⁸⁹ The initial three year pilot period received a European Commission grant of €260 000 and €88 000⁴⁹⁰ from the former Australian Department of Industry, Science and Training, now the Department of Education, Science and Training (DEST).⁴⁹¹ Run by a small office consisting of a part-time executive manager and one full time projects manager, the tools employed by FEAST are similar to ERA-Can's. The FEAST website provides information on existing cooperative projects, available funding, partnership assistance and other additional practical information. The site also provides a 'partner search facility' and the distribution of an electronic newsletter and e-mail alerts. In addition, FEAST acts to raise its profile within Australia by hosting events such as seminars, workshops and conferences.⁴⁹²

Brenner's assessment of FEAST's progress to 2004 illustrates the mechanism as one welcomed by the Australian RS&T community. Now in the second phase of FEAST, Australia's Senior Science and Research Officer in Brussels stresses that the initiative has been instrumental in helping facilitate a more effective RS&T relationship with the EU, with the first trial phase of FEAST producing some commendable results.⁴⁹³ The initiative raised awareness of the importance of the Australia-EU RS&T relationship amongst researchers and policymakers alike, as well as publicising new developments in the field.⁴⁹⁴ The distribution of the electronic newsletter and e-mail alerts also proved instrumental in demonstrating examples of cooperative projects and promoting further

⁴⁸⁹ Brenner, *FEAST Assessment Report*, 3.

⁴⁹⁰ Conversions of 440 000 and 150 000 Australian dollars (conversion rate as at 8 August 2008).

⁴⁹¹ Brenner, *FEAST Assessment Report*, 12.

⁴⁹² *Ibid*, 13.

⁴⁹³ Bauer, interview.

⁴⁹⁴ Brenner, *FEAST Assessment Report*, 18.

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collaborative opportunities.⁴⁹⁵ FEAST has provided further benefits in its capacity as an information point for young researchers.⁴⁹⁶ As de Rose discussed, engaging in international collaboration is often difficult for this group of researchers⁴⁹⁷ but, through workshops and conferences, FEAST has been able to effectively promote existing opportunities and possibilities for cooperation and exchange.⁴⁹⁸

Nevertheless, the first phase of FEAST was also faced with certain difficulties. Many of Brenner's recommendations in his initial assessment of the venture built on existing FEAST measures, looking to improve upon or ensure the continued effectiveness of initiatives such as the website, electronic newsletter, seminars and workshops. However, there were other issues that required more than minimal adjustments to the original scheme. Although the programme produces a large amount of information and works to raise its visibility amongst Australian researchers, criticism still existed concerning a lack of awareness of what the initiative offered. Brenner concluded that the programme's limited resources and personnel meant that it has not been able to deliver in regards to the provision of personal information and practical assistance and advised that FEAST II should consider employing more staff to meet this demand.⁴⁹⁹ In response to the RS&T community's request that FEAST work harder to extend its influence beyond Canberra, Brenner also advocated presenting on-site at universities, research institutes and agencies.⁵⁰⁰ Finally, similar to Lynne Hunter's emphasis on the importance of

⁴⁹⁵ *Ibid*, 19.

⁴⁹⁶ *Ibid*.

⁴⁹⁷ De Rose, interview.

⁴⁹⁸ Brenner, *FEAST Assessment Report*, 19.

⁴⁹⁹ *Ibid*, 26.

⁵⁰⁰ *Ibid*, 14 and 23.

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promoting RS&T successes,⁵⁰¹ Brenner saw it as important to market successful collaborative activities to raise the profile of Australia-EU RS&T relationship and demonstrate that valuable opportunities exist through such engagement.⁵⁰²

(iii) FRENZ

Taking into account the aforementioned Canadian and Australian initiatives, it is clear that New Zealand has been proactive in attempting to address issues concerning lack of visibility and information. New Zealand adopted a similar solution to both ERA-Can and FEAST through the creation of FRENZ. Described in more detail in the previous chapter, FRENZ works towards raising the profile of collaborative opportunities with the EU, strengthening research networks, providing information and guidance to New Zealand researchers wishing to access EU RS&T and ensuring more successful Framework Programme proposals are pushed through.⁵⁰³

FRENZ also utilises similar tools to that of ERA-Can and FEAST to achieve its goals. Tailored to enhance involvement in FP7, the programme provides a 'help-desk' offering one-on-one advice for researchers interested in engaging with the EU. A website detailing developments and documentation concerning the New Zealand-EU RS&T relationship was also created, accompanied by e-mail updates to relay Framework Programme opportunities and developments. In addition, seminars, training courses and even conference participation are offered, should FRENZ's services be required.⁵⁰⁴

⁵⁰¹ Hunter, interview.

⁵⁰² Brenner, *FEAST Assessment Report*, 23.

⁵⁰³ Glynn, interview, February 2008.

⁵⁰⁴ FRENZ, "FRENZ services", http://www.frenz.org.nz/frenz_services.htm (06 June 2006).

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FRENZ illustrates that New Zealand is therefore drawing from other third countries' experiences in forming an appropriate response to resolve cooperative bottlenecks. To ensure that FRENZ maintains its potential as a collaboration-facilitating mechanism, New Zealand must heed third countries' adverse experiences. With many of FRENZ's tools drawn from its neighbouring forerunner FEAST, the programme should be prepared to address similar problems. An immediate issue for investigation is that of the limited resources in terms of funds and personnel that FRENZ has at its disposal, being staffed solely by one part-time director. Having the funds to employ a full time staff member, or increase the number of employees altogether, would certainly facilitate a greater level of communication with, and assistance to, the RS&T community. The ability to provide personalised, one-on-one advice is one of FRENZ's strengths, yet it may not be utilised effectively should demand for the service grow as awareness of the initiative also increases.

5.6 Increasing private business expenditure: tax breaks and linking researchers to business

MoRST's background paper, *Science for New Zealand's Future... picking up the pace...*, identifies the current lack of private sector investment in RS&T as an issue hindering New Zealand's transformation to a knowledge-based economy.⁵⁰⁵ Although New Zealand's level of public sector investment is comparable with average OECD levels, MoRST's report details that private investment registers at only a third of the OECD average. In addition, private investment makes up only one third of total investment in

⁵⁰⁵New Zealand Ministry of Research, Science and Technology, *Background Paper to: Science for New Zealand's Future*.

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New Zealand RS&T. In fact, as a small state, there is an absence of domestically owned private business in New Zealand in general. New Zealand owns only one multinational company,⁵⁰⁶ General Manager International of the Horticulture and Food Research Institute of New Zealand Limited (HortResearch), Michael Lay-Yee, adds that New Zealand's small businesses do not tend to grow and those that do show promise are often owned off-shore.⁵⁰⁷

As previously stated, the make-up of Canada's RS&T investment is possibly too far removed from New Zealand's to provide a solution for New Zealand's low levels of private investment. Australia, however, proves to be a more appropriate case for study. When asked about issues concerning Australia's lack of business-sector RS&T investment, Hunter and Desvignes-Hicks both emphasised that it was a real problem for the country. Like New Zealand, Australia lacks the large multinational and industrial players present in Europe and the US, with the majority of private business falling into the category of the Small and Medium Enterprise (SME). SMEs tend to invest less in RS&T as opposed to the big industry that is largely absent in both countries.⁵⁰⁸ However, Desvignes-Hicks also asserted that, although private investment in New Zealand and Australia is low compared to OECD standards,⁵⁰⁹ increasing private investment in RS&T has become a problem for Europe also. He states that, as yet, no best approach has been identified to combat this issue and that the Australian government, although aware of the problem, has not been particularly proactive in addressing it.⁵¹⁰

⁵⁰⁶ CORDIS, *Different hemispheres, same ambitions*.

⁵⁰⁷ M. Lay-Yee, interview by author, HortResearch, Auckland, 8 March 2007.

⁵⁰⁸ Desvignes-Hicks, interview.

⁵⁰⁹ J. Hay, "BERD inquiry into higher education", <http://www.go8.edu.au/policy/papers/2002/0830.htm> (25 April 2007).

⁵¹⁰ Desvignes-Hicks, interview.

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Nevertheless, Australia has taken some steps to alleviate the problem. Desvignes-Hicks identifies the creation of the Cooperative Research Centres (CRCs) programme as a particularly useful mechanism.⁵¹¹ The initiative aims to boost research output, effectiveness and competitiveness whilst also facilitating collaboration between business and researchers. Desvignes-Hicks states that the programme has also been introduced in different forms internationally. He identifies Germany as a specific example, which introduced a competency centre to facilitate government support for localised clusters of innovation.⁵¹²

New Zealand has yet to launch a similar scheme but it has made other attempts to link researchers with private business. The primary mechanism for doing so is through the Technology New Zealand (TechNZ) Technology in Industry Fellowships (TIF) and Enterprise Scholarships.⁵¹³ Encompassed within the funding body of the Foundation for Research, Science and Technology (FRST), TechNZ aims to increase research and development in New Zealand businesses in general. The two specific initiatives mentioned above were therefore expressly designed to enhance links between business and research.⁵¹⁴ The TIFs, for example, provide for undergraduate, doctoral and academic researchers to contribute their expertise to a company's current RS&T programme or for the planning of a future project.⁵¹⁵ The companies, in turn, must demonstrate the benefits of their project for New Zealand and supplement the grant by covering the costs of travel,

⁵¹¹ *Ibid.*

⁵¹² *Ibid.*

⁵¹³ Langbein, interview, July 2007.

⁵¹⁴ FRST, "Technology for Industry Fellowships (TIF)", http://www.frst.govt.nz/business/fund_tif.cfm (13 September 2007).

⁵¹⁵ *Ibid.*

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consumables, equipment, consultancy payments to University staff and other University costs.⁵¹⁶

With respect to the Enterprise Scholarships, the pot of funding is broader and is not restricted to a particular branch of research. Moreover, companies bear greater responsibility for the inclusion of a researcher as they must contribute 50 percent towards the scholarship in addition to project costs, as with the TIFs.⁵¹⁷ Although the approach is not yet as harmonised as that of Australia's CRCs, it is certainly indicative that the government recognises the importance of these links. Taking steps to facilitate greater cooperation between the two should therefore provide an increase in private RS&T output in New Zealand.

Of particular relevance to New Zealand is Australia's system of 'tax breaks', introduced in 2001, to provide another mechanism to facilitate private investment in RS&T. The introduction of the tax cuts follows the example of countries such as Canada, the UK and Ireland and the concessions allow companies to claim up to 125 percent of spending on RS&T. The Australian government expressed the need for the changes by stating:

"...In a functioning free market, firms invest in less research and development than is optimal for the economy. Firms only invest in R&D to assist their bottom line, not to benefit others. However, many firms can use the same knowledge that spills over from other's R&D without reducing its value..."⁵¹⁸

⁵¹⁶ A. Baldwin, "Government Funding for Commercial R&D – a guide", <http://72.14.253.104/search?q=cache:lznGIRZFOz8J:www.massey.ac.nz/massey/fms//Research%2520Management%2520Services/Funding%2520Opportunities/Internal%2520Funding/1%2520technz05.doc+government+funding+for+commercial+R%26D+-+a+guide&hl=en&ct=clnk&cd=1&gl=nz> (15 April 2007).

⁵¹⁷ *Ibid.*

⁵¹⁸ J. Cribb, "Tax breaks: show us the proof", <http://www.sciencealert.com.au/opinions/20073007-16134-2.html> (15 September 2008).

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However, Hunter does not consider this as a sole solution to the problem.⁵¹⁹ Moreover, Julian Cribb argues that the initiative has not yielded satisfactory results. Cribb quotes that the purpose of the tax break is “...encouraging the development by eligible companies of innovative products, processes and services...” He then claims that, of the €4000 million⁵²⁰ tax dollars awarded to 5630 companies for RS&T in 2003-2004, Australia’s Commonwealth Scientific and Research Organisation (CSIRO) has not reaped the proportionate benefits in external revenues.⁵²¹ Cribb also asserts that certain researchers see the concessions solely as a way to reduce taxes, rather than an incentive to conduct research. He states that:

“...Until this – or any – government can quantify the commercial outcomes that flow from deductible research, Australia has no way of knowing whether tax breaks work or not...”⁵²²

Cribb instead advocates the approach taken in Finland, where the government directly funds the commercialisation process of companies undertaking RS&T. These companies are, in turn, expected to produce a final product or reimburse the fund.⁵²³

In the context of this point of view, the highly publicised introduction of tax credits within New Zealand’s 2007 budget may not be as effective as initially hoped. Moreover, the new tax breaks have replaced FRST’s Grants for Private Sector Research and Development (GPSRD) programme⁵²⁴, which followed a similar line to the Finnish example. The initiative worked to facilitate the growth of SMEs by encouraging the design of new products, processes and services by offering grants of up to 33 percent of

⁵¹⁹ Hunter, interview.

⁵²⁰ Conversion of 6936 million Australian dollars (conversion as at 8 August 2008).

⁵²¹ Cribb, *Tax breaks: show us the proof*.

⁵²² *Ibid.*

⁵²³ *Ibid.*

⁵²⁴ FRST, “Grants for Private Sector R&D (GPSRD)”, http://www.frst.govt.nz/business/fund_GPSRD.cfm (17 September 2007).

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the total project costs. With the credits still waiting to be put into action, it is not possible to assess what the effectiveness of New Zealand's version of the initiative will be in comparison to the directly funded grant. However, Cribb mentions in his article that, having modelled its tax break scheme on others' did not mean that Australia's version was automatically as successful.⁵²⁵ As with the introduction of the STC Agreement, there is a danger in following what other countries are doing too closely. As Desvignes-Hicks states, each is vastly different and what can be applied in one country will not necessarily work in another.⁵²⁶

In addition to working to increase private RS&T investment, Rick Petersen states that capitalising on New Zealand research is also of great importance, given the lengthy and often difficult process in seeing a product through to commercialisation. Petersen also mentions that it is not possible for the government to invest in every mechanism that would assist in ensuring a better output rate but hopes that the credits will make a significant difference.⁵²⁷ However, concerning the absence of a mechanism to determine attributed outputs to the cuts, the New Zealand government should monitor the success of the new initiative carefully to ensure its limited resources are being applied effectively.

5.7 Harmonisation

The lack of harmonisation between non-associated third countries' national RS&T programmes and the EU Framework Programmes often prevents third country researchers from optimising their involvement in EU RS&T. Returning again to the issue of funding, New Zealand's participation in EU-led projects has been hampered due to a

⁵²⁵ Cribb, *Tax breaks: show us the proof*.

⁵²⁶ Desvignes-Hicks, interview.

⁵²⁷ Petersen, interview.

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mismatch between the time-frame encompassing the government's available grants and EU calls for proposals.⁵²⁸ Thus, in the past, local researchers reliant on government funding have been limited in their opportunities to submit Framework Programme proposals as the two components do not necessarily complement each other. Michael Lay-Yee argues that, despite the government's identification of Europe as a priority RS&T partner, funding opportunities are not coordinated enough. Consequently, HortResearch has begun to diversify to become less reliant on public funding.⁵²⁹

Melae Langbein suggests that, in the view of the Commission, the best case scenario should involve non-associated third countries adopting a position of 'automaticity', where researchers gaining entry into Framework Programme projects would be guaranteed to receive domestic funding. However, Langbein emphasises New Zealand's inability to realise this aim. Not only are resources too limited but, whilst the country's research priorities do often overlap with those of the Union's, the EU's focus on areas such as the ERA, space and security mean that the two are not compatible enough to devote an automatic funding system to.⁵³⁰

Nevertheless, scope exists for a limited degree of automaticity and both Canada and Australia have adopted initiatives accordingly. Australia boasts the most successful example, in the form of its focus on Framework Programme projects targeting health. The National Health and Medical Research Council (NHMRC) currently sets aside one million dollars per biannual Framework Programme call, specifically to enhance involvement in EU-led health initiatives. Moreover, the NHMRC states that should these

⁵²⁸ Langbein, interview, December 2006.

⁵²⁹ Lay-Yee, interview.

⁵³⁰ Langbein, interview, December 2006.

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funds be exhausted, the Council will provide any top-up funding necessary.⁵³¹ This development therefore greatly simplifies the process for local researchers, who need only to file one proposal with the NHMRC and the EU and are subsequently guaranteed the funding should the EU accept the proposal.⁵³²

In this way, the difficult issue of time-lines and deadlines is avoided in the absence of an additional peer review mechanism.⁵³³ Indridi Benediktsson promotes the value of such a programme and claims that third country scientists “love” the simplified process.⁵³⁴ Moreover, he states that European researchers also benefit from the initiative and appreciate the ease and added value of bringing an Australian partner in to a Framework Programme project. The NHMRC funding, for example, allows the integration of a partner without reducing the total funds granted by the EU and in turn opens up further collaborative opportunities within small projects working with limited resources.⁵³⁵

Canada has also taken steps to increase the harmonisation of its research efforts with Europe. Its participation in ERA-Can, ERA-SAGE and NORFACE was introduced earlier in the chapter, identifying them as ‘spin-off’ benefits from the visibility awarded by the STC Agreement. The Networking the European Research Area (ERA-NET) programme aims to realise the goal of creating a cohesive ERA through cooperation and coordination at the national level of Member States.⁵³⁶ Both ERA-SAGE and NORFACE are components of this initiative. By definition, ERA-NET works to harmonise the

⁵³¹ Hunter, interview.

⁵³² Benediktsson, interview.

⁵³³ Bauer, interview.

⁵³⁴ Benediktsson, interview.

⁵³⁵ *Ibid.*

⁵³⁶ CORDIS, “Coordination of Research Activities – ERA-NET Scheme”, <http://cordis.europa.eu/coordination/era-net.htm>. (28 September 2007).

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research efforts of Member States and so a third country's involvement within such a programme ultimately ensures a greater degree of coordination with the EU also.

Canada's specific contribution to the ERA-SAGE project lies in its leadership, in partnership with the UK, of 'Work package 2: Needs assessment'. The determined goals of the work package are thus:

“...to enhance the accessibility and visibility of national research policies by the exchange of information and people; identify emerging new issues within the funding field of ELSA research; and identify the similarities, differences, gaps and potential conflicts of national funding strategies for ELSA-related research through detailed analyses of the ELSA field. The ultimate goal is to formulate a strategic plan for common activities...”⁵³⁷

This last sentence signals the future benefit of the project in regard to harmonisation. Although the current focus of the project is on the exchange of information and personnel, the Netherlands' Organisation for Scientific Research claims that “...transnational activities such as pilot programmes and joint or common calls will be developed at a later stage...”⁵³⁸ Canada's Social Sciences and Humanities Research Council (SSHRC) explains its motivation for joining NORFACE along these lines also, hoping to use the forum to facilitate participation in joint programmes in addition to observing other countries' national funding agencies and helping shape an international research agenda.⁵³⁹ In contributing to programmes working towards greater RS&T cohesion within Europe, Canada's own levels of harmonisation with EU initiatives stand to improve.

⁵³⁷ Social Sciences and Humanities Research Council of Canada, *Canadian GE³LS Research Funding*.

⁵³⁸ Netherlands Organisation for Scientific Research, “ERASAGE: European Research Area on Societal Aspects of Genomics”, http://www.nwo.nl/subsidiewijzer.nsf/pages/NWOA_6SJBFE_Eng (07 May 2007).

⁵³⁹ Garth Williams, *NORFACE Workshop: User Engagement in Research*, http://www.sshrc.ca/web/about/publications/norface_workshop_e.pdf (07 May 2007).

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A further benefit gained through involvement in ERA-NET projects concerns the way in which responsibility is focused at the SSHRC granting council level where issues of funding are dealt with. This factor therefore also assists in the internal harmonisation of Canada's efforts, bypassing potential barriers created by the country's decentralised system. ERA-NET involvement also works to enhance dialogue between Canada's three other national granting councils and their European counterparts.⁵⁴⁰ De Rose describes ERA-NET as an excellent mechanism which has allowed Canada to utilise EU programmes to advance bilateral involvement.⁵⁴¹ For example, as a full member of ERA-SAGE through the SSHRC, Canada receives full funding from the Commission to participate and thus enables it to enhance its visibility and access to EU-led initiatives on a cost-neutral basis.

New Zealand's participation in similar projects would allow an insight into European best practice in funding management and research policy. In addition, involvement would raise visibility, demonstrate commitment to the EU's research effort and potentially open up opportunities for greater harmonisation, should the project in question make room for the development of joint calls. Despite the issue of New Zealand's limited resources, Canada's experience has demonstrated that it is possible to secure funds from the EU in this field. Canada's involvement within ERA-NET began with the modest, resource restricted ERA-Can project and intensified from there. It would be advisable for MoRST to assess New Zealand's capability to contribute to a small ERA-NET project encompassing an element of the RS&T national interest and, in turn, examine whether ERA-NET would welcome a New Zealand partner.

⁵⁴⁰ De Rose, *ERA-Can 'An initiative to increase Canada-Europe S&T Cooperation'*.

⁵⁴¹ De Rose, interview.

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Indridi Benediktsson identifies funding as the basic problem for New Zealand, claiming that expenditure on RS&T at one percent of GDP is very low. Furthermore, he likens New Zealand to a small-medium EU Member State and argues that given an assessment of the country's RS&T activities and resources, New Zealand is "punching below its weight" in this field. Identifying that it has many research capabilities and a strong research community, Benediktsson advises that New Zealand needs to find a way to increase investment in RS&T and create co-funding opportunities as Australia has done with the NHMRC funding.⁵⁴²

However, Rick Petersen argues that MoRST is very clear that it will not consider initiating a system that would lead to automaticity. He states that:

"if the New Zealand government is going to invest money in R&D, it needs to be assured that that money is going towards research objectives which have been deemed to be important for New Zealand."⁵⁴³

With respect to publicly funded RS&T, MoRST's position is thus: "Only the benefits and costs that accrue to New Zealand residents matter."⁵⁴⁴ Agreeing to a peer review waiver similar to the NHMRC's system would not be an option, as New Zealand grants require some form of approval from FRST or other funding investment agents.⁵⁴⁵

Nevertheless, Petersen claims that MoRST is committed to addressing problems presented by deadline asynchronies between New Zealand and the EU. He cites the example of a recent agreement reached between the Ministry and DG RTD officials, which proposes to adopt coordinated calls for New Zealand and European researchers

⁵⁴² *Ibid.*

⁵⁴³ Petersen, interview.

⁵⁴⁴ New Zealand Ministry of Research, Science and Technology, "Benefit to New Zealand' Principles of Publicly Funded RS&T", <http://www.morst.govt.nz/Documents/work/pace/Pace-National-Benefit-Principles.pdf> (12 September 2008).

⁵⁴⁵ Petersen, interview.

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within the framework of EU-led collaborative research projects. This venture, still very much in its early stages, has been discussed in greater detail in the preceding chapter. To briefly restate, however, Petersen expects that the final structure of the joint venture will involve the commitment of funds from both parties, within their own funding systems, to be invested in research fields deemed to be of mutual interest and importance. Although New Zealand has had no official involvement with the EU in enhancing harmonisation in RS&T in the past, it is only the second country after the US with whom such an objective has been agreed to.⁵⁴⁶ As such, it marks an enormously important first step for New Zealand and its future relationship with the EU.

5.8 Conclusion

Not all third country priorities are compatible with those of New Zealand. Canada's involvement in the Union's 'big science' initiatives such as Galileo, ITER and the European Space Agency is a good example of this. Nevertheless, investigating Australian and Canadian responses to collaborative barriers, within the context of similar priorities and capabilities, is particularly useful given their greater experience in engaging with the EU. There are certainly issues presented by the identified bottlenecks that cannot realistically be resolved. As Lynne Hunter states, although the ultimate goal for FEAST would be for them "to sit back and say that every researcher in Australia is aware of the Seventh Framework Programme", this is an unachievable target.⁵⁴⁷ With regard to raising New Zealand's visibility within the EU, more can always be done. This also applies to attempts to enhance the research community's awareness of opportunities for

⁵⁴⁶ *Ibid.*

⁵⁴⁷ Hunter, interview.

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collaboration with the EU. In addition, given the limited resources available to commit to New Zealand's priorities, not all of MoRST's goals for international RS&T cooperation will be realised. Looking at other third countries' difficulties, responses and successes regarding their individual relationships with the EU has thus provided realistic guidance for New Zealand's own attempts to find a place for itself on the 'EU radar'.

Chapter Six

Case studies: current collaborative projects

6.1 Introduction

The case studies selected for investigation within this chapter focus on a variety of projects based upon mutual priorities for New Zealand and Europe. As New Zealand researchers have yet to participate in projects under the recently launched Seventh Framework Programme (FP7), this chapter focuses on their involvement within Fifth and Sixth (FP5 and FP6) Framework Programme initiatives. In the field of food research, ISAFRUIT, a Horticulture and Food Research Institute of New Zealand Limited (HortResearch)-European Union (EU) collaborative project in fruit research,⁵⁴⁸ has been chosen. The Food Research in Europe and New Zealand (FOOD-FRENZ) initiative, a networking venture focused on food research,⁵⁴⁹ also falls within the collaborative thematic priority focusing on food, as provided for in FP6. Finally, the FP5 project PLUS (Participation, Leadership and Urban Sustainability),⁵⁵⁰ has been selected due its focus on the field of social science, thus providing a useful example of opportunities available outside the area of purely scientific and technological research.

This section of the dissertation explores and analyses the realities of these selected case studies and, in turn, allows for the application of recommendations for New Zealand researchers looking to engage in future collaborative projects with the EU. In doing so, this chapter aims to provide a valuable contribution to New Zealand researchers' attempts

⁵⁴⁸ ISAFRUIT, "Healthy Fruit for a Healthy Europe", <http://www.isafruit.org/Portal/index.php> (20 May 2006).

⁵⁴⁹ FOOD-FRENZ, "FOOD-FRENZ", <http://www.foodfrenz.com/> (21 June 2008).

⁵⁵⁰ PLUS, "Participation, Leadership and Urban Sustainability", <http://www.plus-eura.org/> (26 April 2008).

to engage with the EU in this field by identifying and analysing commonalities through the comparative analysis of existing New Zealand-EU project collaborations.

When evaluating New Zealand researchers' capacity to engage effectively with the EU in Research, Science and Technology (RS&T), it is necessary to examine existing collaborative projects in order to gain a realistic assessment of New Zealand-EU RS&T cooperation. For example, Marie Curie International Outgoing Fellow, Annick Masselot, stresses the importance of understanding the realities of engaging with the EU collaboratively.⁵⁵¹ Concerning her experience in particular, Masselot highlights a series of specific issues which exist within, and further complicate, the Framework Programme application process. She refers to the required completion of complicated paperwork, lengthy administrative work and the necessity to comprehend the ever-changing nature of 'EU speak' as particular challenges within the application process.⁵⁵²

Within this section of the thesis, a multiple-case study design is adopted in order to analyse the nature of New Zealand-EU collaborative RS&T projects in practice. Given the contemporary nature of this research topic, using case studies as a methodology allows for the investigation of this particular subject matter within its real-life context, as promoted by Robert K. Yin.⁵⁵³ The rationale for adopting such a design is explored in more detail within the methodology section of this dissertation.

6.2 ISAFRUIT: Healthy fruit for a healthy Europe

⁵⁵¹ Annick Masselot, "Introduction to European Research Fellowships: Marie Curie Actions and FP7", *The National Centre for Research on Europe's European Union Roundtable Seminar Series Programme*, 23 May 2008.

⁵⁵² *Ibid.*

⁵⁵³ Yin, *Case Study Research – Design and Methods*, 1.

(i) Introduction

Launched in Copenhagen on 8 February 2006, the ISAFRUIT project falls within the Sixth Framework Programme's thematic priority focus concerning food quality and safety.⁵⁵⁴ Projected to span 54 months from 2006 to 2009, the EU financial contribution to the venture is set at €13.8 million,⁵⁵⁵ with a total of 64 research partner participants drawn from selected European Universities, Research Institutions, Centres for Technological Development and Small-Medium Enterprises (SMEs). In addition to these, ISAFRUIT also includes two third country partnerships with New Zealand and the United States (US).⁵⁵⁶ Within the context of the beneficial properties fruit offers in the promotion of good health, some EU Member States were identified as having unsatisfactory levels of fresh produce consumption.⁵⁵⁷ The core objective set by ISAFRUIT centres upon:

“...Increasing fruit consumption through a trans-disciplinary approach delivering high quality produce from environmentally friendly, sustainable production methods...”⁵⁵⁸

More specifically, the project partners have selected apples, peaches and nectarines as particular fruit species to focus their research on.⁵⁵⁹

The project's strategy has been to address all aspects of the fruit supply chain, identifying issues that at present reduce fruit consumption and, in turn, seeking to remedy them. In particular, these issues have been outlined by the project as:

⁵⁵⁴ ISAFRUIT “About ISAFRUIT”, <http://www.isafruit.org/Portal/about.php> (20 May 2006) and Cordis, *Sixth Framework Programme: Activity Areas*, <http://cordis.europa.eu/fp6/activities.htm> (20 May 2006).

⁵⁵⁵ ISAFRUIT, “About ISAFRUIT”.

⁵⁵⁶ *Ibid.*

⁵⁵⁷ HortResearch, “HortResearch partners in €21.1m EU research programme”, <http://www.hortresearch.co.nz/index/news/483> (19 May 2006).

⁵⁵⁸ *Ibid.*

⁵⁵⁹ “ISAFRUIT”, http://intlpag.org/14/PDF/0114_fruitnut_Arus.pdf (29 July 2008).

“...insufficient high quality and safety of fruit and fruit products at the point of consumption; lower levels of convenience of fruit and fruit products compared to competing products (i.e., snacks and soft drinks); limited availability of certain fruit and fruit products; lack of awareness by consumers of the health-giving attributes of fruit; high prices of fruit and fruit products at the point of sale...”⁵⁶⁰

In addressing this range of issues, a variety of solutions are thus required. In particular, the research conducted by ISAFRUIT project partners is conducted within a “fork-to-farm”⁵⁶¹ approach and focuses upon:

“...increasing the quality and safety of fruit and fruit products; augmenting the convenience of fruit products; improving the availability of high quality fruit; raising consumer awareness; contributing to opportunities for lower prices...”⁵⁶²

In distributing the project’s ongoing and finalised research, ISAFRUIT’s seventh Project Pillar, concerning the dissemination and transfer of knowledge,⁵⁶³ works to circulate research outcomes through the hosting of conferences, publication of documents and the provision of training courses for key actors within the European fruit supply chain.⁵⁶⁴

(ii) New Zealand participation

New Zealand researchers’ involvement in ISAFRUIT, as a European Integrated Research Project,⁵⁶⁵ is steered by the project’s official partnership with New Zealand Crown Research Institute (CRI) HortResearch. HortResearch, as a fruit science company, is internationally recognised in the field of integrated fruit research and is the name behind the popular breeds of ZESPRITM GOLD kiwifruit and ENZA JAZZTM apples. Moreover,

⁵⁶⁰ ISAFRUIT, “Who We Are”, <http://www.isafruit.org/Portal/whoweare.htm> (21 May 2006).

⁵⁶¹ *Ibid.*

⁵⁶² *Ibid.*

⁵⁶³ ISAFRUIT, “Project Pillars”, <http://www.isafruit.org/Portal/pillars.php> (20 May 2006).

⁵⁶⁴ *Ibid.*

⁵⁶⁵ ISAFRUIT, “About ISAFRUIT”, <http://www.isafruit.org/Portal/about.php> (20 May 2006).

the company possesses the world's largest fruit compound database and its researchers also developed ripeSense™, which has been heralded as the world's first intelligent fruit labelling system.⁵⁶⁶

Concerning HortResearch's specific involvement within ISAFRUIT, the company is represented by two researchers responsible for contributing research within two separate Project Pillars. Roger Harker holds the position of science leader for HortResearch's participation in ISAFRUIT, whose research is focused upon Work Package (WP) 6.1: 'Genfruit: establishing the genetic basis for fruit quality by mapping the principal genes concerned'.⁵⁶⁷ Consistent with ISAFRUIT's goal to make fruit more accessible and desirable for consumers, the project's research expands upon previously made findings in this field, which focuses on fruit texture – particularly 'crispness' and 'juiciness' – and its influence upon consumer preferences for apples.⁵⁶⁸ Jill Stanley, the second of HortResearch's employees participating within ISAFRUIT, states that:

“...Crispness, hardness and juiciness are all key aspects in the overall consumer experience of fruit. When these and other attributes are present in the right balance then eating fruit is a real pleasure. We want to understand the physiology behind these attributes so we can pass that information on to breeders, enabling them to target fruits that will be popular with consumers...”⁵⁶⁹

More specifically, then, HortResearch's participation in ISAFRUIT involves working towards the provision of information on apple texture research, ultimately aiming to identify particular molecular structures that produce favourable textures, such as the

⁵⁶⁶ HortResearch, *HortResearch partners in €21.1m EU research programme*.

⁵⁶⁷ INRA, “Isafruit: increasing the consumption of fruit to improve health”, http://www.international.inra.fr/partnerships/with_the_private_sector/live_from_the_labs/isafruit_increasing_the_consumption_of_fruit_to_improve_health (20 June 2008).

⁵⁶⁸ ISAFRUIT Project document extract, e-mail correspondence, Jill Stanley.

⁵⁶⁹ Jill Stanley, as quoted in HortResearch, *HortResearch partners in €21.1m EU research programme*.

aforementioned ‘crispness’ and ‘juiciness’, in apples.⁵⁷⁰ This, in turn, will allow for the phenotyping⁵⁷¹ of future seedling populations and thus provide the opportunity for European fruit breeders to select particular breeds of apple that will attract European consumers.⁵⁷²

Jill Stanley, plant physiologist and HortResearch’s Europe-based business leader to 2008,⁵⁷³ is specifically involved in Project Pillar 7 WP 7.3: ‘Dissemination and transfer of knowledge: FRUITIMPACT’.⁵⁷⁴ The Work Package’s goal focuses upon increasing the impact of the project’s finalised research by identifying exploitable products and creating a package of such products to offer European fruit growers for production. This process thus involves the selection of project findings for patenting, therefore ensuring that the science will be followed through and transferred to the market.⁵⁷⁵ However, although this Project Pillar of the ISAFRUIT project focuses on the exploitation of research findings and intellectual property, Stanley stresses that the financial returns from such a venture are a beneficial by-product of the process. Stanley thus attributes the need for such measures as a means to ensure that the information from the combined projects will be utilised by promoting its integration within the European fruit growing industry.⁵⁷⁶

⁵⁷⁰ ISAFRUIT Project document extract.

⁵⁷¹ “The identification of observable physical or biochemical characteristics of an organism, as determined by both genetic make-up and environmental influences”, *The Free Dictionary*, <http://www.thefreedictionary.com/phenotype> (22 June 2008).

⁵⁷² ISAFRUIT Project document extract.

⁵⁷³ Jill Stanley, phone conversation with author, 07 December 2006.

⁵⁷⁴ “ISAFRUIT”,

http://www.eead.csic.es/stressphysiology/3.Proyectos/Isafruit_UE/ISAFRUIT/ISAFRUIT_Annex1_Versio_n_3_CorrectedForMeeting120706.pdf (3 November 2006).

⁵⁷⁵ Jill Stanley, phone conversation.

⁵⁷⁶ *Ibid.*

New Zealand's niche strengths and priorities in RS&T have been discussed above. To briefly restate, the Ministry of Research, Science and Technology's (MoRST) most recent publication concerning government priorities for the future of RS&T refers to New Zealand's research strengths as:

“...notable for supporting practical advances, locally and internationally, in areas such as agriculture, plant and animal production, food production, environment and resource management, biosecurity, conservation and biodiversity...”⁵⁷⁷

In assessing HortResearch's involvement within the ISAFRUIT project, it is evident that the CRI's participation illustrates a classic combination of the way in which the country's strengths and priorities in RS&T can be combined. Indeed, HortResearch was specifically invited to participate in ISAFRUIT due to its renowned expertise in the fruit research industry. HortResearch Chief Executive Paul McGilvary states that, for example, the CRI was selected due to:

“...its international reputation for all-round excellence in fruit research and increasing skill in identifying interactions between fruit and human health and wellbeing...”⁵⁷⁸

Moreover, HortResearch's General Manager International, Michael Lay-Yee, claims that the company's proven track record concerning quality science and commercial outputs, particularly in the field of fruit innovation, has made it particularly attractive to European partners.⁵⁷⁹

(iii) Findings

⁵⁷⁷ New Zealand Government, *From Strength to Strength: Government's Agenda for New Zealand Research, Science and Technology* (Wellington, 2008), 12.

⁵⁷⁸ Paul McGilvary, as referred to in HortResearch, *HortResearch partners in €21.1m EU research programme*.

⁵⁷⁹ Lay-Yee, interview.

As outlined in chapter three, Welsh identified the elevation of the citizen and the use of science to alleviate social issues as an increasing trend in the practical application of science and technology.⁵⁸⁰ Taking into account this wider picture of European research as a whole, in looking to increase fruit consumption as a way of promoting the health of EU-nationals,⁵⁸¹ the core objective of ISAFRUIT thus provides a concrete example of the recent refocusing of EU RS&T policy upon the elevation of the citizen in research. In addition, the promotion of such a project clearly illustrates the Union's aims to utilise research in science and technology to help address social issues.⁵⁸² The ISAFRUIT project, and New Zealand's involvement within it, provides a typical example of the social priorities in EU-led research and how both New Zealand researchers and citizens can benefit from the Union's attempts to address such priorities on a global scale.

The ISAFRUIT project, and HortResearch's participation within it, was selected for inclusion within this chapter's multiple-case investigation due to the clear example this case provides of collaborative New Zealand-EU research in a field of mutual priority. In determining HortResearch's access to ISAFRUIT, Stanley verifies that the company's international reputation in the field of fruit research made it a sought after partner with whom to work with concerning the collaborative venture.⁵⁸³ However, she also draws on the role that personal linkages played in facilitating the CRI's involvement within the project. More specifically, Stanley states that the project idea for ISAFRUIT was proposed by the European Fruit Research Institutes Network (EUFRIN). In terms of New Zealand's involvement, then, Stanley states that several of EUFRIN's core group had

⁵⁸⁰ Welsh, "Values, Science and the European Union", 59.

⁵⁸¹ ISAFRUIT, "Project Objectives:", <http://www.isafruit.org/Portal/objectives.php> (20 June 2008).

⁵⁸² De Rose, interview.

⁵⁸³ Jill Stanley, interview by author, telephone interview, 20 June 2008.

existing partnerships, or had collaborated with, HortResearch. Thus, the company and its research was known to the EUFRIN partners and, combined with the CRI's strong fruit research base, assisted in the inclusion of HortResearch within ISAFRUIT.⁵⁸⁴

Stanley's experience in accessing projects within EU Framework Programmes has emphasised the importance of personal linkages in international research collaboration:

“I think it's very unlikely to be able to gain access to projects in the EU without personal linkages in some way.”⁵⁸⁵

In the absence of such a personal link, Stanley does concede that partnerships were still possible. However, they would be dependent on the New Zealand researcher, or institution, approaching a prospective European partner and offering them a valuable research contribution that they could not access elsewhere.⁵⁸⁶ Consequently, stresses the importance of facilitating meetings between New Zealand scientists with those abroad. She also cites involvement in the European Cooperation in the field of Scientific and Technical Research (COST) groups, in addition to attendance at traditional networking arenas, such as international conferences, as an effective way to further develop researchers' international relationships.⁵⁸⁷

Existing personal linkages, whether forged bilaterally or through previous involvement in Framework Programme projects, also do much to enhance a researchers' chance of accessing future EU-driven projects. In particular, Jill Stanley mentions that due to HortResearch's involvement in ISAFRUIT, the company is more likely to be viewed as a desirable partner when submitting further proposals for project

⁵⁸⁴ *Ibid.*

⁵⁸⁵ *Ibid.*

⁵⁸⁶ *Ibid.*

⁵⁸⁷ *Ibid.*

consideration.⁵⁸⁸ Additionally, in working within this pan-European venture, Stanley sees such involvement as having a favourable effect upon HortResearch's visibility within the European Union, as its participation in ISAFRUIT has naturally exposed the CRI to other European partners working in the same field.⁵⁸⁹ Indeed, Michael Lay-Yee states that ISAFRUIT and EuroPREVALL, another EU FP6 project in which HortResearch is a participant, are currently focused more upon scientific linkages and the facilitation of networking. Lay-Yee considers the opportunities presented by the Framework Programmes to 'open doors' for researchers. Networking and the development of business ventures are both valuable benefits provided by Framework Programme participation.⁵⁹⁰

Following on from this, Stanley ties in securing personal linkages with difficulties presented by the geographical distance, which has proved to be a recurring theme throughout this dissertation:

“Even within a company like HortResearch, not everyone can travel... So it does make it more difficult. People could be making linkages by e-mail if they're reading cases that are interesting... But it's not easy.”⁵⁹¹

This difficulty also presents implications for ongoing cooperation once a collaborative project is in place. For example, although Jill Stanley states that utilising e-mail and video conferencing can make cross-border communication easier, she considers the difficulty of organising valuable face-to-face interactions as an ongoing barrier for non-associated third countries participating in EU Framework Programmes.⁵⁹²

⁵⁸⁸ *Ibid.*

⁵⁸⁹ *Ibid.*

⁵⁹⁰ Lay-Yee, interview.

⁵⁹¹ *Ibid.*

⁵⁹² *Ibid.*

In a similar vein, Stanley also identifies the asynchrony in available domestic RS&T funding rounds with Framework Programme calls for proposals. As previously detailed, third country involvement in Framework Programme projects will only receive EU funding should participation be deemed essential to carrying out the specific research. HortResearch's participation in ISAFRUIT, for example, receives only a small amount of funding from the EU for travel expenses to enable attendance at meetings and facilitate key interactions with European-based partners. The CRI's involvement is funded by New Zealand's Foundation for Research, Science and Technology (FRST), to the total of €107 200 annually for the two-and-a-half year duration of the project, in addition to the inevitable pull on HortResearch's own resources.⁵⁹³ However, although HortResearch was able to secure domestic funding for its involvement in the project, Stanley mentions that not all researchers and/or research institutions are able to submit applications for such financial assistance on time, due to the call for a Framework Programme project falling outside the respective deadlines of domestic funding providers.⁵⁹⁴

Jill Stanley also makes reference to the complicated application processes involved in submitting a project proposal within the structure of the Framework Programmes. Stanley states that accessing introductory information concerning non-associated third country participation is a difficult task in itself:

“It is really difficult to find what the rules are concerning non-associated third countries... trying to find the relevant information that explains exactly what we're eligible for and what we can and can't do... it's just very frustrating.”⁵⁹⁵

Moreover, she goes on to stress that it is up to New Zealand researchers to do the ground work, as potential European partners are often unaware of the regulations regarding the

⁵⁹³ Stanley, interview and ISAFRUIT Project document extract.

⁵⁹⁴ *Ibid.*

⁵⁹⁵ *Ibid.*

inclusion of a third country within a Framework Programme project.⁵⁹⁶ This therefore brings in an extra dimension to the already detailed application process which researchers must enter into in their attempts to access the EU's Framework Programmes.

Given the identification of particular barriers to more effective collaboration with the EU as detailed above, findings from the investigation of HortResearch's participation in ISAFRUIT nevertheless reveal significant benefits for the company which make the pursuit of such collaboration worthwhile. Jill Stanley points out that although some of the commercially sensitive findings of the project may be subject to Intellectual Property (IP) rights, the information gained through ISAFRUIT will be released through scientific publications. Stanley considers there is considerable potential to use the outcomes from the project for the benefit of New Zealand consumers also.⁵⁹⁷ Additionally, in purely competitive terms, Stanley draws attention to the obvious benefits for New Zealand fruit producers should ISAFRUIT's objective to increase fruit consumption in Europe succeed. Moreover, for HortResearch, collaborating in a European-driven venture with a focus on consumers provides the company with a valuable insight into the European market and consumer needs that will assist in the development of new HortResearch fruit varieties.⁵⁹⁸

6.3 FOOD-FRENZ: Food research in Europe and New Zealand

(i) Introduction

⁵⁹⁶ *Ibid.*

⁵⁹⁷ *Ibid.*

⁵⁹⁸ *Ibid.*

In the history of New Zealand-EU relations in RS&T, the FOOD-FRENZ Specific Support Action (SSA) proves to be a particularly unique collaborative project in that it is solely a New Zealand-EU based venture. The project's tag line states that it embodies: "A complementary network to stimulate consumer focused research collaboration across food sectors".⁵⁹⁹ Like ISAFRUIT, then, FOOD-FRENZ falls within the remit of New Zealand's niche strength in food and agricultural research. However, unlike the preceding case-study, FOOD-FRENZ is focused on the importance of building networks between researchers active in the field of RS&T, as opposed to scientific research in practice.⁶⁰⁰

The motivation for undertaking such a venture, as detailed by the project's website, concerns the transformation of consumer preferences on a global scale in which such preferences focus upon food quality, safety, nutrition and sustainable production.⁶⁰¹ In addressing these transformative preferences and their impact upon global food production, FOOD-FRENZ looks to both promote linkages between consumers, researchers and industry and enhance the level of collaboration between New Zealand and the EU in the field of food research.⁶⁰² The initiative's thematic priorities focus on food safety, personalised foods, animal health and welfare for food production, sustainable food production systems and innovative and emerging technologies.⁶⁰³

More specifically, the venture has provided for two New Zealand-EU workshops concerning increasing the effectiveness of cross-sector collaboration, as mentioned above, which were held in Brussels in April 2007.⁶⁰⁴ Additionally, twenty outgoing EU

⁵⁹⁹ FOOD-FRENZ, "FOOD-FRENZ", <http://www.foodfrenz.com/> (29 June 2008).

⁶⁰⁰ FOOD-FRENZ, "Background", <http://www.foodfrenz.com/bckgrd.htm> (29 June 2008).

⁶⁰¹ *Ibid.*

⁶⁰² *Ibid.*

⁶⁰³ FOOD-FRENZ, "Project Themes", <http://www.foodfrenz.com/themes.htm> (29 June 2008).

⁶⁰⁴ FOOD-FRENZ, "Project Activities", <http://www.foodfrenz.com/activities.htm> (29 June 2008).

fellowships were awarded to European researchers to partake in a study visit to New Zealand and this initiative took place between January and May 2008. Finally, FOOD-FRENZ shall conclude with a conference in September 2008 focused upon the dissemination of the accumulated research outcomes from the abovementioned workshops and study exchanges.⁶⁰⁵

(ii) New Zealand participation

FOOD-FRENZ also differs from other existing New Zealand-EU collaborative research projects in that the project is a New Zealand-driven initiative, emerging from researcher delegation visits to Europe and a cross-institutional effort between New Zealand's universities, CRIs and companies.⁶⁰⁶ Nevertheless, the Union remains the dominant party in the relationship given that FOOD-FRENZ's creation emerged out of the SSA funding opportunities offered by the Sixth Framework Programme.⁶⁰⁷ Additionally, in funding three-quarters of the €500 052 project cost, the Union expects to reap a return that will "contribute to EU aspirations in the food industry."⁶⁰⁸

In determining New Zealand's desirability as a partner with whom to launch FOOD-FRENZ, the European Commission identifies appropriate parallels between the two partners in the food sector:

"...New Zealand is viewed as a successful export-oriented country with a similar market need to that of the EU... When it comes to economic development, the EU and New Zealand actually share several fundamental similarities. Both rely on the food sector for economic growth, they produce similar types of products (e.g. dairy, meat, wine, fruit, vegetables and

⁶⁰⁵ FOOD-FRENZ, "Background".

⁶⁰⁶ Val Orchard, interview by author, telephone interview, 19 December 2007.

⁶⁰⁷ *Ibid.*

⁶⁰⁸ FOOD-FRENZ, "Background".

seafood) and share many of the threats and opportunities that face the industry today...”⁶⁰⁹

Moreover, New Zealand researchers’ reputation for excellence in the food research sector ensures its status as a valuable partner with the potential to contribute to enhancing the EU’s own standing in this field of research:

“...New Zealand has well coordinated production systems, an active research base that is respected internationally and strong Government support... It thus offers a valuable source of expertise, complementary to that within the EU...”⁶¹⁰

The acknowledgement of similarities between New Zealand and the EU, and recognition of their complementary expertise, illustrates how New Zealand was deemed to be a desirable partner with whom to collaborate and enhance mutual objectives in the field of food research.

Concerning the particular nature of New Zealand participation, FOOD-FRENZ represents what Val Orchard, the initiative’s New Zealand-based technical coordinator, terms an ‘NZ Inc’ approach.⁶¹¹ In addition to two UK-based partners, Campden and Chorleywood Food Research Association (CCFRA) and the University of Newcastle Upon Tyne, FOOD-FRENZ also includes project partnerships from AgResearch Limited (AgResearch), the New Zealand Institute for Crop and Food Research Limited (Crop&Food), the Institute of Environmental Science and Research Limited (ESR), HortResearch, Lincoln University, Massey University, the University of Auckland and Fonterra Cooperative Group Limited (Fonterra).⁶¹²

⁶⁰⁹ European Commission, “FOOD-FRENZ”, http://ec.europa.eu/research/biosociety/food_quality/projects/175_en.html (15 December 2007).

⁶¹⁰ *Ibid.*

⁶¹¹ Orchard, interview.

⁶¹² Cordis, “Food Research in Europe and New Zealand (Food-Frenz): A complementary network to stimulate consumer-focused research collaboration across food sectors”, http://cordis.europa.eu/search/index.cfm?fuseaction=proj.document&PJ_RC�=9637617&CFID=7996086

Having previously outlined the scope of the project, involving two joint workshops, outgoing European study visits and an information dissemination conference,⁶¹³ New Zealand's specific role involved the organisation of the two Brussels-based workshops by Massey University and HortResearch respectively. Addressing the themes of the project as a whole, these workshops therefore focused upon enhancing successful cross-sectoral collaboration and the exploitation of finalised food research innovations for the benefit of consumers.⁶¹⁴

In addition, the four CRIs, three Universities and Fonterra were charged with hosting the 20 outgoing European researchers for a two week period within their institutions during the first quarter of 2008.⁶¹⁵ As indicated by the limited duration of the European researchers' stay, the scholarships do not involve cooperation on a particular research project but were instead created for the primary purpose of enhancing existing collaborative relationships and facilitating new ones.⁶¹⁶ The project thus provides a unique example of how New Zealand researchers can effectively engage with the EU and work within the remit of the Framework Programmes to benefit domestic research as a whole.

(iii) Findings

<http://www.foodfrenz.com/act1.htm> (16 December 2007).

⁶¹³ FOOD-FRENZ, "Background".

⁶¹⁴ FOOD-FRENZ, "WORKSHOP 1: Workshop on successful cross-sectoral collaboration", <http://www.foodfrenz.com/act1.htm> and FOOD-FRENZ, "WORKSHOP 2: Workshop on Consumer Foresight", <http://www.foodfrenz.com/act2.htm> (13 December 2007).

⁶¹⁵ Orchard, interview.

⁶¹⁶ FOOD-FRENZ, "Study Visits: What's it all about?" <http://www.foodfrenz.com/visitapps.htm> (21 June 2008).

FOOD-FRENZ presents an excellent example of the way in which the EU's RS&T priorities can promote both its competitive and social goals. Not only does the venture promote the wish to achieve "...complementary consumer driven and industry goals...", but it also seeks to "...more effectively address some increasingly global issues such as safety, traceability, animal husbandry and sustainability..."⁶¹⁷ In addition, the case of FOOD-FRENZ clearly illustrates the EU's ability to diffuse core norms through a collaborative medium. In particular, the initiative reflects the Union's 'elevation of the citizen' in scientific research, as referred to earlier, in its stated objective to "...improve consumer well-being..."⁶¹⁸ Moreover, the project encourages the development of "...best practice for delivery of sustainable, safe, quality food in the EU and New Zealand..."⁶¹⁹ Finally, the statement referring to New Zealand as a "valuable source of expertise... which can contribute to EU aspirations in the food industry"⁶²⁰ illustrates New Zealand-based FOOD-FRENZ participants' identification of specific EU norms in this field. Thus, by seeking to engage with the Union here, this particular collaborative effort signals willingness on the part of New Zealand participants to be exposed to, and help promote, European norms in this field.

Referring back to Manners' identification of ways in which norms may be diffused,⁶²¹ it can be expected that the FOOD-FRENZ venture could potentially provide a variety of avenues for this to occur. Firstly, the potential for *procedural* diffusion is intrinsic to the FOOD-FRENZ agreement. To briefly restate, Manners defines *procedural* diffusion as the institutionalisation of a relationship between the EU and a third party,

⁶¹⁷ *Ibid.*

⁶¹⁸ *Ibid.*

⁶¹⁹ *Ibid.*

⁶²⁰ *Ibid.*

⁶²¹ Manners, "Normative Power Europe", 244-245.

citing inter-regional cooperation agreements, membership of an international organisation and EU enlargement as examples.⁶²² Thus, in providing for the exclusive engagement of the EU and New Zealand, the FOOD-FRENZ initiative naturally presents such a forum within which European norms can be diffused.

Additionally, *transference*, where norms may be disseminated through tangible or financial means via the exchange of goods, trade, aid or technical assistance,⁶²³ can be applied to the case under investigation. To illustrate, FOOD-FRENZ's objective to promote best practice in cross-sectoral innovative food research⁶²⁴ throughout the EU and New Zealand through the exchange of knowledge and expertise can be seen to satisfy this definition. Finally, at all levels, the potential for norm dissemination via *contagion*, or "the unintentional diffusion of ideas from the EU",⁶²⁵ is provided by the simple interaction of New Zealand and European institutions regarding the initial negotiation of the venture. This interaction is then followed on through the continued contact of New Zealand-based and European researchers through the initiative's provision of joint workshops, conferences and study exchanges as forums for interaction.

Following on from this practical application of the dissertation's theoretical framework, it can be deduced that, by the very structure of the bilateral FOOD-FRENZ framework, the EU's support of such initiatives is not limited to promoting a one-way diffusion of norms. Rather, as mentioned above, the EU has identified New Zealand as a partner with similar capabilities and priorities. Referring back to the aforementioned quotes, for example, the Commission stated:

⁶²² *Ibid.*

⁶²³ *Ibid.*, 245.

⁶²⁴ FOOD-FRENZ, "Objective 2", <http://www.foodfrenz.com/object2.htm> (17 December 2007).

⁶²⁵ Manners, "Normative Power Europe", 244.

“...the EU and New Zealand actually share several fundamental similarities... It thus offers a valuable source of expertise, complementary to that within the EU...”⁶²⁶

In doing so, it is possible to see the potential for a two-way flow of norm diffusion as, by recognising the similarities it shares with New Zealand in this sector, the EU is not only promoting its norms abroad but also strengthening and reaffirming them through its choice to engage with a partner who has already developed them. Thus, through collective learning and the development of best practice concerning the FOOD-FRENZ themes, the EU also exposes itself to a degree of norm *development* and indicates that EU norms do not remain static but are, in fact, fluid.

In conducting research for this particular case-study, Val Orchard, the New Zealand-based technical coordinator of FOOD-FRENZ, was selected as the key-informant for interviewing. In defining New Zealand’s participation in FOOD-FRENZ, Orchard reaffirms that the creation of the project emerged as a result of an approach made by New Zealand to the EU:

“...we weren’t approached by Europe about the FOOD-FRENZ project. It’s our initiative.”⁶²⁷

Orchard states that it was MoRST who had determined food research as an area of mutual interest for New Zealand and Europe and had thus facilitated the formation of a delegation concerning this particular priority which visited Europe in July 2005.⁶²⁸ However, given the Framework Programme requirement that a project must involve a European partner, Martin Hall from the UK’s CCFRA was designated the European

⁶²⁶ European Commission, “FOOD-FRENZ”.

⁶²⁷ Orchard, interview.

⁶²⁸ *Ibid.*

coordinator for the venture.⁶²⁹ Both New Zealand researchers' existing personal contacts and those made during the 2005 delegation visit therefore played a central role in the creation of FOOD-FRENZ. Indeed, Orchard goes on to state that:

“I rank the importance of personal linkages extremely highly... One of the reasons that we're involved in as many EU projects as we are is because we've got someone here [at ESR] who spent ten years in Denmark... We've got someone who spent many years in Aberdeen, in Scotland, who knows people in the UK. Those personal linkages are invaluable.”⁶³⁰

Thus, Orchard identifies the importance of personal contacts in the development of FOOD-FRENZ and also as a larger component of the New Zealand-EU RS&T relationship as a whole.

The creation of the 2005 delegation also provided the opportunity for New Zealand researchers to enhance their collaborative links at the domestic level. Orchard considers that this type of cross-institutional integration was vital in securing the project proposal's success:

“The only reason that we actually got the project funded is because... they were buying 'NZ Inc', they were buying pretty much all of the expertise that exists around New Zealand organisations in one go. So that was a big attraction for them.”⁶³¹

Orchard goes on to state that the NZ Inc approach, in particular, has become one of New Zealand research's strengths due to its promotion by domestic funding providers.⁶³² FRST's Technology New Zealand (TechNZ) funding for business,⁶³³ for example, places real emphasis on the need for industry and/or consumer relationships within RS&T projects and promotes their involvement in the research planning and dissemination

⁶²⁹ Orchard, interview.

⁶³⁰ *Ibid.*

⁶³¹ *Ibid.*

⁶³² *Ibid.*

⁶³³ FRST, “Our Investment Areas”, <http://www.frst.govt.nz/investframe/areas> (05 May 2006).

phases.⁶³⁴ Moreover, she considers this enhanced level of domestic collaboration as a real ‘spin-off’ benefit of the project:

“Universities and CRIs compete like hell with each other but this is a good example of where we’re working together. We’re collaborating within New Zealand to compete with the outside world and not competing within New Zealand.”⁶³⁵

Orchard claims that the strength of New Zealand cross-institutional research collaboration was a specific draw card for the EU, which wants to enhance its capabilities in this sector.⁶³⁶

Participation in FOOD-FRENZ, as a researcher-network-oriented project, has naturally provided the research organisations involved with better links to Europe and the potential to enhance New Zealand’s level of engagement within future Framework Programme projects. Val Orchard thus terms the project a “building phase”, in which individual relationships in RS&T are now being expanded upon and enhanced at the institutional level.⁶³⁷ She states that whilst the EU is attempting to learn from New Zealand ‘best practice’ in cross-sectoral collaborations, the New Zealand science community is, in turn, benefitting from the creation of new research relationships and the strengthening of existing ones.⁶³⁸ Additionally, she claims that securing EU funding for this particular venture will send a strong signal to European researchers concerning the added value Framework Programme collaboration with New Zealand can bring.⁶³⁹

In providing specifically for the enhancement of cross-border linkages between scientists, FOOD-FRENZ intrinsically avoids the collaborative hurdle presented by a lack

⁶³⁴ Orchard, interview.

⁶³⁵ *Ibid.*

⁶³⁶ *Ibid.*

⁶³⁷ *Ibid.*

⁶³⁸ *Ibid.*

⁶³⁹ *Ibid.*

of personal contacts with Europe. Additionally, the project reduces the impact of problems created by geographical distance, another bottleneck previously mentioned within this thesis and considered to be a recurring theme of the New Zealand-EU RS&T relationship.⁶⁴⁰ Val Orchard states, for example, that new technologies, such as video conferencing, help to close the geographical gap and allow much to be achieved remotely. She therefore considers cross-border communication as “less of a distance and more of a day-night thing. If you need to talk to colleagues in Europe, you’ve got to find a time when you can do that.”⁶⁴¹

Concerning collaborative bottlenecks that have had an impact upon the FOOD-FRENZ project, Orchard identifies the bureaucracy that characterises the EU’s Framework Programmes as problematic. She stresses the need for a degree of infrastructural support in both Brussels and New Zealand to allow for easier navigation of the project proposal and negotiation processes:

“...the Framework Programmes are incredibly bureaucratic and so you need to have a Counsellor like Melae in Brussels and you need to have someone like Carole here. Otherwise, it just gets too difficult.”⁶⁴²

However, with such support currently in place, Orchard did not attribute New Zealand’s status as a non-associated third country as making it noticeably more difficult to access the Framework Programmes. Instead, she refers to the difficulty in accessing funds to finance a project once a proposal has been accepted. Orchard concedes that EU funding will always be difficult to acquire, due to the natural focus upon assisting European researchers and institutions. She therefore stresses the importance of securing domestic

⁶⁴⁰ Benson-Rea and Mikic, 24.

⁶⁴¹ Orchard, interview.

⁶⁴² *Ibid.*

funds to either finance New Zealand's role in a collaborative project or supplement any EU funding a project may have been able to secure.⁶⁴³

The negotiation phase of the FOOD-FRENZ project was faced with this exact issue when, with three quarters of the required funding being committed by the EU, New Zealand's research institutions found it difficult to finance the remaining balance. FRST's IIOF, Orchard claims, was meant to provide researchers with the means to access funding for international cooperation in RS&T. However, as the initiative did not recognise networking ventures as eligible for funding, FOOD-FRENZ was unable to qualify.⁶⁴⁴ In turn, Orchard draws attention to the asynchrony between Framework Programme calls and other available domestic funding rounds:

“...the normal FRST funding process would just be out of sync, time-wise, with any European process. So if you go through the European process and you've acquired some funding, you can't then wait at least eighteen months to go through the New Zealand process and hope to get some money at the end of that.”⁶⁴⁵

Consequently, the New Zealand-based contingent of FOOD-FRENZ was required to top up the balance themselves, with some financial assistance from MoRST also. Orchard states that the situation has resulted in the funding of the project's direct costs but the participants' time remains unpaid. She points out that the important strategic nature of the initiative ensured that it was nevertheless put into action, but did not consider such a situation sustainable long term. As a result, she promotes the idea of introducing what she terms a 'contingency fund' that could be used in a more responsive manner.⁶⁴⁶

⁶⁴³ *Ibid.*

⁶⁴⁴ *Ibid.*

⁶⁴⁵ *Ibid.*

⁶⁴⁶ *Ibid.*

Despite the existence of hurdles impacting upon the effectiveness of New Zealand's scientific cooperation with the EU, through her involvement with the increasingly important RS&T player in FOOD-FRENZ as well as MONICA and ProSafeBeef, two EU initiatives including ESR, Orchard defines the EU as an important actor with which researchers should seek to engage. Pointing out that the Union's capacity to devote a much larger financial sum to research than New Zealand, she considers it important to find a way to access the learning opportunities and new technologies that come out of European research. Moreover, she states that:

“In the area of food, a lot of our exports go to Europe and so we have to make sure that we can safeguard their entry into that market. So, if Europe is considering changing its regulations or methods in this field, then we need to know about it.”⁶⁴⁷

Thus, in recognising the importance of engaging in food research with a region that purchases a large amount of New Zealand's foodstuffs and agricultural exports, Orchard in turn draws attention to the crucial role of RS&T in today's society by identifying its potential cross-sectoral impacts.

6.4 PLUS: Participation, Leadership and Urban Sustainability

(i) Introduction

The preceding case-studies both emerged out of opportunities provided within the structure of FP6. In contrast, the 2002 PLUS project predates the two initiatives outlined above and was launched within the Energy, Environment and Sustainable Development

⁶⁴⁷ *Ibid.*

(EESD) theme of FP5.⁶⁴⁸ Additionally, this case-study is the sole study of those selected which has already reached its completion. More specifically, the EESD programme sought to reconcile the Union's social goals with those of its competitive ones and contribute to sustainable development at both domestic and international levels.⁶⁴⁹ In determining the relevance of PLUS, then, the consortium involved drew attention to challenges facing urban environments concerning the need for a more sustainable approach to their continued development.⁶⁵⁰ In turn, the project promoted leadership and community participation as a means to contribute to the recognised need to improve urban policies in this field and, on a wider scale, urban government.⁶⁵¹ Indeed, the project participants go so far as to identify urban leadership and community involvement as an influential factor upon the success of sustainable policies in urban governance.⁶⁵² The field of social science research was chosen as the appropriate medium with which to address this issue and thus PLUS presents another useful example of the wide scope of collaborative research projects available within the Framework Programmes.

The European Commission-funded project aimed to identify existing best practice in urban governance through the comparative analysis of a series of case-studies focusing upon cities recognised as demonstrating effectiveness in this sector. The research was therefore spread across nine target countries, involved the investigation of two cities within each country and ran for a duration of two-and-a-half years. Nations selected for analysis were England, Germany, Greece, Italy, the Netherlands, Norway, Poland,

⁶⁴⁸ FEAST, "Projects: PLUS", <http://www.feast.org/projects/?ID=89> (03 August 2008).

⁶⁴⁹ The European Commission, "Energy, Environment and Sustainable Development", <http://cordis.europa.eu/eesd/src/overview.htm> (02 August 2008).

⁶⁵⁰ Murray Stewart, Laurence Carmichael, David Sweeting, Joanna Howard, Charissa de Zeuw, "Participation, Leadership and Urban Sustainability: Final Research Report", http://www.plus-aura.org/public+pdf+files/scientific_report.pdf (02 August 2008).

⁶⁵¹ *Ibid.*

⁶⁵² *Ibid.*

Sweden and New Zealand.⁶⁵³ In order to effectively compare target cities, a common method of data collection was employed and involved the study of research concerning local governance, analysis of the structures and policies present in each city, investigation into cities' institutional arrangements providing for local action, conducting public opinion surveys concerning perceptions of leadership and a final comparative analysis of the collated findings.⁶⁵⁴ Finally, upon the completion of the project, the research outcomes of PLUS were disseminated through a range of mediums such as conference papers and journal articles but with a main focus on the release of two publications: *Democracy: Leadership and Community Involvement* and *Leadership and Participation: Searching for Sustainability in European Cities*.⁶⁵⁵

(ii) New Zealand participation

The scope of New Zealand's involvement in PLUS was limited to a single contribution from Christine Cheyne, Senior Lecturer within the Resource and Environmental Planning Programme at Massey University. However, New Zealand was nevertheless considered a valuable contributor to the initiative and participation was focused on the provision of findings concerning urban governance from the selected case-study cities of Christchurch and Waitakere. These cities were chosen for investigation due to their implementation of the Long Term Council Community Plan (LTCCP) which aims to harmonise the cities' competitive and social priorities.⁶⁵⁶ Referring back to the thematic priorities set out by the

⁶⁵³ Focusing upon the cities of Bristol and Stoke-on-Trent; Hannover and Heidelberg; Athens and Volos; Turin and Cinisello Balsamo; Roermond and Enschede; Oslo and Bergen; Poznań and Ostrow Wielkopolski; Stockholm and Göteborg; and Christchurch and Waitakere respectively.

⁶⁵⁴ Stewart, et al. *Participation, Leadership and Urban Sustainability*.

⁶⁵⁵ *Ibid.*

⁶⁵⁶ *Ibid.*

EESD programme, then, it is possible to deduce the complementary nature of New Zealand policies in practice with those which the EU hopes to promote.⁶⁵⁷ Cheyne's specific responsibilities within PLUS centred upon conducting two case-studies in the field of urban governance in Christchurch and Waitakere. Although her participation did not receive any direct finance from the European Commission, the overall funds awarded to the project allowed Cheyne to participate in the project meetings held throughout the duration of the venture.⁶⁵⁸

Although New Zealand's role within PLUS was significantly smaller than the two other collaborative projects chosen for analysis in this chapter, the project was particularly important strategically in terms of the ongoing benefits it has produced for Cheyne, and her New Zealand-based contacts, in the creation of new links with European researchers.⁶⁵⁹ This will be discussed in more detail in the following section. Moreover, the social science focus of the initiative provides an interesting contrast to the other case-studies in terms of the genre of research collaboration available. It also brings attention to the excellence that New Zealand can demonstrate in other research areas. Cheyne considers that the expansion of New Zealand's current institutional focus on niche areas of excellence in sectors such as food and agriculture as important in the ongoing development of the RS&T relationship between New Zealand and the EU.⁶⁶⁰ This point, too, will be incorporated into the succeeding section of this case-study.

(iii) Findings

⁶⁵⁷ The European Commission, "Energy, Environment and Sustainable Development".

⁶⁵⁸ Christine Cheyne, interview by author, telephone interview, 24 June 2008.

⁶⁵⁹ *Ibid.*

⁶⁶⁰ *Ibid.*

PLUS presents a very obvious example of the balancing act the EU wishes to play in the field of RS&T. As referred to earlier, the wider goal of the PLUS project, within the framework of the EESD programme, involves the harmonisation of both competitive goals and the promotion of the Union's social objectives. In particular, the Commission states that:

“...the specific programme will form a key part of the European contribution to global initiatives and programmes... The promotion of sustainable development will not be possible unless economic objectives relating to technological development, competitiveness and growth are reconciled with societal goals...”

Engaging with the EU constitutes a contribution to the region's own competitiveness and offers an opportunity to undertake collective learning in specific fields. This participation can be applied to improve the international environment, whilst also benefitting a non-associated third country at the domestic level. New Zealand's return for participation in this project, then, differs from that of the EU's in that Cheyne's contribution focused on an area that New Zealand was already proficient in and which the Union wished to improve. The resultant linkages Cheyne forged through her participation in the project constituted the primary objective of her involvement in PLUS.

As the sole participant in the project, Cheyne was chosen as the key-informant for the analysis of New Zealand participation in PLUS. In outlining her involvement within the project, Cheyne emphasises the central role that personal linkages had to play in both her access to the project as well as the return gained concerning her participation. In addition to the particular interest in New Zealand's reforms and models of local governance, she attributes her inclusion in PLUS to a personal contact in Europe.⁶⁶¹ Moreover, despite the small scale of the project and New Zealand's involvement within

⁶⁶¹ *Ibid.*

it, Cheyne also considers the researcher linkages forged through PLUS as a significant spin-off benefit of the initiative. She states that these links have remained active since the project's completion in 2004. For example, in 2005 and 2007, Cheyne facilitated a New Zealand seminar tour for two visiting professors from Europe. Additionally, in June 2008, she returned to Europe herself for a brief period to meet with former-PLUS project colleagues.

Cheyne considers her participation in PLUS to have also provided indirect benefits for her domestic colleagues, citing the opportunity for her postgraduate students to make use of, and build upon, the contacts that she has forged. Moreover, her involvement also exposed her to other collaborative opportunities and she identifies FP5's Developing Institutional and Social Capacity for Urban Sustainability (DISCUS)⁶⁶² venture as a particular project relevant to the research of two of her current PhD candidates. What is more, the knowledge Cheyne gained in the fields of cross-national research, policy transfer and European sustainable development as a result of involvement in PLUS has also naturally been disseminated through the Senior Lecturer's research, postgraduate supervision and teaching. In this way, Cheyne determines the personal linkage aspect in New Zealand-EU RS&T ventures as vital and considers access to the Framework Programmes as particularly difficult in the absence of existing collaborations.⁶⁶³

PLUS has also produced further benefits for New Zealand research as a whole. Cheyne states that as a result of participation in this project, the country gained

⁶⁶² European Commission, "FP5 Project Record", http://cordis.europa.eu/data/PROJ_FP5/ACTIONeqDndSESSIONeq112362005919ndDOCeq487ndTBLeqEN_PROJ.htm (01 August 2008).

⁶⁶³ Cheyne, interview.

considerable publicity and exposure in Europe concerning its efforts in the sector of sustainable development. Moreover, she refers to New Zealand's recognised models of local government legislation and political leadership as being of particular interest to European researchers active in this field.⁶⁶⁴ Heightening New Zealand's visibility within Europe naturally enhances the potential for further social science collaborations between the two. In addition, the positive cooperative experience PLUS provided Cheyne led to her participation in New Zealand's European Union Centre's Network, which she in turn attributes to her current participation in the EU-led Reconstituting Democracy in Europe (RECON) initiative.⁶⁶⁵

Although Cheyne advocates a very favourable experience in engaging in EU collaborative research projects, her involvement within PLUS was not without its setbacks. In particular, project partners were charged with presenting four local-government case-studies. However, given her ineligibility to apply EU funds to the fieldwork required in New Zealand, Cheyne had to scale-down her research responsibilities to two case-studies. Nevertheless, she considers current external and internal research funding bodies such as MoRST and FRST as good opportunities for academic researchers to engage in similar initiatives and to facilitate valuable New Zealand-EU travel exchanges.⁶⁶⁶ Moreover, Cheyne promotes the enhanced usage of video and internet conferencing to not only breach geographical and financial barriers to cross-border collaboration but also in terms of the increasingly 'carbon-constrained world'.⁶⁶⁷

⁶⁶⁴ *Ibid.*

⁶⁶⁵ RECON, "Reconstituting Democracy in Europe", <http://www.reconproject.eu/> (29 July 2008).

⁶⁶⁶ Cheyne, interview.

⁶⁶⁷ *Ibid.*

6.5 Discussion

(i) Introduction

Throughout this dissertation, a series of themes have been identified as characterising the nature of the New Zealand-EU RS&T relationship. Chapters four and five, in their focus upon the opinions of political elites, have already illustrated issues relating to the importance of personal linkages, the requirement to maintain a good level of visibility within Europe and problems concerning the Framework Programme application processes, asynchrony in project versus funding submissions and geographical distance. The findings collated from researcher involvement in ISAFRUIT, FOOD-FRENZ and PLUS, in turn, also demonstrate the existence of these themes. The selected case-studies therefore confirm these themes' existence within the real-life context of collaborative projects in practice. Moreover, collating the findings from these studies thus provides a comprehensive overview of what typical New Zealand-EU RS&T collaboration may look like and, as such, provide a valuable resource for researchers looking to engage in the EU's Framework Programme projects.

The case-study discussion will now move on to drawing commonalities between designated projects concerning the themes of the EU's role in international RS&T, the importance of personal linkages, intangible benefits, collaborative bottlenecks and New Zealand and EU-specific findings. Finally, the discussion will deduce what the findings tell of the wider picture of New Zealand-EU RS&T relations.

(ii) The EU's role as an international RS&T player

Perhaps inherent to their participation in EU-led research programmes, the case-study key-informants illustrated a definite consensus regarding the importance of the EU as an international RS&T player. In determining her opinion, Christine Cheyne referred to cultural and historical affinities shared by New Zealand and the Union which she considered made the EU an appropriate collaborative partner in RS&T.⁶⁶⁸ Jill Stanley, with specific reference to HortResearch's goals in its ISAFRUIT participation, views that cooperating with one of our largest and thus important markets allows for a better understanding of the market, enhancing the company's competitive capacity.⁶⁶⁹ She also points out that by its very nature, the EU is very good at collaborating internally and thus, by seeking a degree of RS&T cooperation with the Union, provides New Zealand researchers with a partner already possessing a wealth of collective knowledge. As referred to earlier, Val Orchard echoed Stanley's point of view in explaining New Zealand's role in FOOD-FRENZ by illustrating that, as much of New Zealand's agricultural produce and food stuffs are exported to Europe, cooperation in this field can assist in safeguarding access to this important market for the country.⁶⁷⁰

The opinions of Stanley and Orchard present a more business-oriented view of the New Zealand-EU relationship. However, Stanley did mention that collaboration with numerous partners, such as within ISAFRUIT, "really diversifies your thinking".⁶⁷¹ Leading on from this statement, it is possible to identify that cooperation with multiple research partners not only constitutes the spread of knowledge and technologies but, as

⁶⁶⁸ Cheyne, interview.

⁶⁶⁹ Stanley, interview.

⁶⁷⁰ Orchard, interview.

⁶⁷¹ Stanley, interview.

Manners suggests, the diffusion of norms also. Stanley's observation also bears some similarity to Cheyne's more "social" approach to the EU's importance in RS&T. The commonalities shared between the two parties, as Cheyne referred to, can be seen to have also produced similar priorities, methods and objectives in research and technology and, by collaborating, promotes and strengthens these objectives across the two regions.

(iii) Personal linkages

Considered to be a vital component by all three key-informants concerning its role in assisting access to Framework Programme projects, as well as a key benefit of such engagement, the importance of personal linkages was certainly the most dominant theme that emerged across each of the individual case-studies. Stanley, Orchard and Cheyne all attest to its significant role in assisting New Zealand researcher's participation in EU-led projects. For example, whilst HortResearch's excellence in the field of fruit research was a major draw-card for ISAFRUIT's European partners, the CRI's existing personal linkages with members of the EUFRIN group had made its prowess in this field visible within Europe.⁶⁷² Referring to FOOD-FRENZ, the initiative was created out of the linkages formed during New Zealand's 2005 food delegation visit to Europe and ESR's own contacts with UK-based CCFRA.⁶⁷³ Finally, Christine Cheyne's involvement in PLUS was also attributed to personal contacts with European colleagues in her field of research.⁶⁷⁴

The key-informants not only considered the existence of personal linkages as important in enhancing the success of researchers' engagement with the EU in this field

⁶⁷² *Ibid.*

⁶⁷³ Orchard, interview.

⁶⁷⁴ Cheyne, interview.

but concluded that access to the Framework Programmes would be a difficult task without them. Stanley, as previously quoted, specifically stated:

“I think it’s very unlikely to be able to gain access to projects in the EU without personal linkages in some way.”⁶⁷⁵

Val Orchard, too, ranked personal linkages “extremely highly”,⁶⁷⁶ and attributed ESR’s own involvement in other Framework Programme activities due to the CRI’s contacts in both Denmark and the UK.⁶⁷⁷ Cheyne, in turn, considered personal contacts as “vital”.⁶⁷⁸ Moreover, these opinions were not limited to these three specific cases in question. Ross Atkinson, Science Leader of the HortResearch team engaged in EuroPREVALL,⁶⁷⁹ another EU-led FP6 initiative, stated that: “To get into a Framework Programme project, you *have* to have these personal linkages.”⁶⁸⁰ Additionally, Tony Conner, as Crop&Food’s representative in the FP6 GO-GLOBAL⁶⁸¹ project, termed personal linkages as “absolutely critical”⁶⁸² concerning factors such as mutual trust and compatible partnerships that are required to initiate collaborative research projects.⁶⁸³ What is more, Conner states that, at present, non-associated third country researchers are particularly reliant on an EU partner due to the restriction that third countries cannot lead a research project.⁶⁸⁴

Finally, the FOOD-FRENZ venture and its provisions for research partnership networking demonstrates that the organisational forces driving New Zealand-EU RS&T

⁶⁷⁵ Stanley, interview.

⁶⁷⁶ Orchard, interview.

⁶⁷⁷ *Ibid.*

⁶⁷⁸ Cheyne, interview.

⁶⁷⁹ EuroPREVALL, “EuroPREVALL”, <http://www.euoprevall.org/> (17 December 2007).

⁶⁸⁰ Ross Atkinson, interview by author, HortResearch Mt Albert, 3 January 2008.

⁶⁸¹ GO-GLOBAL, “GO-GLOBAL”, <http://www.goglobalnetwork.eu/default.aspx> (09 October 2007).

⁶⁸² Tony Conner, interview by author, Crop and Food Research Lincoln, 16 October 2007.

⁶⁸³ *Ibid.*

⁶⁸⁴ *Ibid.*

engagement have indeed recognised the importance of personal linkages in enhancing cooperation levels. This factor is also particularly important in regard to non-associated third country access to the Framework Programmes, where geographical distance can make it difficult to forge research relationships with potential colleagues. FOOD-FRENZ therefore provides a concrete example of how New Zealand's and Europe's organisational forces are working to further enhance their respective abilities to enhance links abroad.

(iv) Intangible benefits

Related to the theme concerning the importance of personal contacts is that of the intangible outcomes of New Zealand-EU Framework Programme collaboration. Across the three cases identified for study, the key-informants ranked the substantive 'spin-offs' as more important than the funding potential regarding engagement with the EU. Indeed, the funds committed by the EU for FOOD-FRENZ represents an exception to the New Zealand-EU relationship in RS&T, in that finance is rarely available for non-associated third countries participating in the Framework Programmes.⁶⁸⁵ However, this aspect of New Zealand-EU RS&T collaboration will be discussed in greater detail in the following section.

The potential to secure funding is not generally considered the primary objective of New Zealand researchers collaborating with the EU. Instead, there is a clear consensus between the key-informants that, as briefly mentioned above, the real benefits lie in forging and enhancing new and existing collaborative links with European researchers. In

⁶⁸⁵ Cordis, "Seventh Research Framework Programme (FP7): Outside the EU", http://cordis.europa.eu/fp7/public_en.html (03 June 2008).

turn, doing so naturally improves researchers' potential to engage in further collaborative programmes and ultimately contribute to the ongoing introduction of valuable knowledge and technologies to enhance New Zealand's international competitiveness. Val Orchard, for example, considers that acquiring EU funding to cover a majority of the FOOD-FRENZ project costs transcends the implicated monetary benefits:

“...the fact that we've got the work funded at all will send a very strong signal to RS&T players in EU countries that we've got skills in New Zealand worth their while tapping into.”⁶⁸⁶

Having experience in previous Framework Programme ventures thus provides real value regarding opening up opportunities to engage in future projects. Stanley, for example, states that HortResearch's involvement in ISAFRUIT naturally exposed the CRI to other relevant RS&T players with whom links had not been in place and thus opened doors for further collaborative opportunities.⁶⁸⁷ In turn, she attributes the recent submission of a series of FP7 proposals with EU partners to HortResearch's participation in ISAFRUIT and states that the Framework Programme application processes are often made easier should a researcher or research institution have had previous involvement in this.

Additionally, Christine Cheyne's involvement in PLUS provides an effective example of the way in which the Framework Programme's provision for collective learning and its resultant dissemination benefits participating third countries. As mentioned within the earlier investigation of the project, Cheyne considered the knowledge she acquired within the programme as enhancing her own research as well as her capacity as a postgraduate supervisor and Senior Lecturer.⁶⁸⁸ Her position at Massey University also clearly demonstrates the added value of her specific involvement in

⁶⁸⁶ Orchard, interview.

⁶⁸⁷ Stanley, interview.

⁶⁸⁸ Cheyne, interview.

PLUS, given her ability to disseminate knowledge from such project participation in a very comprehensive manner. Cheyne's experience in PLUS also links in with that illustrated by FOOD-FRENZ and ISAFRUIT, concerning the provision Framework Programme collaboration makes to create and/or enhance linkages with European researchers. For example, as outlined above, Cheyne has not only maintained but built upon her existing contacts and attests that her involvement within RECON was a result of her positive experience in participating in EU-driven research.⁶⁸⁹

(v) Funding

Cross-analysis of the three selected cases has also allowed for the identification of a series of common issues that the key-informants considered as barriers to more effective New Zealand-EU RS&T cooperation. Although the case-studies themselves were varied in terms of their specific experiences, problems created by current available funding mechanisms were nevertheless commonly referred to by the interview participants. As mentioned above, there is limited capacity for New Zealand researchers to acquire funds from the Union to assist in their Framework Programme participation. More specifically, Orchard states that: "...it is difficult to get money out of Europe... I think they want our expertise but they don't particularly want to pay for it."⁶⁹⁰ It is interesting that even FOOD-FRENZ, with three quarters of its designated funding coming from the EU, still found it difficult to match the remaining balance through the use of domestic funding opportunities. However, whilst New Zealand does indeed have fewer financial resources at its disposal than the EU for RS&T investment, the situation outlined here was not so

⁶⁸⁹ *Ibid.*

⁶⁹⁰ Orchard, interview.

much influenced by a lack of funds but by the asynchrony present between Framework Programme calls and New Zealand's domestic RS&T funding rounds.

Project versus funding asynchronous can thus seriously impact upon the successfulness of New Zealand's international engagement in RS&T. Val Orchard, as mentioned above, refers to New Zealand-based researchers' frustrations concerning their inability to secure domestic funding once accepted into a Framework Programme project.⁶⁹¹ Christine Cheyne's experience within PLUS also demonstrated problems created by the inability of many researchers to access such funds, the consequence of which led to Cheyne reducing her level of involvement within the programme.⁶⁹² Finally, Jill Stanley draws attention to the fact that entire projects can sometimes be abandoned due to the lack of available finances to see an initiative, even if already accepted by the EU, through to its conclusion.⁶⁹³

Whilst the asynchrony between Framework Programme proposal calls and domestic funding submission deadlines does create significant problems, the three key-informants also draw attention to the lack of available EU-focused funding in RS&T. The chapter's earlier analysis of FOOD-FRENZ, for example, illustrated the hurdle that the project's New Zealand-based participants faced concerning the venture's ineligibility to access funding provided by IIOF. Complementing the implications that this finding has for cooperation with Europe, HortResearch's Jill Stanley also refers to the ineffectiveness of IIOF in assisting international collaboration. In particular, she draws attention to the Fund's emphasis on collaborative efforts with other priority partners in North Asia, stating that the IIOF's evaluation system ranks this region considerably higher than it

⁶⁹¹ *Ibid.*

⁶⁹² Cheyne, interview.

⁶⁹³ Stanley, interview.

does Europe and thus makes it very difficult for researchers to obtain funds for RS&T cooperation with the EU.

Through their respective Framework Programme experiences, Stanley, Orchard and Cheyne consider that the New Zealand institutions promoting RS&T development need to approach international collaboration with Europe in a much more proactive manner. Stanley, for example, states that although MoRST has identified Europe as a priority partner with whom to develop better international linkages in science, the funding provisions for doing so do not reflect this priority.⁶⁹⁴ Val Orchard considers MoRST's international strategy to be a good one but stresses the need to develop a funding mechanism that will allow the Ministry's goal for increased research cooperation with Europe to be realised in practice.⁶⁹⁵ Cheyne, in contrast, focuses less on the provision of dedicated European research funds and more on increasing the scope of priority themes for collaboration, suggesting that even though the funds available for individual projects would be decreased, the capacity to reap the valuable intangible benefits mentioned in the preceding section would be enhanced.⁶⁹⁶

The case-studies in question were thus varied concerning their experiences in accessing available funding mechanisms. However, in terms of the opinions presented by the three key-informants regarding this issue, the commonalities between them are evident. Although they did naturally acknowledge that increasing the amount would certainly assist researchers' attempts to engage at the international level, the three interview participants were nevertheless clear on the realities and constraints of the current level of domestic funding. Given the informants' acquired knowledge of the

⁶⁹⁴ Stanley, interview.

⁶⁹⁵ *Ibid.*

⁶⁹⁶ Cheyne, interview.

difficulties in accessing domestic funds, their proposed solutions were very similar in that they instead promoted the more strategic use of it rather than a great increase in monetary value.

(vi) Distance

Consistent with another central theme impacting upon New Zealand-EU cooperation in RS&T identified earlier within the thesis, the case-studies in question uniformly show distance to be a barrier to more effective collaboration with the EU. Thus, tied in with issues concerning funding, as outlined above, problems created by geographical distance can often be exacerbated by the inability to finance international travel. As already referred to, Stanley draws attention to the required travel involved when participating in EU-led ventures, considering that distance in both practical and monetary terms is limiting upon New Zealand-EU RS&T engagement.⁶⁹⁷

In this chapter's earlier focus on FOOD-FRENZ, Orchard also referred to problems concerning the time-difference that also stems from the distance issue,⁶⁹⁸ thus making communication between the two more complicated. Additionally, although Christine Cheyne views the provision for reciprocal EU-New Zealand scientific delegation visits as favourable, she advises that a considerable effort to maintain the momentum gained during the visits once they have been completed is necessary.⁶⁹⁹ The geographical distance between the two parties could therefore potentially threaten further progress made during such meetings.

⁶⁹⁷ Stanley, interview.

⁶⁹⁸ Orchard, interview.

⁶⁹⁹ Cheyne, interview.

However, the key-informants were also united in stressing that the “tyranny of distance”⁷⁰⁰ did not exist to the same extent as it once did. Stanley, Orchard and Cheyne all advocated the use of e-mail, video and web-conferencing as effective ways to ensure that the lines of communication between research partners were kept open.⁷⁰¹ Developments made in the field of technology can thus provide researchers considerable scope to interact and, indeed, collaborate, remotely.

(v) EU bureaucracy

Referring back to the chapter’s introduction, where Marie Curie Fellow Annick Masselot’s identified the problems created by the EU’s bureaucratic procedures, the complicated application processes associated with the EU’s Framework Programmes affected the investigated cases also. Concerning the ISAFRUIT project, Stanley mentions the difficulties presented to researchers before a project has even been launched. She considers, for example, it to be currently very difficult to locate non-associated third country guidelines for participation in the Framework Programmes.⁷⁰² Cheyne also draws attention to the research community’s need for more information, encouragement and support and also promotes the potential to profile existing research collaborations so as to better prepare researchers wishing to access Framework Programme projects.⁷⁰³

Orchard, too, has found the bureaucratic nature of the Framework Programmes difficult to navigate:

“The Framework Programmes are incredibly bureaucratic and so you need to have a Counsellor in Brussels and you need to have someone like Carole

⁷⁰⁰ Benson-Rea and Mikic, “New Zealand-Europe Trade Relations”, 21.

⁷⁰¹ Stanley, Orchard and Cheyne, interviews.

⁷⁰² Stanley, interview.

⁷⁰³ Cheyne, interview.

[Glynn, the current Facilitating Research between Europe and New Zealand (FRENZ) coordinator] here. Otherwise, it just gets too difficult.”⁷⁰⁴

Stanley and Cheyne’s respective experiences in collaborating within EU-led research projects have led them to attest to the valuable presence of the Science and Technology Counsellor in Brussels and the creation of the FRENZ initiative. In particular, Cheyne considered FRENZ to constitute a “positive step” in the New Zealand-EU RS&T relationship,⁷⁰⁵ whilst Stanley referred to Carole Glynn’s ongoing support to HortResearch as “very useful”, also mentioning her support with HortResearch’s proposal submission for the FP7 International Research Staff and Exchange Scheme (IRSES).⁷⁰⁶ Although the three studies faced issues concerning Framework Programme bureaucracy, they also illustrated the existence of, and utilised, the available assistance provided by MoRST and the EU in order to allow for easier access to EU-led projects.

6.6 Conclusion

ISAFRUIT, FOOD-FRENZ and PLUS were the cooperative New Zealand-EU RS&T projects chosen for investigation within this section of the thesis. They were chosen for their ability to represent different themes and methods of collaboration so as to allow a range of results for a more complete analysis. Cleavage number one investigated an EU-driven project in which New Zealand researchers were invited to participate. Cleavage number two demonstrated the case of a New Zealand-initiated bilateral venture with the Union. The third cleavage was deemed of interest due to the fact that the research conducted was of a social science background, signalling scope for additional areas of

⁷⁰⁴ Orchard, interview.

⁷⁰⁵ Cheyne, interview.

⁷⁰⁶ Stanley, interview.

Framework Programme engagement. The findings from these individual projects were thus collated in order to define the nature of New Zealand-EU RS&T collaboration in general.

The findings deduced from the case-studies reflected identified themes concerning third-country engagement in the EU Framework Programmes. The importance of the EU as an international RS&T actor, the significant role played by personal linkages in accessing Framework Programme projects, the intangible benefits provided by such multilateral cooperation, as well as collaborative hurdles presented by a lack of strategic funding, the geographical distance and Framework Programme bureaucracy, were all displayed within the selected projects and were explicitly referred to by the interview participants. Overall, these three projects indicate New Zealand researchers' capacity to effectively engage with the EU in their respective fields of excellence despite the extra effort they may have to make to overcome the identified cooperative barriers.

Finally, engagement in these particular projects also demonstrates the duality present in EU RS&T policy. In seeking to enhance the Union's overall competitiveness, the Framework Programmes look to attract relevant expertise from around the globe. However, ISAFRUIT, FOOD-FRENZ and PLUS are also examples of the big geopolitical objectives sought by the EU. These projects, with their focus upon the elevation of the citizen in their research, illustrate the ability of the EU to both enhance its own competitiveness whilst looking to contribute to issues that are also relevant to others outside European borders.

Chapter Seven

Conclusion

7.1 Introduction

This thesis has aimed to address the gap in literature regarding the New Zealand-EU relationship in RS&T. The specific issue for research was determined as follows:

In 1991, a Science and Technological Cooperation (STC) Arrangement was formed between the EU and New Zealand. However, in 2008, much scope exists to develop this relationship further. Is a future New Zealand-EU relationship in the field of RS&T both feasible and appropriate, and if so, how can New Zealand raise its profile in the EU to become a desired partner for joint research enterprises?

The EU's role in RS&T constituted the independent variable of the research focus, thus determining it as the influential factor affecting the overall nature of the New Zealand-EU relationship. To attain a comprehensive understanding of New Zealand-EU research cooperation, the thesis began by assessing the EU's identity as an actor in this field. The EU's role in research was defined as largely normative in nature and, consequently, the Union's engagement with non-associated third countries was placed within a constructivist framework. In doing so, it was possible to account for the Union's ability to conduct its foreign affairs through means other than traditional 'high politics'.

The research therefore defined RS&T collaboration as a valuable component of the EU's external relations. With respect to the development of the New Zealand-EU research relationship, similar heritages and shared world views, values and priorities ensured that New Zealand and the EU were, in many respects, 'natural partners'.⁷⁰⁷ Having identified the value that international collaboration can contribute to

⁷⁰⁷ Helen Clark, "Sustainable Development", *Parliament*, 28 November 2007, <http://www.scoop.co.nz/stories/PA0711/S00552.htm> (18 August 2008).

developments in contemporary RS&T, cooperation in this field evidently served to satisfy the material interests of both the EU and New Zealand. However, the investigation of the former's international identity also demonstrated RS&T's capacity to disseminate core European norms amongst the third countries with which the EU engages. Analysis of the EU's current role in RS&T also illustrated the increasing relevance of science in addressing the Union's social priorities, such as food, health, sustainable development and the environment. The emergence of the New Zealand-EU RS&T relationship thus occurred due to the identification of mutual interests, priorities and competencies in this field. In turn, the resulting cross-fertilisation of ideas has facilitated the wider promotion and reinforcement of shared New Zealand-EU values and objectives.

Investigating the selected research topic required an analysis of the New Zealand-EU RS&T relationship, which officially commenced following the launch of the STC Arrangement in 1991. Limited official interaction took place subsequent to the creation of the Arrangement and the document was considered little more than a 'paper tiger'.⁷⁰⁸ However, the Sixth Framework Programme's (FP6) launch in 2002, described as "open to the world", signalled the introduction of a greater degree of internationalisation within the EU Framework Programmes. In response, New Zealand's Ministry of Research, Science and Technology (MoRST) intensified its efforts to engage with Europe in the field of RS&T from 2004. The thesis thus identified that, by 2008, the research relationship had significantly matured when compared to its modest beginnings. The following section will therefore discuss the particular factors, both positive and negative, which have impacted upon the development of this partnership.

⁷⁰⁸ Lynne Hunter, "The New Zealand-EU Science Relationship", 24 May 2006, personal e-mail (21 August 2008).

7.2 Findings

(i) Themes of New Zealand-EU RS&T engagement

Combined with an assessment of Australian and Canadian engagement in EU-led research ventures, examination of the recent developments in New Zealand-EU RS&T revealed a number of recurring themes influencing interaction with the Union in this field. The EU's internal preoccupations, the 'tyranny of distance', a lack of available funds, asynchrony between project and funding proposal deadlines and Framework Programme bureaucracy all constituted factors which had a detrimental impact upon the New Zealand-EU RS&T relationship.

However, despite these factors, the EU remains a priority partner for New Zealand. The research findings overwhelmingly emphasise the importance of forging, maintaining and enhancing personal linkages with EU researchers, as doing so greatly improves third country researchers' chances to participate in the Framework Programmes. The following sections will thus draw together the collective research findings concerning each theme and discuss them.

(i) Internal European preoccupations versus third country visibility

Despite the successful Europeanisation of the EU's RS&T capability, the research outlined that the Union is often preoccupied with internal matters, making it difficult for non-associated third countries to register on the 'EU radar'. In addition, collaboration with candidate countries, associated countries, International Cooperation Partner

Countries (ICPC) and other third countries such as the United States (US), Japan and China takes precedence over that with smaller states, such as New Zealand.

Visibility problems were not only found in Europe, however. Chapter five revealed that a lack of awareness on the part of third country research communities, regarding opportunities presented by the EU Framework Programmes, was prevalent across all three countries investigated. In addressing the two-pronged aspect of this problematic factor, MoRST has undertaken a series of initiatives at the official level that have served to raise New Zealand's visibility within Europe. The installation of the Brussels-based Science Counsellor, the formation of New Zealand science delegations to visit Europe, the creation of FRENZ, the launch of FOOD-FRENZ and the most recent 'upgrade' to an STC Agreement are examples of the official mechanisms facilitated, and promoted, by MoRST to enhance New Zealand-EU RS&T.

These macro-level initiatives proved highly valuable in addressing both the issue of visibility and other identified collaborative bottlenecks in a holistic manner. Chapters four and five, for example, demonstrated that the 'unofficial' STC Arrangement created confusion regarding New Zealand's ability to participate in the Framework Programmes. Securing the STC Agreement thus allowed MoRST to rectify the situation and also ensure New Zealand research a greater degree of visibility within the EU, given that the country will now register as an 'official' STC Agreement partner. FRENZ has specifically served to enhance the visibility of Framework Programme opportunities amongst the New Zealand research community and the position of Science Counsellor has provided a boost to New Zealand's visibility 'on the ground' in Brussels. In turn,

these initiatives have thus contributed to greater levels of researcher participation in both FP6 and FP7, as outlined in chapter four.

(ii) The tripartite: the ‘tyranny of distance’, domestic funding and New Zealand-EU institutional asynchronies

The geographical barrier that inhibits levels of New Zealand-EU RS&T engagement was identified by Stuart in his 1991 assessment of New Zealand research and development, as outlined in chapter two. Naturally, this factor still affects New Zealand-EU collaboration today. The country’s relative geographical isolation makes it difficult for the domestic research community to both establish and maintain those personal contacts which the thesis determines as vital for the health of the New Zealand-EU RS&T relationship.

Furthermore, chapters four, five and six illustrated that the distance factor was inextricably tied to issues regarding New Zealand’s limited financial resources. The cost of self-funded participation in EU Framework Programmes is exacerbated by the necessary travel costs accrued by New Zealand researchers. In addition, the situation is worsened by disparities between the two parties’ individual funding systems, where deadlines do not always coincide and thus further limit New Zealand researchers’ access to Framework Programme projects.

However, the research also found that recently launched initiatives at the macro-level went some way to addressing these issues. The provisions of the joint New Zealand-Cooperation in Science and Technology (COST) venture, which work to explicitly enhance mobility between Europe and New Zealand, were outlined in chapter four. HortResearch employee Jill Stanley also specifically referred to the initiative as

constituting an important and valuable component of New Zealand-EU RS&T relations in chapter six. Additionally, chapter four identified the International Research Science and Exchange Schemes (IRSES), provided for within FP7, as providing the opportunity to simultaneously address issues presented by distance, limited finance and deadline asynchronies.

(iii) Framework Programme bureaucracy

Problems presented by the bureaucracy commonly associated with the Framework Programmes were, in chapters three and five, identified as affecting not only third country researchers, but EU-based participants also. Stanley and Orchard both drew attention to this fact in chapter six. Stanley, in particular, outlined the bureaucratic difficulties encountered by third country researchers attempting to access the Framework Programmes for the first time, citing that even knowing where to begin was a difficult task in itself.⁷⁰⁹ Orchard also referred to the Programmes as “incredibly bureaucratic”, identifying the important role of the Science Counsellor and FRENZ in facilitating easier navigation of the Framework Programme application processes.

Indeed, the provision of these two mechanisms has contributed to improving researcher awareness in terms of initiating involvement in EU Framework Programmes. FRENZ’s focus on providing a forum for New Zealand researchers to seek assistance concerning project proposals also ensures that any confusion or misinformation, arising out of the complicated application processes, is diffused.

(iv) Personal linkages

⁷⁰⁹ Stanley, interview.

Concerning the development of the EU's internal RS&T capability, the stimulation of transnational collaboration was regarded as one of the most important benefits of participation in EU-led research initiatives.⁷¹⁰ Peterson and Sharp stated, for example, that Framework Programme participants considered the collaborative opportunities the Programmes provided to be of great value, even in comparison to the potential to secure research funding or enhance competitiveness.⁷¹¹ The value that Europe places upon opportunities to establish collaborative links is thus clear and was most recently demonstrated by the comprehensive internationalisation of the Seventh Framework Programme (FP7).

The development of the New Zealand-EU RS&T relationship has also been enhanced through the intensification of personal links between researchers. Although MoRST has increased its involvement in facilitating links at the official level, possessing personal links is still of vital importance regarding the New Zealand research community's engagement with the EU. For example, Carole Glynn states that FRENZ, in enhancing New Zealand participation in the Programmes, would work with, and build upon, existing contacts between researchers.

The comparative study of Australian and Canadian involvement in EU research ventures revealed that the importance placed upon forging and maintaining personal links was not unique to New Zealand. Lynne Hunter stressed, for example, the vital role third country Science Counsellors played at the official level of engagement:

“...it's essential that you have a Counsellor on the ground there... If you want to be noticed, you have to make those personal contacts and maintain them...”⁷¹²

⁷¹⁰ Peterson and Sharp, *Technology Policy in the European Union*, 190.

⁷¹¹ *Ibid*, 233.

⁷¹² Hunter, interview.

Desvignes-Hicks, project manager of the Forum for European-Australian Science and Technology cooperation (FEAST) also considered nurturing personal contacts important regarding Australian-EU RS&T collaboration:

“...push on mobility. Because having seen people, it’s the best way to increase collaboration. And because we are far away from Europe, if you’re not there – you’re not there.”⁷¹³

Of all the components assessed in the examination of New Zealand-EU relations in RS&T, the findings drawn from the case-studies demonstrate the value of possessing personal contacts most clearly. A third country partner cannot initiate a project within the Framework Programmes, due to the requirement that they be brought in by a European partner. The New Zealand-driven FOOD-FRENZ initiative thus illustrated the necessity for third country researchers to link with their European counterparts. The New Zealand component of FOOD-FRENZ could not have launched the venture without having secured the support from Britain’s Campden and Chorleywood Food Research Association (CCFRA).

Furthermore, the case-study respondents all revealed that their participation in their respective Framework Programme projects was attributable to existing personal contacts. Jill Stanley, for example, stated that HortResearch had been invited to take part in ISAFRUIT by the European Fruit Research Institutes Network (EUFRIN), with whom the company had strong collaborative links. Christine Cheyne’s involvement in the Participation, Leadership and Urban Sustainability (PLUS) project was also facilitated by existing linkages with participating partners from the UK. Moreover, all the respondents emphasised that the collaborative nature of the Framework Programmes provided the

⁷¹³ Desvignes-Hicks, interview.

opportunity to make new contacts in their relevant fields of research, thus increasing the likelihood of their involvement in future Framework Programme projects.

7.3 Conclusions and recommendations

The central themes outlined above thus demonstrate particular factors that characterise the overall nature of the New Zealand-EU RS&T relationship. To address the research focus in question, the thesis ultimately argues that, despite the partnership's modest beginnings and the existence of issues that can hinder collaboration, New Zealand already constitutes a desirable research partner for the EU. The intensification of MoRST's interaction with the EU, and subsequent joint attempts to enhance the level of RS&T cooperation between New Zealand and European researchers, signals the Ministry's commitment to ensure that the relationship remains in good health. In turn, the increasing levels of New Zealand research participation within the more recent Framework Programmes certainly indicates the community's capacity to engage with its European counterparts.

However, the time frame within which New Zealand-EU engagement has intensified is short. To ensure the health of the relationship long-term, a number of factors must be taken into account by both the New Zealand research community and government-level institutions. Recognising the normative nature of the EU and demonstrating a willingness to work with the Union as regards this focus was identified as important in ensuring more effective New Zealand-EU RS&T collaboration. Chapter five suggested that engaging on files of EU geopolitical importance assists in enhancing a third country's visibility as a desirable collaborative partner. The complementary nature

of the two parties' research priorities thus places New Zealand in an excellent position to exploit this situation. Chapter six, in its focus on case-studies involving New Zealand-EU research in food innovation and sustainability, thus indicated that New Zealand has proved adept at engaging in research that addresses the Union's larger geopolitical priorities. Consequently, the ability to recognise the EU's identity in the field of RS&T is an important factor for third countries in selecting where, and how, to engage.

To become more effective in future New Zealand-EU RS&T collaborative efforts, it is necessary to recognise, and work within, the country's limits. Bringing together the findings from chapters four, five and six, it was identified that improvements could be made concerning MoRST's financial commitment to New Zealand-EU research cooperation. Although the EU was identified as a partner that the Ministry wishes to target, the research revealed that there are currently no dedicated funds to assist researchers to engage with Europe.

However, taking into account New Zealand's small size, it is conceivable that financial restrictions will always limit the country's levels of international RS&T cooperation. Concerning the scale of EU-led research, it is simply not possible for New Zealand researchers to engage in all areas of national priority. Consequently, chapter five outlined Lynne Hunter's recommendations regarding the necessity for smaller third-countries to be particularly targeted in their engagement with the EU.⁷¹⁴ MoRST and the New Zealand research community should therefore work towards facilitating better harmonisation between domestic funding systems available for international RS&T involvement and EU Framework Programme calls that reflect the country's research priorities. Furthermore, it is necessary to better communicate the intangible benefits, as

⁷¹⁴ Hunter, interview.

opposed to potential financial gain, provided by Framework Programme participation to the New Zealand research community. Stanley stated, for example, that some researchers become more preoccupied with securing funds for collaboration and lose sight of the importance of collaboration itself.⁷¹⁵

New Zealand's ability to promote its excellence in niche fields of research has proved valuable in increasing the country's initial level of visibility within the EU. Given its intensive focus on primary industry, it is predicted that complementary research in this area will continue to constitute a major national priority for New Zealand in the years to come. However, in 2008, New Zealand's levels of participation within RS&T have substantially intensified, suggesting that the country has succeeded in enhancing its visibility as a potential research partner for Europe. In planning for the future of New Zealand-EU RS&T collaboration, MoRST should begin to look beyond its focus on niche capabilities and expand upon the research fields in which domestic researchers currently engage.

Christine Cheyne states that limited resources naturally require determining niche and priority areas for collaboration. However, she identifies the potential danger of solely relying on these areas in international collaboration:

“...their success is so intimately connected with New Zealand's ‘clean green’ brand. If that's damaged in any way – the way that, say, farming, health and food in Britain was damaged by the mad cow disease scare – if anything would happen that undermines or discredits our food industry, then we may really be on the ‘outer’.”⁷¹⁶

⁷¹⁵ Stanley, telephone conversation.

⁷¹⁶ Cheyne, interview.

Now, more than ever, New Zealand's expertise in particular fields is visible within Europe. Consequently, MoRST should begin to work towards "spreading the risk"⁷¹⁷ with regard to the expansion of research priorities and capabilities. Cheyne, for example, identifies areas such as public management, sustainability, energy and renewable energy as other domestic strengths ripe for promotion. Additionally, with reference to Framework Programme opportunities in social-science research, Cheyne states that New Zealand's local and central governmental reforms have been of world class standard and are of international interest and significance.⁷¹⁸ In particular, the investigation of PLUS in chapter six provides a good example of the existence of alternative areas of research available for collaboration.

Finally, the research findings overwhelmingly emphasised the vital role of personal linkages in facilitating and enhancing RS&T collaboration with Europe. The development of macro-level initiatives, such as FRENZ, the Marie Curie Fellowships and the COST and IRSES mobility schemes are all valuable tools in enhancing New Zealand access to European research. However, the research has demonstrated that personal contacts still provide the most valuable resource in enhancing international RS&T collaboration. Consequently, 'informal' mechanisms must not be marginalised by the increasing level of 'official' interaction. In addition to MoRST's current focus on forging new links in selected priority areas, the Ministry also needs to look more closely at working with existing collaborations across a wider range of research fields.⁷¹⁹

7.4 Limitations and further research

⁷¹⁷ *Ibid.*

⁷¹⁸ *Ibid.*

⁷¹⁹ *Ibid.*

The contemporary nature of the research focus constitutes the major limitation placed upon this thesis. As previously outlined, although official relations between New Zealand and the EU in RS&T began in 1991, the partnership only began to truly develop post-2004. Close to the completion of the thesis, the two parties ‘upgraded’ their existing STC Arrangement to an Agreement. This legally binding Agreement, providing for annual Joint Science and Technology Cooperation Committee (JSTCC) meetings, will thus influence, and hopefully enhance, New Zealand-EU relations in this field. Consequently, this development provides room for further research to be undertaken concerning the impact that the STC Agreement will have upon the New Zealand-EU RS&T partnership.

During the research process, negotiations concerning the creation of new initiatives to enhance New Zealand-EU RS&T were taking place. The expansion of FRENZ, the COST and IRSES mobility schemes and the development of coordinated project calls all constitute impending joint ventures that the dissertation has been unable to account for. These developments will naturally have an impact on the character of New Zealand-EU RS&T relations. Investigation of the partnership, following the implementation of these initiatives, would prove valuable in assessing the continued transformation of the New Zealand-EU relationship.

Taking into account New Zealand’s enhanced visibility in EU-driven RS&T, the thesis touched upon the potential to expand the focus of New Zealand’s research priorities. Although the dissertation explored PLUS, a social-science Framework Programme project, restrictions on time, the number of case-studies that could be feasibly conducted and the scarcity of other examples of such collaboration have meant that this field of research was not addressed in extensive detail. It is predicted that the continued

development of the New Zealand-EU RS&T relationship will enable increased participation in such areas and, consequently, it would be of interest to further explore this developing capability.

The normative nature of the EU was identified as an effective way in which to understand the Union's activities in the broader field of RS&T. Further research could thus be undertaken in applying the established framework to other fields of EU external relations, such as environmental policy. Additionally, the theoretical framework could be applied at the micro-level, by adopting a particular field of collaborative research to focus on. Given New Zealand and EU priorities and competencies in the area, an investigation of the cooperative opportunities in the fields of environment and climate change could thus constitute an interesting case-study.

In working to address the initial gap in literature regarding RS&T cooperation between New Zealand and the EU, this dissertation ultimately aims to enhance the collective understanding of the specific nature of the relationship. In turn, concerning the increasingly important role RS&T is set to play in a world dominated by knowledge-based economies, it is hoped that the content will provide a valuable contribution to future research undertaken in this field.

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Appendices

Appendix I

THE SINGLE EUROPEAN ACT

LUXEMBOURG

17 February 1986

Subsection V - Research and technological development

ARTICLE 24

A Title VI shall be added to Part Three of the EEC Treaty reading as follows:

'TITLE VI

Research and technological development

ARTICLE 130f

1. The Community's aim shall be to strengthen the scientific and technological basis of European industry and to encourage it to become more competitive at international level.
2. In order to achieve this, it shall encourage undertakings including small and medium-sized undertakings, research centres and universities in their research and technological development activities; it shall support their efforts to co-operate with one another, aiming notably at enabling undertakings to exploit the Community's internal market potential to the full, in particular through the opening up of national public contracts, the definition of common standards and the removal of legal and fiscal barriers to that co-operation.
3. In the achievement of these aims, special account shall be taken of the connection between the common research and technological development effort, the establishment of the internal market and the implementation of common policies, particularly as regards competition and trade.

ARTICLE 130g

In pursuing these objectives the Community shall carry out the following activities, complementing the activities carried out in the Member States:

- (a) implementation of research, technological development and demonstration programmes, by promoting co-operation with undertakings, research centres and universities;
- (b) promotion of co-operation in the field of Community research, technological development and demonstration with third countries and international organizations;
- (c) dissemination and optimisation of the results of activities in Community research, technological development and demonstration;
- (d) stimulation of the training and mobility of researchers in the Community.

ARTICLE 130h

Member States shall, in liaison with the Commission, co-ordinate among themselves the policies and programmes carried out at national level. In close contact with the Member States, the Commission may take any useful initiative to promote such coordination.

ARTICLE 130i

1. The Community shall adopt a multi-annual framework programme setting out all its activities. The framework programme shall lay down the scientific and technical objectives, define their respective priorities, set out the main lines of the activities envisaged and fix the amount necessary, the detailed rules for financial participation by the Community in the programme as a whole and the breakdown of this amount between the various activities envisaged.

2. The framework programme may be adapted or supplemented, as the situation changes.

ARTICLE 130k

The framework programme shall be implemented through specific programmes developed within each activity. Each specific programme shall define the detailed rules for implementing it, fix its duration and provide for the means deemed necessary. The Council shall define the detailed arrangements for the dissemination of knowledge resulting from the specific programmes.

ARTICLE 130l

In implementing the multi-annual framework programme, supplementary programmes may be decided on involving the participation of certain Member States only, which shall finance them subject to possible Community participation. The Council shall adopt the rules applicable to supplementary programmes, particularly as regards the dissemination of knowledge and the access of other Member States.

ARTICLE 130m

In implementing the multi-annual framework programme, the Community may make provisions, with the agreement of the Member States concerned, for participation in

research and development programmes undertaken by several Member States, including participation in the structures created for the execution of those programmes.

ARTICLE 130n

In implementing the multi-annual framework programme, the Community may make provision for co-operation in Community research, technological development and demonstration with third countries or international organizations. The detailed arrangements for such co-operation may be the subject of international agreements between the Community and the third parties concerned which shall be negotiated and concluded in accordance with Article 228.

ARTICLE 130o

The Community may set up joint undertakings or any other structure necessary for the efficient execution of programmes of Community research, technological development and demonstration.

ARTICLE 130p

1. The detailed arrangements for financing each programme, including any Community contribution, shall be established at the time of the adoption of the programme.
2. The amount of the Community's annual contribution shall be laid down under the budgetary procedure, without prejudice to other possible methods of Community financing. The estimated cost of the specific programmes must not in aggregate exceed the financial provision in the framework programme.

ARTICLE 130q

1. The Council shall, acting unanimously on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, adopt the provisions referred to in Articles 130i and 130o.
2. The Council shall, acting by a qualified majority on a proposal from the Commission, after consulting the Economic and Social Committee, and in co-operation with the European Parliament, adopt the provisions referred to in Articles 130k, 130l, 130m, 130n and 130p(1). The adoption of these supplementary programmes shall also require the agreement of the Member States concerned.'

Subsection VI - Environment

ARTICLE 25

A Title VII shall be added to Part Three of the EEC Treaty reading as follows:

'TITLE VII

Environment

ARTICLE 130r

1. Action by the Community relating to the environment shall have the following objectives:

- to preserve, protect and improve the quality of the environment;
- to contribute towards protecting human health;
- to ensure a prudent and rational utilization of natural resources.

2. Action by the Community relating to the environment shall be based on the principles that preventive action should be taken, that environmental damage should as a priority be rectified at source, and that the polluter should pay. Environmental protection requirements shall be a component of the Community's other policies.

3. In preparing its action relating to the environment, the Community shall take account of

- available scientific and technical data;
- environmental conditions in the various regions of the Community,
- the potential benefits and costs of action or of lack of action;
- the economic and social development of the Community as a whole and the balanced development of its regions.

4. The Community shall take action relating to the environment to the extent to which the objectives referred to in paragraph I can be attained better at Community level than at the level of the individual Member States. Without prejudice to certain measures of a Community nature, the Member States shall finance and implement the other measures.

5. Within their respective spheres of competence, the Community and the Member States shall co-operate with third countries and with the relevant international organizations. The arrangements for Community co-operation may be the subject of agreements between the Community and the third parties concerned, which shall be negotiated and concluded in accordance with Article 228. The previous paragraph shall be without prejudice to Member States' competence to negotiate in international bodies and to conclude international agreements.

ARTICLE 130s

The Council, acting unanimously on a proposal from the Commission and after consulting the European Parliament and the Economic and Social Committee, shall decide what action is to be taken by the Community. The Council shall, under the conditions laid down in the preceding subparagraph, define those matters on which decisions are to be taken by a qualified majority.

ARTICLE 130t

The protective measures adopted, in common pursuant to Article 130s shall not prevent any Member State from maintaining or introducing more stringent protective measures compatible with this Treaty.'

Appendices

Appendix II

ARRANGEMENT BETWEEN
THE COMMISSION OF THE EUROPEAN COMMUNITIES
AND THE GOVERNMENT OF NEW ZEALAND
FOR COOPERATION
IN SCIENCE AND TECHNOLOGY

The Commission of the European Communities and the Government of New Zealand have come to the following arrangement:

1. The Commission of the European Communities and the Government of New Zealand will cooperate in fields of science and technology of mutual interest.
2. The fields identified for cooperation will include, but are not limited to:
 - a. Agriculture
 - b. Biomass
 - c. Biotechnology
 - d. Environment
 - e. Forestry
 - f. Renewable energies
 - g. Telecommunications and information technologies.
3. The parties will initiate cooperation by the exchange of information arising from research in New Zealand and the European Communities in the above fields. Such information will be limited to that which the Parties have the authority to disclose. Cooperation will cover the categories outlined in item 2 and will be carried out by means of:
 - a. the exchange of publications and of research results, including where applicable, mutual access to data bases and information networks;
 - b. the exchange of experts;
 - c. seminars, symposia and technical workshops;
 - d. visits to research laboratories and centres.
4. The activities carried out under this Arrangement will depend on funds and personnel available to each Party. Each Party will bear the costs of its own participants in cooperative activities under this Arrangement.
5. Representatives of both Parties will, at mutually acceptable intervals, review the progress of activities conducted under this Arrangement and exchange information on planned activities, and programmes in science and technology.
6. This arrangement will come into effect at the time of signature. It does not create obligations binding under international law.

Signed in duplicate at Wellington this 17th of May, 1991.

(Sir Leon Brittan)

FOR THE COMMISSION OF THE EUROPEAN COMMUNITIES

(Don McKinnon)

FOR THE GOVERNMENT OF NEW ZEALAND.

Appendices

Appendix III

Making the Connection

MoRST's International

Linkages Strategy

2005-2007

Making the | Connection

MoRST's International Linkages Strategy

Our mission is to benefit New Zealand by fostering stronger connections between our research community and the rest of the world.

New Zealand's RS&T sector - a need for growth

New Zealand's research, science and technology (RS&T) sector has a significant role to play in the country's future wellbeing. A strong and vibrant RS&T sector will be critical towards New Zealand being able to meet the economic, environmental and social needs of its citizens.

In areas such as biotechnology, environmental science and certain kinds of information and computer technology, New Zealand has already carved a respected niche for itself. Even so, less than 0.2% of the world's RS&T activity occurs in New Zealand, and private sector investment in RS&T remains weak.

However, we know that New Zealand is a source of world class RS&T and while our researchers are well connected internationally our bilateral relationships could contribute more. Those same researchers are constrained by the amount of funding available to them for international scientific collaborations, particularly where co-investment is required. Until recently, the importance of international links in research has not been appropriately recognised in our government-funded RS&T programmes.

One way to grow New Zealand's RS&T sector is through international scientific collaborations that result in access to specialist expertise, high-cost research facilities, new technology and new sources of investment. Good relationships at the researcher level have been shown to be a major, but not the only, factor in successful international scientific collaboration.

A plan for growth - MoRST's International Linkages Strategy

To encourage beneficial relationships, the Ministry of Research, Science and Technology (MoRST), the agency charged with developing science and technology policy for the New Zealand government, has developed an International Linkages Strategy. MoRST's strategy is designed to:

- Facilitate connections between New Zealand science and technology researchers and their international colleagues that result in increased levels of R&D co-investment, innovation, technology transfer and capability enhancement.

- Improve cooperation and coordination among different Government agencies regarding the promotion of New Zealand's RS&T sector overseas.
- Ensure we effectively meet our obligations in multilateral forums such as APEC and the OECD.

Inside this document you will find more detail about MoRST's International Linkages Strategy, some examples of how MoRST is encouraging international science and technology linkages, and contact details if you wish to discuss any aspect of the Strategy with MoRST's International Linkages Team.

Making the Connection – MoRST's International Linkages Strategy

MoRST's International Linkages Strategy is a wide-ranging, integrated plan designed to enhance New Zealand's global connectedness in the field of RS&T and help foster the generation of ideas, innovations and investment. The strategy focuses on three broad areas:

1. Managing New Zealand's international RS&T relationships

If New Zealand is to grow the number and size of its international scientific and technical collaborations, it has to actively manage its international RS&T relationships, both bilaterally and multilaterally, with RS&T fora in organisations such as APEC and the OECD.

Bilateral (country-to-country) relationships

In order to focus its resources on countries with significant potential for RS&T collaboration, MoRST has developed a country assessment system. Assessment criteria include: complementarity (the extent to which a country's RS&T interests align with those of New Zealand), sector preference (the level of support among New Zealand's RS&T community for a closer relationship with a particular country), co-investment potential (a country's capacity to co-invest in joint projects, either in New Zealand or elsewhere), general foreign policy and trade significance, and receptiveness (the extent to which a country is willing/able to enter into successful RS&T collaborations).

Countries on which the Ministry will focus its work are prioritised under three categories:

- Focus – relationships with countries possessing technological leadership and well established research links with New Zealand. These include Australia, the USA, Germany and United Kingdom. The EU, which has 25 Member States, is also regarded as a bilateral partner.

- Strategic - countries with emerging technologies, potential for expanded S&T links with New Zealand, and where New Zealand is able to bring complementary capabilities to research collaboration. These include China, Japan, Korea, France and Canada.
- National Priority – where the rationale for bilateral investment or cooperation in RS&T is based on contributing towards New Zealand’s wider national strategic goals. Singapore and Chile are included in this category.

MoRST initiatives to encourage collaboration between New Zealand and international researchers in countries assessed as significant include:

- Providing funding and logistical support for Ministerial led and other science missions.
- Funding to help researchers meet and engage in pre-project planning.
- Dedicated science and technology (S&T) Counsellors in the EU and USA, and New Zealand based S&T coordinators covering Japan and Germany.
- Monitoring other countries’ policy initiatives, where these affect New Zealand’s RS&T sector, primarily through Counsellors, diplomatic posts, media sources and multilateral fora.
- Effectively using existing bilateral S&T agreements and arrangements.

Implementing detailed relationship management plans for focus and strategic countries.

Multilateral (international forum) relationships

Two key multilateral fora, in terms of growing New Zealand’s international RS&T collaboration, are the Industrial Science and Technology Working Group of APEC and the OECD (Industrial Science and Technology Directorate and its various committees and working groups). We take an active role in both organisations. New Zealand’s hosting of the 4th APEC Ministerial Meeting on Regional S&T Cooperation in March 2004 and associated events (Innovation showcase, APEC R&D Leaders’ Forum) provided the country with a unique opportunity to raise its RS&T profile internationally. It also provided MoRST with the opportunity to develop its bilateral relationships with APEC economies as well as regional S&T policy agendas based on shared issues.

New Zealand’s membership of the OECD is a highly cost-effective means of achieving international recognition of the country’s RS&T sector, and provides access to leading policy thinking in the field. In order to extract maximum benefit from New Zealand’s OECD membership, MoRST plans to:

- Review its past engagement with the OECD, with an eye to effecting improvements where required.
- Have more active dialogue with Ministry of Foreign Affairs and Trade (MFAT) and other Government departments Ministry of Economic Development (MED), Ministry of Agriculture (MAF), Ministry of Education (MinEdu), Ministry of Health (MoH) over OECD issues and representation.

- Develop alliances with APEC economies that are also members of the OECD.
- If possible involve the EU S&T Counsellor in OECD fora and the work of New Zealand's permanent delegation to the OECD.

International RS&T linkages

Under the International Linkages Strategy, MoRST is working to create an environment that encourages international science and technology collaborations. Here are several examples of where the Strategy will be placing particular emphasis:

Germany

Germany is one of New Zealand's most important RS&T partners. 14% of NZ researchers reported working with a German colleague in a 2002 survey, and there is particularly strong collaboration in research fields such as climate change, new materials and nanosciences which are of crucial importance to this country.

We will, over the next couple of years, strengthen links with the Max Planck Institutes and look to develop linkages with the Fraunhofer Institutes. We also want to re-focus government-level actions under the 1977 NZ/Germany STC Agreement towards science areas of mutual strategic importance.

Future visits to Germany by our STC Agreement Co-ordinator will focus on strengthening relationships with key German officials in policy, funding and research organisations, as well as building opportunities in the technology/industrial application fields.

The European Union

Nearly 50% of non-military global research is already undertaken in EU member States, (principally in the UK, Germany and France) and the EU is set to play an increasingly significant role in shaping the RS&T activities of those countries when the 7th Research Framework Programme takes effect in 2007. The International Linkages Strategy focuses on strengthening NZ engagement with the Framework Programme both at a researcher-researcher and more formal official level.

The principal focus of the work of MoRST's Brussels-based S&T Counsellor over 2005-07 will be to maximise New Zealand engagement with, and benefit from, FP7. We expect to establish a joint action plan with the EC's Research Directorate-General in early 2005 to identify and promote collaborative opportunities for New Zealand and EU researchers.

Australia

Australia is a major RS&T partner for New Zealand, with over 20% of New Zealand researchers maintaining links with Australian colleagues.

Recent developments include signing bilateral biotechnology arrangements between New Zealand and three State Governments; New Zealand establishing \$12 million trans-Tasman Biotechnology Fund, and New Zealand agreeing in principle to invest A\$5 million in the Australian Synchrotron located in Victoria.

MoRST focuses on strengthening policy links both with federal and state government agencies in Australia. Our immediate future focus will include:

- facilitating a more active New Zealand role in the A/NZ Biotech Alliance;*
- hosting the 2005 trans-Tasman inter-agency talks in New Zealand;*
- evaluating the reciprocity of trans-Tasman RS&T funding regimes.*

United States

The United States is New Zealand's largest RS&T partner, with some 40% of New Zealand researchers having links with US counterparts. In a major initiative, MoRST deployed its first S&T Counsellor to Washington DC in December 2004. The role of the Counsellor will be to:

- Facilitate contacts between New Zealand and US researchers.*
- Ensure the New Zealand research community has a better understanding and utility of highly complex and diverse US research funding programmes.*
- Help improve access to US research infrastructure.*
- Maximise bilateral collaborative opportunities through improved two way information flows.*

North Asia

In August 2004 a science delegation led by former science Minister Pete Hodgson visited China, Korea and Japan. Sectoral expertise in the mission included ICT, lifesciences including biotechnology, agritechology, nanotechnology and environmental science. The mission was very successful and significant opportunities were identified for follow-up.

New Zealand's RS&T relationship with China has gathered impetus following the signing of an updated bilateral S&T agreement during President Hu Jintao's visit to New Zealand in October 2003. There are substantive links between New Zealand researchers and their Chinese counterparts. MoRST will take a stronger role in supporting and developing this relationship further.

New Zealand's research links with Japan are the best developed and established in the North Asia region. The relationship was given a boost with the appointment of a New Zealand based S&T Coordinator in 2002. MoRST is currently exploring the possibility of a bilateral science arrangement with a major science agency in Japan.

Promising opportunities exist also for closer RS&T links with Korea. South Korea's significant investment in basic research, including life sciences and ICT, and its expertise in commercialising new technologies make it a potentially ideal research partner for New Zealand. There has been significant inbound and outbound mission activity in the past two years which should aid in the development of closer research links.

2. Fine-tuning New Zealand's RS&T funding practices

The way New Zealand organises its RS&T funding practices is crucial to encouraging international science and technology collaborations. New Zealand operates an openly contestable, politically neutral approach to research funding. This has helped make our research sector cost effective and flexible. However it can inhibit development of links with countries where a greater level of government direction and control is exerted over collaborative science funding. In addition, our comparatively limited capacity and our practice of investing on a portfolio basis over quite long periods can constrain the funding system's responsiveness to international joint research opportunities.

Future interventions will focus on developing a capacity for the New Zealand RS&T community to respond quickly to international RS&T policy developments and collaborative opportunities. Some improvement will result from the International Investment Opportunities Fund which was launched in 2004. The ISAT Linkages Fund offers another, albeit relatively modest, mechanism for funding in support of collaborative RS&T opportunities, particularly with 'Focus' and 'Strategic' designated countries.

3. Integrating the promotion of New Zealand's RS&T overseas

If New Zealand is to promote its RS&T sector successfully in the international arena, it is vital that the country's various Government agencies, both on- and off-shore, work together. MoRST recognises the importance of the "whole of Government" approach, and collaborates with MFAT, New Zealand Trade and Enterprise (NZTE) and other agencies to position New Zealand as a source of world-class RS&T.

The relatively small size of New Zealand's public sector and its flexibility is advantageous to establishing cross government alliances. MoRST participates in a number of specialist interdepartmental consultative fora including Growth and Innovation Framework (GIF) global connectedness working groups and an APEC interagency cluster group.

MFAT and NZTE posts offshore work closely with MoRST in the provision of services which include:

- Identifying suitable science media and other contacts for inward fact finding missions to New Zealand.
- Facilitating New Zealand participation in international science and technology expos and fairs.

- Facilitating New Zealand science missions offshore.
- Representational activities on MoRST's behalf.
- Coordinating New Zealand expatriate organisations overseas to support visits and promotional activities.

Analysing emerging RS&T policies and trends of relevance and interest to New Zealand.

Making the Connection – Contacts

If you'd like to know more about MoRST's International Linkages Strategy as it applies to particular countries or international fora, please contact one of MoRST's desk officers in the International Linkages team:

North and South East Asia	Felicity Merrington felicity.merrington@morst.govt.nz
Australia, APEC, OECD	Mark Holman mark.holman@morst.govt.nz
France, Germany, EU	Rick Petersen rick.petersen@morst.govt.nz
North and South America	international@morst.govt.nz
UK, International Science and Technology Linkages Fund (ISAT), Special Projects	Amanda Tomlinson amanda.tomlinson@morst.govt.nz

If you wish to discuss any aspect of collaborative work with science researchers in Europe, the United States, Germany or Japan, please contact one of MoRST's country-specific S&T Counsellors and Coordinators:

European Union	Melae Langbein, Counsellor (via Rick Petersen)
United States	Dr Brian Young (via international@morst.govt.nz)
Germany	Dr Werner Friedrich werner.friedrich@morst.govt.nz
Japan	Dr Kyoko Koishi kyoko.koishi@morst.govt.nz

Published by the New Zealand Ministry of Research, Science & Technology, March 2005

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Appendices

Appendix IV

Sample Case-Study Interview Plan

Participant.

Jill Stanley, HortResearch's business leader for Europe and member of the company's research team participating within the EU ISAFRUIT project.

Approach

Key-informant, semi-structured interview with open-ended questions.

Introduction

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Explanation of Study

The thesis focuses on the New Zealand-European relationship in the field of research, science and technology (RS&T). More specifically, the question to be researched is as follows:

In 1991, a Science and Technology Cooperation (STC) Arrangement was formed between the European Union and New Zealand. However, in 2006, much scope exists to develop this relationship further. Is a future EU-New Zealand relationship in the field of RS&T both feasible and appropriate and, if so, how can New Zealand raise its profile within the EU to become an important partner in joint research enterprises?

Purpose

Jill Stanley has been chosen as the key-informant for this interview due to her involvement within the EU-led ISAFRUIT project. The content of the interview shall therefore focus on ISAFRUIT as a case study for New Zealand-EU cooperation in RS&T, looking at what such a collaborative project tells of EU motivations, the New Zealand response and, ultimately, how the project informs the research question overall.

Focus Questions

1. HortResearch was brought into the ISAFRUIT project thanks to existing linkages with European RS&T players. Could you please explain in more detail as to how HortResearch became involved in ISAFRUIT?
2. In involving HortResearch/New Zealand researchers in such an initiative, what do you think this says about EU motivations as a global RS&T player?
3. What is your/HortResearch's specific role within ISAFRUIT?

4. ISAFRUIT's stated goal is to increase fruit consumption and improve the health of the European community. What does HortResearch/New Zealand have to gain from this collaboration?
5. How is HortResearch funding its participation in ISAFRUIT?
6. Has ISAFRUIT been effective in enhancing HortResearch's profile as a desirable RS&T partner within the EU?
7. At this stage, has ISAFRUIT produced any spin-off benefits for NZ-EU RS&T collaboration?
8. Do you, as a researcher, consider the EU as an important RS&T player with which NZ should engage?
9. As a researcher from a non-associated third country, do you consider the Framework Programmes difficult to access? Can you identify any particular collaborative bottlenecks?
10. Given how HortResearch's involvement in ISAFRUIT was initiated, how important do you consider personal linkages in gaining access to EU research projects?
11. How would you like to see MoRST/the New Zealand government respond to the internationalisation of the EU's RS&T activities?