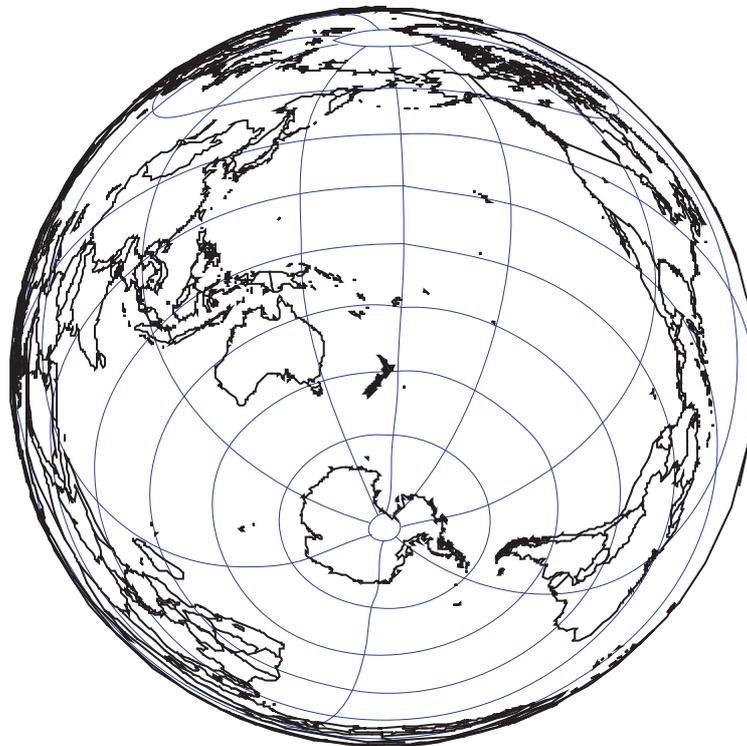


*PERFORMANCE OF THE ISAT LINKAGE  
FUND SCHEME:  
A SURVEY OF 2001-2003 RECIPIENTS*



*ROYAL SOCIETY OF NEW ZEALAND  
JULY 2005*

JULY, 2005

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**ACKNOWLEDGEMENTS:**

My thanks go to the researchers who contributed their time and effort to respond to the survey, and to the institutions which gave the process their support; I am grateful for their cooperation. For advice on the questionnaire, I appreciate the help of Dr Andrea Knox and Pene Greet from FRST, and the International and Evaluation Groups from MoRST. I would also like to thank the Fund's manager, Eddie Davis, for his critical review of this report.

Cover image: Azimuthal equal-area projection of the globe centred on Wellington, created using 'maps' (R Brownrigg) and 'mapproj' (R Brownrigg and TP Minka) in R.

## SUMMARY

- This report describes the results of a survey of 2001, 2002 and 2003 recipients of ISAT Linkage Fund support. The survey focussed on:
  - the extent to which ISAT funding has resulted in enduring international collaborations;
  - the outputs and outcomes arising from ISAT-funded collaborations;
  - the way/s in which collaborations were developed subsequent to ISAT funding, and where grants did not result in an ongoing collaboration, determine the reasons why they did not do so;
  - the extent to which ISAT funding contributed to the development of young researchers;
  - improvements that may be made to the RSNZ's administration of the scheme; and, where possible,
  - the nature and extent of barriers to international collaboration faced by the recipients.
  
- 146 of the 210 ISAT-recipients responded, i.e., 70%, representing a good range of respondents by year of award and institution type.
  
- The scheme has been successful in enabling researchers to form long-lasting collaborations, with the majority of ISAT-supported linkages (92%) continuing to exist after funding has ceased.
  
- ISAT-supported collaborations are scientifically productive; over half of contracts (56%) result in peer-reviewed publications. Respondents indicated that even though years have passed since the contract was completed, in many cases work leading from the award continues to be prepared for publication. In addition, approximately 8% of linkages lead to the creation of new products, while 16% of contracts can be expected to result in the development of new intellectual property.
  
- Less tangibly, but perhaps of greater import, the ISAT programme has fostered significant growth in the research capacity of the recipients. Roughly half of all contracts allowed the establishment of new research skills (53%) and/or new methods (47%) in New Zealand. Of particular interest, two thirds of contracts result in the formation of new collaborations in addition to those directly supported by the Fund.
  
- Surprisingly for such a small award, approximately three quarters of recipients (76%) stated that as a result of the collaboration the career development of those involved had been influenced. In all cases where more detail was offered, the ISAT award was described as having positive effects, such as:
  - enhancing the researcher's profile and/or prestige;
  - contributing to the development of a productive research programme—in a small number of instances, a new research direction—and new collaborative networks;
  - generating high quality publications and/or leading to further funding opportunities;
  - assisting with the establishment of new student programmes; and,
  - influencing promotion.

- ISAT has played a role in supporting the emergence of young researchers. These effects were described as being through the generation of quality publications early in the recipient's career, leading to the establishment of new research posts, and by contributing to the creation, or completion, of successful PhD programmes.
- More than half of contracts (54%) lead to further applications for funding. In the majority of instances where the recipient indicated the outcome of these bids, ISAT-supported collaborations led to successful applications. The government's investment of \$754,625 on the contracts surveyed has, at a conservative estimate, helped leverage between \$2.8M and \$4M in additional funding. Of this, approximately two-fifths came from international sources.
- In the small number of cases (12) where the collaboration had ended, a variety of reasons were offered for one or other of the collaborators being unwilling or unable to continue the linkage: the NZ-based researcher was unable to secure funding (4); the overseas collaborator left a career in science, or lost interest (3); the researcher changed research direction (1); and, New Zealand's physical isolation made continuing collaboration difficult (1).
- While the ISAT programme has been, and continues to be, over-subscribed, slightly more than a third of recipients (34%) described the level of award as being insufficient for the purposes of the application. Of these, 60% indicated they had obtained supplementary funds, and 36% stated that the low level of ISAT-support had compromised the goals of the application.
- There were minor differences in the responses between recipients from different types of organisation. Recipients from Tertiary Education Organisations (TEOs) were more likely to state that the linkage would have occurred, in some form, without ISAT support (33%) than researchers from either private organisations (23%) or CRIs (19%). Similarly, TEO contracts were more likely to be reported as having impacts on career progression (84% cf. 75% CRI and 67% private).
- The majority of respondents (137 or 83%) provided one or more comments on the Fund's administration. The most commonly expressed statements supported the current application (44) and reporting (65) processes, and noted the recipient's positive opinion of the Fund (44). However, a large number of comments were to the effect that the application process was too difficult and/or laborious (41), or noted concerns regarding the value of the award (36); half of these respondents explicitly linked the two, i.e., the effort required for application was too great for the level funded. It was also suggested (12 respondents) that the fund would benefit from being more flexible, either in the times in which applications could be lodged, or in covering cost increases that could not be anticipated at the time of application.

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# INTRODUCTION

## *THE ISAT LINKAGES FUND*

The International Science and Technology (ISAT) Linkages Fund was established in 1994 with the aim of supporting international science and technology links between New Zealand and the world. Since 1998, the contestable component of the Fund has been administered on behalf of the NZ government by the Royal Society of New Zealand. Historically, this part of the ISAT Fund has existed as a number of separate programmes directed to different regions; e.g., CSP to the USA, DFG and FRG to Germany, AUS and KOR to Australia and South Korea respectively, and BRAP, the most flexible of the programmes which was targeted to a collection of “favoured” countries but could allow support for collaborations to other countries under particular circumstances. In 2004, the Fund was simplified to:

- The ISAT Linkages Fund Bilateral Programme, which is specifically dedicated to research collaborations involving Australia, France, Germany, Japan, South Korea, Latin America, the USA, and the United Kingdom, although some funding for research collaborations with other countries is also available under this scheme; and,
- The NZ/Deutsche Forschungsgemeinschaft Programme also targeted at collaborations with Germany

The ISAT Linkages Fund supports either visits to overseas institutions by NZ researchers, or visits to NZ by overseas researchers. Priority is given to collaborations that can be demonstrated to be a new linkage and/or new activity. Applicants must show that the proposal has a purposeful methodology and objective, and that the collaboration will be of strategic relevance to NZ. Funding is intended to cover travel and related costs, but not bench fees or salary. In 2003/04, the average size of an ISAT award was \$4,400.

In a continuation of the way that MoRST operated the scheme, receipt of finances is, in practice, conditional on the Society’s acceptance of a report on the activity. Under exceptional circumstances funds can be released early; however, to date, this facility has never been requested.

It is anticipated that ISAT-funded collaborations will lead to ongoing collaborations and ensuing benefits to New Zealand. However, prior to the survey, the Society’s knowledge of the ongoing effects of ISAT-funding was limited. The Society therefore wished to evaluate the longer term effects of the fund by following-up with past ISAT grant recipients.

## *PURPOSE OF FOLLOW-UP*

- To assess the extent to which ISAT funding resulted in enduring international collaborations;
- To determine the way/s in which ongoing collaborations were developed subsequent to ISAT funding;
- For grants that did not result in ongoing international collaborations, determine the reasons why they did not do so;
- Where possible, assess the nature and extent of barriers to international collaboration faced by recipients and to determine improvements that may be made to RSNZ administration of the scheme;
- To assess the extent to which ISAT funding contributed to the development of young researchers;
- To evaluate the outputs and outcomes arising from ISAT-funded collaborations; and,
- To benchmark findings against what has been found for similar schemes overseas

## METHODOLOGY AND SURVEY POPULATION

In March of 2005, the Royal Society of New Zealand conducted an online survey following recipients of the 243 contestable ISAT Linkages Fund contracts awarded between 2001 and 2003. The text of the online questionnaire is given in the Appendix to this report. These contracts involved 210 principal investigators (PIs) from 33 institutions (which currently exist as 31 separate entities), and collaborations between NZ and 33 other countries.

Of the PIs that had held more than one contract over this period, 21 PIs had two, four held three, and one PI had held five. To minimise the survey burden, a limit of two questionnaires per principal was adopted, and, where applicable, information was sought on the oldest two contracts in the period of interest. In the three instances where it was apparent that the PI had been contracted for the same collaboration twice, they were only surveyed on the most recent activity. These conditions resulted in the exclusion of 10 contracts (i.e., a total of 233 contracts were surveyed); the responses from the affected principles were appropriately weighted in the analysis.

The survey was kept open for four weeks with a reminder sent out after two weeks to those who had, thus far, not attempted the survey. In six cases the respondent was unable to attempt, or complete, the web-survey; five respondents were provided with a text version, while in one instance a simplified questionnaire was administered by phone-interview.

As at the 29th of March, 165 questionnaires had been answered, i.e., the overall response rate was 70% with the associated confidence margin on survey answers being approximately  $\pm 4\%$ . By the survey's conclusion, twelve principals could not be reached, i.e., the non-contact rate was 6%.

Two contracts were erroneously surveyed, in both cases they had been withdrawn due the overseas principal being unable to come to NZ. With the exception of general comments, the responses from these questionnaires have not been included in the results of this report.

The web-based survey was developed and run using "CollectIt", which was developed for the Royal Society of New Zealand by PerfectData Corporation Ltd, Wellington. Responses were treated according to a complex survey design using the "Survey" package<sup>1</sup> in R 2.1.0<sup>2</sup>. Each principal investigator was regarded as a cluster, and non-response was addressed by post-stratifying according to institution type (see table 2).

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<sup>1</sup> T. Lumley (2004) "Analysis of complex survey samples" J. Stat. Soft. 9(8):1-19

<sup>2</sup> R Development Core Team (2005) "R: A language and environment for statistical computing." R Foundation for Statistical Computing, Vienna, Austria. ISBN 3-900051-07-0, URL <http://www.R-project.org>

## SURVEY CONTRACT PROPERTIES.

The recipients of ISAT funding over 2001–2003 tended to be early–mid career researchers. The population sampled had received their highest qualification, in most cases a PhD, on average 15 years prior to receiving the contract, (i.e., mean year of qualification 1989, standard deviation 10 years). However, a small number of applicants (3) have undertaken PhD study subsequent to the completion of their ISAT contract.

ISAT-recipients also appear to be relatively mobile. In addition to the twelve principals that could not be reached, nineteen recipients had moved from the contracted institution to other research positions since their contracts had been awarded. Of these, eight (i.e., ~4% of principals) had taken up research posts outside New Zealand, while two of those who could not be contacted appeared to have left research careers.

The award level and response rate, for the different rounds and institution types is shown in table 1 and table 2 respectively. Further information about the ISAT awards can be found in the Society’s annual Progress and Achievement Reports to government<sup>3</sup>.

*Table 1.* Response rate and grant level by year

<b>Grant Year</b>	<b>Average award</b>	<b># Grants surveyed</b>	<b># Responses</b>
2001	\$3101	79	49
2002	\$3069	86	64
2003	\$3672	68	50
All Years	\$3256	233	163

*Table 2.* Strata weighting by institution type

<b>Institution Type</b>	<b>CRI</b>	<b>Other</b>	<b>Private</b>	<b>TEO</b>	<b>Total</b>
# Responses	93	2	13	55	163
Weighted response	98	2	14	57	171
# Contracts	136	2	17	88	243
Strata response	72%	100%	82%	65%	
Strata weight	1.39	1.00	1.21	1.54	

Where the response to a particular question was less than the total response rate, the number of responses given is noted.

<sup>3</sup> Royal Society of New Zealand PARs are available from the evaluation section of the Society’s website <<http://www.rsnz.org/funding/evaluation/>>

# RESULTS

## IS ISAT FOSTERING THE FORMATION OF ROBUST, LONG-LIVED, COLLABORATIONS?

The Royal Society wished to determine what happens to ISAT-supported collaborations after funding ceased. Four survey questions addressed this issue: Q5, Q6, Q9, and Q10.

- Q5/ DOES THE LINKAGE THAT THIS ISAT GRANT SUPPORTED STILL EXIST? 159 RESPONSES.
  - 64% Yes, currently active
  - 28% Yes, dormant
  - 8% No

The majority (92%) of collaborations still exist one or more years after funding has ceased, demonstrating that ISAT supports linkages that form substantial, long-lived, collaborations. Surprisingly, the proportion of linkage reported as ended appeared unrelated to time elapsed since the contract had been awarded, i.e., 11% for 2001 contracts, 5% for 2002 contracts, and 9% for 2003 contracts. This seems to suggest that collaborations are at their most fragile in the first year following ISAT-support, and if they are able to survive this period they will be essentially stable, at least over the time-scale examined.

- Q6/ HOW LONG (IN MONTHS) HAS IT BEEN SINCE THE LAST CONTACT WAS MADE WITH THE COLLABORATING INSTITUTION?

The average period elapsed since contact was 5.2 +/- 0.4 months, with 61% of respondents having made contact within the last two months. The time since contact was reported as being least for active linkages, and less for dormant collaborations than those which had ended, i.e., 1.9 +/- 0.3 months, 10.0 +/- 0.7 month, and 14 +/- 2 months respectively. There was a correlation between the age of the contract and the period since last contact, e.g. mean period elapsed for 2001 contracts (7.6 +/- 0.9 month) was twice that of 2003 contracts (3.5 +/- 0.4 months), and this was associated with more collaborations being regarded as dormant for 2001 and 2002 contracts than the more recent 2003 contracts, i.e., 27% and 36% respectively cf. 18%.

- Q10/ IF YOU HAVE INDICATED THAT THE COLLABORATION IS CURRENTLY ACTIVE, WHAT FORM DOES THIS COLLABORATION CURRENTLY TAKE? 90 RESPONSES.

Email correspondence	88%	Informal agreement(s)	22%
Phone correspondence	39%	Formal agreement(s)	14%
Continued visits	52%	Co-publication	63%
Personnel exchange	26%	Co-funding	15%
Other	10%		

The fact that collaborations tend to continue to occur via multiple mechanisms of communication, suggests that not only have they survived up until the time of the survey, but they are sufficiently robust that they will persist for some time to come.

- Q9/ IF YOU INDICATED THAT THE COLLABORATION HAS ENDED, WHY DID THE COLLABORATION LAPSE?

Only 12 respondents, i.e., 8%, indicated that the collaboration had ended. The reasons offered varied from of the departure of the collaborator from an S&T career—by retirement or in one case their, unfortunate, demise—through to the stated opinion that the contract was for a finite, defined, project which had been completed. Four respondents commented that they had sought, but been unsuccessful in gaining, funding to continue the linkage and that without financial support the collaboration could not continue. Only one respondent indicated that there was a loss of interest by the collaborating institution.

## ARE ISAT-SUPPORTED COLLABORATIONS SCIENTIFICALLY PRODUCTIVE?

The Society's contact with ISAT-supported collaborations is formally over with the submission of the activity report. As the final release of funding is conditional on the acceptance of this report, it typically follows immediately on the conclusion of the collaborative linkage and is thus an unsatisfactory instrument to assess the longer-term outputs of the scheme. A key purpose of the survey was to attempt to measure these outputs, particularly in the areas of human capital development and publication.

- Q1/ HAS THE EXCHANGE FUNDED BY THIS ISAT CONTRACT LED TO ANY OF THE FOLLOWING, SUBSEQUENT TO THE ACTIVITY REPORT?

New material(s)	31%	New skills	53%
Unique source(s) of information	40%	New methods	47%
New collaboration(s)	66%	Other	12%

Almost all respondents (157 or 96%) indicated that their research capability had been increased in one or more ways through the linkage supported by their ISAT contract. These linkages appear to provide NZ researchers access to additional resources, with a large proportion of contracts leading to the generation of new skills, methods, or to access to novel information and materials. Significantly, two thirds of respondents indicated that the ISAT supported linkage had seeded new collaborations. The miscellaneous outputs included: development of a network of relationships (10 responses); aiding new job placement or recruitment (4 responses); and in one case, contributing to the PI gaining a position on a journal's editorial board. The high degree of enthusiasm of the principals for their research was shown by the large proportion of respondents that used this section to detail particular highlights of their research collaboration.

- Q3/ HAVE ANY OF THE FOLLOWING OUTPUTS OR PUBLICITY DIRECTLY RELATING TO THIS ISAT CONTRACT BEEN GENERATED SINCE THE ACTIVITY REPORT?

New product(s)	8%	Peer-reviewed publication(s)	56%
New service(s)	5%	Conference presentation(s)	53%
Intellectual property	16%	Report(s)	25%
Other	14%		

Approximately 90% of respondents (143) indicated that their ISAT contract had resulted in one or more outputs. Roughly half of all respondents stated the contract had given rise to one or more peer-reviewed publications at the time of the survey, with a similar number indicating additional conference presentations. Importantly, the miscellaneous responses included 19 respondents that indicated that manuscripts were either in press or being prepared for publication, and four examples of contracts that had contributed to the completion of thesis degrees.

## DO ISAT-AWARDS HAVE EFFECTS ON CAREER DEVELOPMENT?

- Q2/ HAS THIS ISAT GRANT ASSISTED, OR IMPAIRED, THE CAREER DEVELOPMENT OF THOSE INVOLVED IN THE COLLABORATION? (IF YES, PLEASE DESCRIBE THEIR POSITION, E.G. PRINCIPAL INVESTIGATOR, POST-DOC, ETC, AND HOW THEIR CAREER WAS AFFECTED.) 155 RESPONSES.

A large majority of the principals that answered this question (118 or 76%) indicated that ISAT’s support had effects on the career progression of those involved.

All respondents that commented on the way in which ISAT-funding had affected career development stated the grant had a positive effect. These effects were reported as being principally in terms of enhancing the PI’s esteem in the eyes of their institution and colleagues, improving their curriculum vitae by being successful in a competitive grant process, and though the publications resulting from the collaboration.

There were minor differences between respondents from different institution types, i.e., TEO contracts were more likely to be reported as having impacts on career progression (84% cf. 75% CRI, and 68% other); however these differences did not reach statistical significance (p=0.12).

Some respondents were bemused by this question; collaborations and the evidence of successful funding applications were seen as being of such self-evident value that an ulterior motive was suspected for the format of the question. The absence of perverse effects of ISAT on career development is reassuring, and suggests that the positive view of these respondents is shared by their institutions.

Taken together the results from questions Q1, Q2, and Q3 demonstrate that the collaborations that ISAT contributes towards produce significant benefits in terms of human capital and research capacity development, in addition to their research productivity. The results from these questions however also exemplify the problems of a follow-up survey; respondents from the earlier contracts commented on the difficulty of definitively attributing positive effects on careers, subsequent funding, and publications to either direct, or even indirect, consequences of receiving ISAT funding, while some of the more recent contractors stated that it was too soon to see these effects, or that the work was still ongoing.

## IS ISAT ACTING AS A SEED FOR FURTHER FUNDING?

One of the objectives against which the Fund is to be assessed is that it facilitate “integration of international innovation activities with mainstream instruments”<sup>4</sup>. In an attempt to determine whether ISAT contracts had, in fact, assisted in accessing mainstream funding sources, recipients were asked whether the linkage had resulted in applications to continue the work supported by the contract, and if so whether these applications had been successful.

- Q4/ DID THE EXCHANGE LEAD TO A BID, OR BIDS, FOR NEW FUNDING FROM ANY OF THE FOLLOWING? 157 RESPONSES.
  - 54% Yes
  - 46% No
- IF YES, PLEASE INDICATE FROM WHICH SOURCE(S)

Marsden Fund	30%
HRC	4%
FRST	44%
NZ Other	25%
International funding agency	40%
International other	17%

<sup>4</sup> “Terms of Reference for the Contestable Programmes of the International Science and Technology (ISAT) Linkages Fund (“the ISAT Linkages Fund”)", Section 2.

- Q8/ IF YOU INDICATED THAT ADDITIONAL FUNDING WAS SOUGHT AS A RESULT OF THE ISAT-SUPPORTED COLLABORATION, WHICH, IF ANY, OF THE APPLICATIONS WERE SUCCESSFUL?

Marsden Fund	10%
HRC	50%
FRST	65%
NZ Other	79%
International funding agency	66%
International other	50%

A limitation in the survey's structure meant that five respondents were not asked about the outcome of their bid; however, it appears that, when sought, ISAT-recipients were very successful in obtaining funding. Success rates for all agencies were equal to, or in excess of, 50% with one obvious exception: in bids to the Marsden Fund, ISAT recipients tended to be no more successful than the typical Marsden applicant. Of note, 24 contracts led to successful bids for international support.

The miscellaneous NZ funding sources approached consisted of: internal research funds; local research foundations; local government; and, a number of fellowship/scholarship bids. Eight contracts led on to engagement with private companies. In contrast, access to international funds was sought from a diverse variety of sources: e.g., nine contracts resulted in one or more National Science Foundation bids; three led to applications to the National Institute of Health, and two applications for Australian Research Council funding. In addition, a number of European funding streams were accessed including, amongst others: OECD programme funding; EU COST; and, Marie Curie; INRA; CNRS; as well as the Royal Society (London); the Wellcome Trust; and, a number of international travel funds. Another eight contracts resulted in approaches to international corporations.

- IF ADDITIONAL FUNDING WAS OBTAINED, PLEASE INDICATE THE RANGE OF SUPPORT THAT WAS GAINED FROM;

	up to \$10,000	\$10,001-\$50,000	\$50,001-\$100,000	> \$100,000
NZ sources	2	16	2	15
International sources	5	5	3	9

Respondents indicated that the ISAT-supported collaboration have, thus far, been successful in leveraging significant additional finance. Taking the minimum and, where possible, maximum of each range, it appears that contracts contributed to securing from \$2.86 million to in excess of \$4.02 million in additional funding. Of this support, \$1.1 million–\$1.5+ million, i.e., roughly two fifths of the total, came from international sources.

## IS ISAT PROVIDING SUFFICIENT SUPPORT FOR THE FORMATION OF INTERNATIONAL LINKAGES?

A previous evaluation of the ISAT programme had shown that a small but significant minority of contract holders, i.e., 25%, found the level of financial support provided by the programme to be inadequate for supporting the contracted exchange<sup>5</sup>. In order to further investigate this situation, ISAT recipients were asked whether the level of funding they had received was sufficient and, if not, how insufficient funding had impacted on the performance of the contract.

- Q7/ WAS THE LEVEL OF ISAT FUNDING SUFFICIENT FOR THE PURPOSES OF THE CONTRACT? (153 RESPONSES)
  - 0.6% (i.e., 1 respondent) Generous
  - 65.4% Adequate
  - 34.0% Insufficient

Two thirds of respondents felt that the level of funding they received was adequate, and a third regarded it as insufficient. While the majority of respondents are still of the opinion that funding levels are adequate, it is of concern that the proportion reporting inadequate funding appears to have grown in the last five years.

- Q12/ IF YOU DESCRIBED THE LEVEL OF FUNDING AS BEING INSUFFICIENT, HOW DID THIS AFFECT THE OBJECTIVES OF THE APPLICATION? (45 RESPONSES)
  - 11% Goals reduced
  - 32% Goals compromised, includes 10 respondents who also report additional funding was obtained.
  - 67% Alternative funding sought (If obtained, what was its source?)

*Responses sum to greater than 100% as some respondents indicated the primary effect of low funding as been a reduction, or compromise, in goals but also listed a source of supplementary finance.*

It is of interest to note that in almost all instances supplementary funding came from the applicant's institution, either through direct funding or via reallocation from another project's budget; however, in a handful of cases private funds were used.

A comparison of the outputs between those who stated the award was insufficient, and those who report the award as being either adequate or generous, found no significant differences between these two groups in terms of the level of award, months since contact with collaborator, contribution to career, outputs, whether the linkage led to further applications for funding, or the level of additional funding gained. The only significant difference detected was in terms of collaboration longevity with 77% of "insufficient"-ly funded linkages leading to collaborations which were currently active cf. 54% for those where funding was perceived as being adequate or better ( $p < 0.02$ ). Thus, it appears that "insufficient"-ly funded contracts are at least as successful as their "adequate"-ly or better funded counterparts. As roughly two-thirds of contracts whose funding was deemed to be "insufficient" had sought supplementary finance, it may be that they represented the more ambitious of the contracts surveyed.

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<sup>5</sup> Simon Harris. "Outcome Evaluation of the ISAT Linkages Fund 1994–1998." Harris Consulting Ltd (2000) p42.

## HOW IMPORTANT IS ISAT-SUPPORT FOR THE LINKAGES THAT IT FUNDS?

An obvious issue of interest to the Society is whether the collaborations that ISAT funds would have occurred in the absence of ISAT funding. Unfortunately for evaluation purposes, a clause in the guidelines to applicants during the rounds of interest states: “[i]nformation provided by applicants...will be destroyed when no longer required in relation to either the application or, if awarded, contract”. This clause prevents the most satisfactory way of addressing this issue, i.e., asking those who were unsuccessful in gaining funding during these rounds whether the activity went ahead regardless. As an alternative, successful applicants were asked whether they believed that the exchange would have taken place without ISAT’s support.

- Q11/ IN YOUR OPINION, WOULD THE EXCHANGE HAVE OCCURRED WITHOUT ISAT FUNDING? (156 RESPONSES)
  - 7% Yes
  - 17% Yes, but in a reduced form
  - 28% Possibly
  - 48% No

From the responses to Q11, it appears that the collaborations that ISAT is funding are unlikely to have occurred in the absence of ISAT support. Only a quarter of respondents felt confident that the collaboration would have occurred without ISAT support, while almost half were of the opinion that the linkage activity had definitely depended on ISAT.

Although the majority of respondent’s from all organisation types stated that the exchange might not have occurred without ISAT-funding, there were differences in the response from researchers from different institutional types (see table 3). Principal investigators from the tertiary education sector were more likely to state that the linkage would have occurred, in some form, without ISAT support than researchers from either CRIs, or other organisations (32%, 19%, and 23% respectively,  $p < 0.03$ ).

*Table 3.* Frequency of opinion of whether the exchange would have happened without ISAT.

Institution	No	Possibly	Yes, but in reduced form	Yes
CRI	58%	23%	14%	5%
TEO	34%	35%	21%	11%
Private/Other	47%	30%	23%	0%

Of the questions asked this is the one most open to bias and it is almost certainly an over-estimate of the role that ISAT is playing. On discussion with the Fund’s manager, the application guidelines for future rounds will be altered to allow the survey of unsuccessful applicants as this will be the only way to accurately assess whether ISAT-support is in fact indispensable for roughly half of the proposed collaborations.

## GENERAL COMMENTS ON THE ISAT LINKAGES FUND

Comment was sought on the Society's administration of the Fund through three questions:

- Q13/ ARE THERE WAYS WHICH YOU FEEL THE FUND'S APPLICATION PROCESS COULD BE IMPROVED?;
- Q14/ ARE THERE WAYS WHICH YOU FEEL THE FUND'S REPORTING PROCESS COULD BE IMPROVED?; AND,
- Q15/ DO YOU HAVE ANY OTHER COMMENTS RELATING TO THE ISAT LINKAGES FUND?

The majority of respondents (137 or 83%) provided one or more comments on the Fund (anonymised quotes have been used to illustrate points in the following section).

The most commonly expressed statements supported the current application (44) and reporting (65) processes. These were followed in frequency by a number of comments to the effect that the Fund's application process was too difficult and/or laborious (41), or noting concerns regarding the financial value of the award (36). Half of these respondents explicitly linked the two, i.e., the effort required for the application was too great for the funding level, and a roughly a quarter (i.e., 12) commented that the labour cost involved in applying approached the value of the award. Of additional concern for the Society, 5 past-recipients indicated that the effort necessary has put them off applying again.

Comments on the value awarded by the Fund varied from the general—e.g., that the funding was too small (26 responses)—to specific requests that the Fund support salary costs (3), the purchase of consumables (1), or making the Fund a full cost instrument (18). Three of these respondents stated that if necessary, these changes should be at the expense of the success rate of the Fund, while another suggested that the fund be split to provide for different categories, e.g., short stays and continuations, as now, and larger awards for intermediate duration collaborations.

It was also suggested, by 12 respondents, that the Fund would benefit from being more flexible either in the times in which applications could be lodged—as the window for exploiting an international collaboration opportunity is often very narrow—or in covering cost increases that could not be anticipated at the time of application.

A number of comments were of the opinion that the Fund's eligibility requirements needed to be relaxed and/or its scope increased. Eleven respondents stated that the Fund should allow a longer period of support than one year. While the majority of these comments were from applicants that were aware, and approved, of the recent change to the Fund allowing two-year funding, one respondent stated that the Fund still caters poorly to multi-year programmes despite this change. Two respondents felt that the limitation on support while on sabbatical was unreasonable if the proposed linkage was not part of the sabbatical. Another two comments stated that post-docs and students should be able to apply, with one of these respondents of the opinion that even the process of applying for funding would provide valuable experience to this group.

Three respondents raised the concern that the difference in the timing of funding rounds between the ISAT scheme and its German DFG counterpart made synchronising awards for longer term exchanges extremely difficult.

The majority of comments on the Fund's reporting processes were also positive, with 65 stating that they either had no concerns or that reporting should be kept as it is. Although two of these, noted that, while currently acceptable, the reporting process was at the limits of what they would expect given the small size of the award.

The practice of withholding payment on the contract until the acceptance of the activity report also received some attention. Three respondents noted that this had caused them to suffer unnecessary financial difficulty. Further comments regarding the reporting process highlighted the conflicting opinions of respondents; an equal number of respondents wanted more extensive follow-up of the contract to those who felt that reporting requirements were already too difficult (8 in each case). In addition, a small number of comments expressed the desire that the activity report should provide an avenue to detail the successes of the contract (2). This view was supported by one researcher who felt that the current report format is too limiting, and that reports should be more substantial and, ideally, suitable for use in assessing subsequent applications to the programme (1). In similar vein, four respondents noted that the requirement to submit the activity report as soon as possible meant that they were unable to comment on the science of the activity let alone predict its outputs, and another noted that they would like to see a form of annual report on the programme detailing highlights of the Fund's activities. In regards to the mechanics of the reporting process: four respondents called for the Fund to introduce electronic reporting, while another felt that the number of copies of the activity report that were required was overly onerous.

When asked to provide general comment on the ISAT programme, the most frequent comments indicated a positive view of the Fund (44 responses). Also of note were statements that the programme had been, and was, of particular benefit to emerging researchers (5), or that the benefits of the collaboration were expected to be long-term in nature (2). However, six respondents noted that ISAT-funding by itself was too small and, that its main benefit was to provide leverage to other financial support. One respondent expressed the belief that the Fund's emphasis on collaborations with favoured-countries was short-sighted as high tech countries were unlikely to feel that collaboration with New Zealand researchers would be of much benefit. In addition, three respondents felt that the expectations of the scheme appeared to be unrealistically high given its low value.

Responses to the survey also indicated that communication problems exist between the Society and the Fund's applicants. A number of respondents appeared to be unaware of the current flexibility of the Fund: nine respondents recommended that the Fund allow support for existing collaborations; five wanted the application procedure to be electronic; four each thought that the Fund should support a broader scope of disciplines—such as the Social Sciences—and linkages to a broader range of countries; and, another four commented that the Fund should support conference attendances during, or as an adjunct to, the linkage. However, each of these issues fall within the current structure of the Fund, e.g., the guidelines state that new collaborations will be given preference for funding over existing linkages rather than existing linkages being ineligible. In addition, respondents explicitly requested clearer guidelines (4), felt there should be more publicity about the start of a funding round (2), and that there should be better access to the DFG programme's coordinator (1). One respondent also indicated that they wished greater feedback on their application; in particular, they felt that the basis of funding less than the budget applied for should be justified to the applicant.

Similar comments on the reporting processes showed that two respondents were unaware that the Society provides a report template<sup>6</sup>, and one each stated that they wanted greater guidance on what the report entailed or greater feedback on the report. In contrast, one respondent indicated that they were happy with the feedback supplied.

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<sup>6</sup> <http://www.rsnz.org/funding/isat/ReportingRequirementsForm.doc>

# CONCLUSIONS

## OUTCOMES FROM THE SCHEME

In the past the Royal Society has had only limited, and erratic, contact with ISAT's principal investigators after the activity report has been accepted, i.e., the most common exception being where the principal applied to the Society for further funding, and as a consequence it was unknown whether ISAT-supported collaborations persisted after funding had ended. Feedback from the survey indicates that almost universally, collaborations initially supported by ISAT contracts continue after funding has ceased. As the frequency with which collaborations were said to have ended did not appear to increase with the time elapsed since contracting, and where noted active collaborations were pursued through multiple communication means, it appears that these collaborations will also persist for the foreseeable future.

"In this particular case, an excellent collaboration has been developed that would not have occurred without the aid of the programme."

In keeping with the recognised value of international collaboration, respondents to this survey indicated that out of proportion to their financial value, these awards were extremely productive, had resulted in increases in the research capacity of the researchers involved, and in many cases led to further, successful, applications for funding.

"This technique has or is supporting one FRST, one internal product development and two AgResearch NSOF programmes."

"The ISAT Linkages programme is a very valuable programme and surveys like this that attempt to "prove" that will always give misleading information. The major benefits of this funding for me have not been asked about in this survey as the specific project benefits are less significant than the overall benefits obtained through building my research collaboration..."

## BARRIERS FACED BY RECIPIENTS

A secondary objective of this evaluation was to identify systemic impediments that recipients faced in either accessing the scheme, or to their ability to successfully establish productive collaborations. As the vast majority of linkages examined by the survey are ongoing, this evaluation has little to offer on what discriminates between short-term and long-lived collaborations. However, a number of other barriers for the Fund were described and these could be grouped into five major themes:

### 1/ THE EFFECT OF ISAT ON CAREER PROGRESSION

Previous investigations of the scheme had implicitly assumed that an ISAT award could only be beneficial to the careers of its recipients. In this evaluation a more neutral question was offered in an attempt to determine whether ISAT was associated with negative effects on its recipients, i.e., "Has this ISAT grant assisted, or impaired, the career development of those involved in the collaboration?" Roughly three quarters of respondents indicated that the ISAT award had affected the career development of the collaborators, and in all cases where the effect was described, the ISAT-award had been beneficial.

Typical responses stated that the linkage had increased the skills of those involved, strengthened their CV's, and in many cases led to additional research proposals and collaborations, e.g.,

“It [the ISAT award] has improved the investigator skill set, laid the foundations for further collaboration and assisted with his profile.”

“The ISAT activity was of great value to myself (PI) in terms of allowing me to work within the lab of one of the few other researchers active in this important field. It has led to a valuable cross fertilisation of ideas, and several other collaborative projects.”

In addition, respondents also commented that the contract had led to quality publications, increased recognition within their research field, and/or successful funding bids, all of which were seen having a positive effects.

While these comments indicate that ISAT-supported collaborations tend to provide indirect aid to its recipient’s career development, in a small number of cases more direct effects were suggested, e.g., the investigator stated that their institution is now “somewhat more supportive than it has been, as they like overseas contacts” or,

“One of the secondary collaborators ... was a PhD student at the time, and is now a full staff member of the Institute; I believe our collaboration has materially advanced his career. In my own case, the collaboration may have made a small contribution to my (successful) advancement to a full Professorship.”

We are pleased to observe that there is no evidence to suggest that the Fund is having perverse effects on the research productivity or career progression of its recipients, e.g.,

“It [the ISAT award] would have assisted both parties because both our employers view this collaboration as positive”

## 2/ FINANCIAL VALUE OF THE AWARD

In addition to the question dealing with funding level, thirty-six respondents used the general comments section to explicitly state that they believed the value of ISAT awards to be too small, e.g.,

“As my Institute has no base funding, the cost of scientist time often limits opportunities to use ISAT for collaborative visits. Contribution to costs alone is often inadequate to support a visit.”

“Partial funding can cause a lot of pain and lead to unsatisfactory results, eg compromised goals or unfair pressure on the scientists. Also, I have been embarrassed by my frugal budget when visiting overseas organisations. Living in campgrounds is not widely considered conducive to high professional productivity: appropriate but modest accommodation should be funded by ISAT.”

“Coming from New Zealand it seems we are always scraping by looking for every possible way to save money: buses vs. taxi, food etc. and it adds to the stress level and ultimately the quality of performance and research. I am very grateful for what I received and just think that a slight increase would really help”

Suggestions for a suitable funding level ranged from relatively modest increases, i.e., 10%, through to doubling the award, i.e., average awards based on 2004 round would be \$4,800–

\$8,800. If, as eighteen respondents suggested, the Fund attempted to meet the full costs of the linkage—salary, overheads, and/or expendables, in addition to accommodation and travel—average awards of \$20,000 might be reasonable, i.e., at current levels the Fund would award approximately 28 contracts per annum.

A small number of respondents also indicated that the Fund would benefit from increased flexibility in either the types of application received or in the timing of rounds, e.g.,

“[The Fund] could be significantly improved (given the time and effort required for the application) if a subsequent application to cover unknown (or unanticipated) changed expenses occurs ...”

“[Increase] Flexibility of timing. Interactions can develop spontaneously, but require rapid action to make the most of opportunities.”

ISAT currently supports two application rounds per annum. While more flexibility may be desirable, the effect of additional funding rounds would be to either add to the Funds administration and panel review costs, or alternatively, put the peer review nature of the scheme at risk. The implications of these changes should be fully investigated before significant changes to the Fund’s operation are considered.

### 3/ FINANCIAL BURDEN OF APPLYING

Previous evaluations of the ISAT scheme had noted that in many cases the principle benefit of the ISAT award was that it enabled leverage of additional support from the host institution<sup>7</sup>. This issue remains a feature of responses to the current survey;

“The value of the awards is relatively low, some of our staff question the value of ISAT because the time required to make the application, if counted at billable hours, may be worth more than the award. However, I believe the award is valuable as it brings in outside support for a collaboration and tends to stimulate interest within our institute, resulting in increased support and a more successful collaboration.”

“The main value of the fund is in using an award as leverage to gain further support from the awardee's employer.”

“When the visit is for a short time period, and the funding is solely for the airfare, the time it takes to apply, and then report, actually costs about as much as the funding you get. Its real use therefore is to show corporate (who do not take into account the time, and therefore cost, applying and reporting takes) that they will need to spend considerably less on your visit, and are therefore more likely to consider it favourably.”

The necessity for supplementary support for ISAT-contracts is also demonstrated by the large number of “insufficient”-ly supported respondents who indicated that they had obtained further finance for the contract’s activities.

<sup>7</sup> “Outcome Evaluation of the ISAT Linkages Fund 1994-1998” *op cit.*; “Review of the New Zealand Activities Undertaken in Support of the Science and Technology Co-operation Agreement between New Zealand and Germany” Report prepared for MoRST by PricewaterhouseCoopers (June 2001).

In addition, although it is worth noting that the most common response to a request for comment was that the application process was satisfactory, for a significant minority the recent changes to the application process appear to have made the process more onerous.

“I placed an application in the last bidding round for a very small amount but found that it was quite a demanding process. The form is too long and requires much effort. In my case it was rejected and I should have simply saved my time for something more substantial.”

“Way too much effort for the small amount of funding offered. The application and the report - plus an application for internal approval left the feeling of not bothering next time”

Although the Society has no control over the level of Fund, it does have a means of blunting this criticism and every effort should be taken to ensure that the compliance costs of ISAT contracts are kept to a minimum while preserving the competitive nature of the Fund.

#### 4/ FAVOURED COUNTRIES

It is within the Fund’s guidelines to primarily support linkages with a defined set of countries—e.g., the Bilateral component of the Fund supports linkages between NZ and researchers based in Australia, France, Germany, Japan, South Korea, Latin America, the USA, and the United Kingdom—although “some funding for research collaborations with other countries is also available”. In practice, this has often limited successful contracts to those exclusively involving the favoured countries of the round, and it was noted by some respondents that greater flexibility in this area would be appreciated.

“Maybe more open to countries other than those of your priority. For example, I didn't get funded for my collaboration with the Netherlands. Hope more chances will be given to those countries as well.”

“It would be great if such a programme could be broadened to include other countries.”

The 1998 evaluation of the Fund found that having each member expecting the gains of the collaboration to be roughly equal was associated linkage longevity. In support for broadening the reach of the scheme, two respondents noted the corollary of this observation, e.g.,

“1. Unless exceptional circumstances technically advanced countries such as USA, Japan, Germany etc. did not show much interest to New Zealand. 2. So the criterion needs not to be only the technically advanced countries.”

However, it should be noted that 19 of the 22 contacts that led on to leverage international funding involved favoured countries, i.e., Australia, France, Germany, Japan, the USA, and the United Kingdom.

#### 5/ SUPPORT FOR SOCIAL SCIENCES

A minority of respondents felt that the scheme does not cater enough for, or perhaps even excludes, the social sciences, e.g.,

“I get the strong impression that the fund is primarily oriented to the interests and needs of researchers in the physical sciences rather than the social sciences (like many other Royal Society initiatives).”

“Scope too limited. Its focus on science and technology largely excludes social, political and legal contexts of research topic. Sustainability is inherently cross-disciplinary.”

As there is no explicit barrier to social science researchers applying to the Fund, it may be that effort should be addressed to informing this sector on the availability of ISAT funding.

## CONTRIBUTION TO YOUNG RESEARCHERS

Whilst not a key objective of the ISAT-Linkages Fund, the Royal Society is expected to demonstrate that the Fund contributes to the development of young researchers. Although the average ISAT-recipient would not normally be regarded as a “young” researcher— i.e., the mean year of the highest qualification was 15 years prior to being awarded the contract—a number of respondents indicated that their collaboration had contributed to the development of researchers at the beginnings of their careers, e.g.,

“This is a very useful programme for young researchers such as myself, providing an excellent opportunity to establish collaborations that would otherwise not be supported due to lack of financial support.”

“This is a highly valuable support programme for researchers, particularly for initiating joint international study in new areas. I have found that it very useful in supporting and sustaining international networks via the exchange of scientists, and most importantly in allowing young researchers to get their first research experience in overseas laboratories with their differing cultures and constraints.”

“[Funding] enabled me to set up collaborations at a critical time in my career ie as an early career researcher.”

In addition to a small number of general comments suggesting that ISAT should be more targeted to the emerging researcher, one past-recipient felt strongly that opening the Fund to the truly emergent researcher would have a number of benefits:

“New Zealand PhD students are not taught (currently lack opportunities) to write official grant proposals. This disadvantages them on the world market, in a real and obvious way. In the past, in special circumstances (new unplanned for opportunity for which no funding existed) top PhD students could apply to ISAT for travel funding. This: 1) gave them the valuable experience of learning how to write a (small, simple) grant proposal; 2) gave them the chance to try to get funding to do something they really wanted to do; and 3) in most cases provided them with just enough funding so that they could travel and undertake the collaboration. They developed new NZ-elsewhere linkages - and they got great outcomes.”

Curiously, those within 5 years of their highest degree were no more likely to report that the ISAT award had had a positive effect on their career development than those with more experience ( $p>0.6$ ).

## DIFFERENCES BETWEEN INSTITUTION TYPES

Applications to ISAT are open to researchers from any type of institution, including those that act as private agents. The Fund has traditionally received, and awarded, the bulk of applications from CRIs, followed by University-based researchers, and a smaller miscellaneous group including researchers from the museum and non-Tertiary education sectors, as well as private companies and individuals. This distribution appears to largely be a function of the relative sizes

of the respective research communities and their access to alternative sources of funding for travel and collaboration.

While respondents' comments indicated that there is a low level of anxiety related to sector-specific issues, particularly, what seems to be increasing financial pressure on CRI-based and private researchers, there appears to be no compelling reason to alter the current responsive nature of the Fund. Contracts with TEO-, CRI-, and privately-based researchers were all equally productive in terms of outputs, led to collaborations that were equally likely to be ongoing, and resulted in similar levels of subsequent funding applications.

“As a university researcher with access to no external funds, I have found the ISAT programme an essential lifeline, enabling me to pursue some new opportunities which are proving fruitful. I only hope that this fund, like so many others have, does NOT get captured by the FRST-funded research consortia (in CRIs and universities). There is still an important place for one-on-one, researcher to researcher collaborations and I hope ISAT will continue to support the development of these kinds of personal linkages.”

“The ISAT fund seems to fund travel and accommodation. However, the major cost of a 2 or 3 week trip is salary/time. Thus the main cost of establishing the linkage has to come from one or other of the institutions. This might be a barrier, especially where the linkage is not associated with an existing project funded within one of these institutions.”

“I believe that the fund should be larger for independent researchers who do not have the benefit of institutional support. There are very few funds truly available for these researchers because universities and CRIs take most of what is around - this severely compromises research innovation outside established institutions.”

“The support I received in the past is appreciated. Even though the funds received were not sufficient to cover all costs, the ISAT funding helped to get additional support from my employer (a CRI).”

“since the [previous] ISAT activity was completed, the application form has been revised and considerably greater effort is required to complete the new form. Due to high cri overheads it is not really worthwhile to apply to ISAT any longer unless >\$5k is being applied for. An attempt at a new multi-year funded ISAT was made, but failed due to fears about displacing money from a successful frst nerf bid.”

Although a lower proportion of contracts from “Other”- and CRI-based researchers were reported as having effects on career development than those of TEO-based researchers, this difference did not reach statistical significance. However, it is perhaps telling that comments such as, “receiving an external grant is valuable for one's CV” were invariably made by respondents from the Universities. The only area where there was evidence for differences between institutions was that recipients in the tertiary education sector were significantly more likely to state that the linkage would have occurred, in some form, without ISAT support than researchers from either CRIs, or other organisations (32%, 19%, and 23% respectively,  $p < 0.03$ ).

## THE ROLE OF THE ISAT LINKAGE SCHEME IN NEW ZEALAND'S RESEARCH ENVIRONMENT

The majority of developed nations have, or provide access to, funds designed to provide flexible sources for short-term travel and collaboration in the fields of research, science, and technology. A partial list includes: the Australian Research Council's Linkage-International awards; the Royal Society's Joint Project programme; the Academy of Finland's "Researcher training and research abroad" scheme; programmes operated by two of the UK Research councils, i.e., BBSRC's "International Scientific Interchange Scheme" and a number of ESRC schemes ("Overseas Travel Grants", "Visiting Researchers", and "Bilateral Research Workshops"); the German Academic Exchange Service (DAAD); as well as, EU programmes under FP4 and FP5, amongst many others.

While the intent of international travel funds tend to be broadly similar to those of the ISAT programme—e.g., to develop international opportunities and utilise overseas advances in science and technology for economic, social and environmental progress of the sponsoring country—these instruments exhibit varying degrees of similarity to the ISAT scheme. For example, travel/mobility awards cover a wide range of distinct axes, i.e.: full cost, incl. salary and bench fees, vs. partial funding; stand-alone support cf. part-funding, or the requirement to link to an established funding stream; research/technology oriented vs. strategic focus; open collaboration cf. targeted countries; competitive vs. allocation models of distribution; and, varying lengths of support. In international terms, the contestable component of the ISAT Linkages Fund is unusually placed by being at the flexible end of many of these spectra. The ISAT Linkages scheme is primarily distinguished by: the small value of its award; the broad range of countries and disciplines covered; the unrestricted access to the Fund; and, its contestable nature. While the Fund is expected to play a strategic role, its "Terms of Reference" place greater emphasis on the Fund being able to demonstrate achievement and productivity in the research/technology arena. Although the scheme's intent is to provide support without the requirement that the applicant's find co-funding, it appears that in practice many recipients feel the need to gain additional support.

Where evaluation evidence exists, despite their different approaches, these types of travel schemes are united in that they tend to be well regarded by their recipients, and can be considered to be productive in fostering successful research collaborations.

## THE FUTURE OF THE FUND

The outcomes from research collaborations, at least the kind that ISAT-supports, appear to be sufficiently positive that it has been suggested that institutions should be aware of, and support them themselves without the need for outside intervention. As collaborative opportunities may only have narrow windows in which they can be acted upon, it has also been suggested that shifting away from a competitive funding scheme to a bulk funding model might be more appropriate. However, competition ensures that scarce resources are allocated to the best, or at least the better, proposals that are able to take advantage of these opportunities. A bulk fund is also likely to strongly disadvantage researchers outside the structures of the TEOs and CRIs.

It has been reported that the main benefit of the award for some applicants is in its ability to leverage internal support. While this is of some concern, it is unclear how significant a problem this is, e.g., although institutions may not be aware of the costs associated with the preparation of an application, private researchers are unlikely to expend effort to no gain yet the Fund consistently receives applications from this quarter.

From the survey's responses, the features of the scheme's management which could be best improved appear to revolve around the balance of the costs and burdens of application and reporting against the value of the award. As previously noted, the Society should make an effort to streamline both processes. However, despite what are obviously heartfelt criticisms of the

award level, and comments to the effect that the Society should “increase value, if necessary at expense of the success rate”, there is reason to believe this would not be of the best value for the scheme. There appears to be no difference, in any measure, between contracts for which funding was deemed “insufficient”, and those for which support was regarded as “adequate” or better. Although this may be due to the large number of contracts obtaining additional support, it appears likely that only a major increase in the average award, e.g, to full cost levels, will significantly affect this perception.

## IS THE FUND MEETING ITS OBJECTIVES?

From the ISAT Fund’s Terms of Reference, the contestable “ISAT Linkages Fund” is expected to contribute to (and be evaluated against) the following objectives: 1/ develop international opportunities and utilise overseas advances in science and technology for economic, social and environmental progress; and, 2/ positively influence regional or international scientific and technology linked activities that advance NZ’s national interests. Within these objectives it is also expected that the Fund will add value to the innovation system by contributing to: filling niches/gaps which mainstream instruments do not adequately cover; facilitating integration of international innovation activities with mainstream instruments; and, through increasing the level of funding, scientific skills and technological capabilities that NZ is able to source from other countries. The Royal Society is expected to provide evidence that the Fund contributes to: formation of enduring international linkages; access to facilities not available in NZ; development of successful bids to mainstream funding instruments; and, international recognition of NZ as a centre for innovation and scientific excellence.

Comment on the Fund from its recipients which related to the Fund’s role touched on many of these points, and were largely positive, e.g.,

“This has been an excellent opportunity to attract a world class researcher. I believe the ISAT Linkages programme is assisting the development of science and technology in New Zealand.”

“Overall, our experience has been that the ISAT fund has been an exceptionally useful tool for our organisation to set up international collaborations, and has led to several new contracts and considerable staff development.”

“This is a valuable source of funding to establish overseas contacts essential to the conduct of world class science and securing the necessary funding from other sources.”

“I see this programme as an excellent one with real spin-offs, particularly in terms of exchange of technical skills.”

“I feel this is an invaluable programme and wholeheartedly support it. New Zealand is geographically isolated. It is essential that we maintain international collaborations, else we rapidly become isolated and find our work becomes of less international relevance. ISAT is especially valuable at times when one is lacking substantive (e.g. Marsden) funding because it helps maintain contacts through which one develops ideas, which can then lead to new research initiatives.”

“ISAT proved to be an ideal way to meet with top US researchers for updating on cutting-edge technologies and [I] personally found the opportunity inspiring and revitalising.”

“This is a very valuable programme that has contributed enormously to our research and to development of my own skills. Face-to-face meetings and first-hand experience of the field research done by collaborators cannot be replaced. Much less would be achieved if interactions had to be electronic, and long-term partnerships would be much less likely to develop. We very much appreciate the support of the ISAT Linkages Fund.”

With the exception of contributing to “international recognition of NZ as a centre for innovation and scientific excellence”, which could be regarded as being trivially satisfied as a consequence of the linkages themselves, the ISAT scheme appears to be satisfying its objectives in accord with findings for broadly similar programmes overseas<sup>8</sup>. Indeed, at least one respondent felt vehemently so:

“This type of funding is ALWAYS highly valuable for facilitating collaborative interactions whether for a 1 day meeting or 3 month interaction. Why there is the constant need to waste so much time filling out surveys to prove what has been shown a thousand times mystifies me.”

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<sup>8</sup> “Impact assessment of the Marie Curie fellowships under the 4th and 5th Framework Programmes of Research and Technological Development of the EU (1994-2002)”, June 2005.

<[http://europa.eu.int/comm/research/fp6/mariecurie-actions/pdf/impact\\_fellow\\_en.pdf](http://europa.eu.int/comm/research/fp6/mariecurie-actions/pdf/impact_fellow_en.pdf)>;

M Simpson, “Evaluation of ESPRC’s Overseas Travel Grant Scheme”, 2005.

## RECOMMENDATIONS

The ISAT Linkage Fund appears to be an important and well functioning part of the New Zealand research and development system. As a consequence, the recommendations of this report are to consider the most popular of the minor changes to the Funds operation:

### ***REVIEW THE APPLICATION PROCESS***

While the ISAT programme continues to be heavily subscribed, it is apparent that the effort of application has tempered the enthusiasm of some past applicants. Suggested areas for attention were the level of information required compared with similar purpose and value funds, and to heighten the application's focus on the scientific/technological/social excellence, while de-emphasising its more strategic aspects.

### ***CONSIDER ALLOWING THE AWARD SIZE TO COVER A GREATER PROPORTION OF THE COST OF THE COLLABORATIVE PROJECT***

Investigate the option of boosting awards to cover the real costs of the collaboration, e.g. consumables and/or salary. Without a significant increase in the size of the Fund, this would necessarily impact on the Fund's success rate, and attention would have to be paid to the commensurate increase in time and money that would be spent on unsuccessful proposals.

### ***CONSIDER RESERVING A PORTION OF THE BUDGET FOR OUT OF ROUND APPLICATIONS AND FOR UNEXPECTED COSTS TO BE MET***

Investigate the value in retaining 5–10% of the budget to cover these situations against the projected increase in administration costs. This would require a change from the current competitive application process to a first-past-the-threshold model, at least for the reserve pool, and may prove undesirable.

# APPENDIX - QUESTIONNAIRE

*Page 1 - Introduction*

## **Welcome to the 2005 follow-up survey of past ISAT Linkage Fund recipients**

The survey relates to your ISAT project:  
«**Project\_Title**»

The information gathered will help us gain a better understanding of the outcomes of the ISAT Linkages Fund, its importance to New Zealand's research community, and to determine the ways in which you feel it could be improved.

It is expected that this survey will take less than 20 minutes to fill out, and the Society greatly appreciates your time and effort.

### **Confidentiality**

Please note that your responses will be regarded as confidential and will only be seen by the staff carrying out this survey.

Results of the survey will be published in aggregate form, but in no event will information that would allow you to be personally identified be reported without first obtaining your permission.

### **Survey Instructions**

Please answer as many of the questions you are able and which are applicable.

I would greatly appreciate it if you were able to return your responses by the 14th of March, 2005.

## Personal information

Name: «NZPI\_Name»

Institution: «NZPI\_Institution»

Year in which highest degree was gained:  
*(please exclude DSc)*

ISAT Linkage Fund contract: «Code»

Project title: «Project\_Title»

Overseas Principal Investigator: «Overseas\_PI»

Country involved: «Country»

Contract value: \$«Grant\_Amount»

*Please check and amend where necessary.*

Questions relating to your ISAT contract (I)

**Q1/ Has the exchange funded by this ISAT contract led to any of the following, subsequent to the activity report?**

New material(s)	Y/N	New skills	Y/N
Unique source(s) of information	Y/N	New methods	Y/N
New collaboration(s)	Y/N		
Other <i>Please describe</i>	Y/N		

**Q2/ Has this ISAT grant assisted, or impaired, the career development of those involved in the collaboration?** [Yes/No]

If Yes, please describe their position, e.g. principal investigator, post-doc, etc, and how their career was affected.

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**Q3/ Have any of the following outputs or publicity directly relating to this ISAT contract been generated since the activity report?**

New product(s)	Y/N	Peer-reviewed publication(s)	Y/N
New service(s)	Y/N	Conference presentation(s)	Y/N
Intellectual property	Y/N	Report(s)	Y/N
Other <i>Please describe</i>	Y/N		

**Q4/ Did the exchange lead to a bid, or bids, for new funding from any of the following?**

Marsden Fund	Y/N	
HRC	Y/N	
FRST	Y/N	
NZ Other <i>Please describe</i>	Y/N	
International funding agency <i>Please describe</i>	Y/N	
International other <i>Please describe</i>	Y/N	

**Q5/ Does the linkage that this ISAT grant supported still exist?**

- Yes, currently active
- Yes, dormant
- No

*Please bold, or otherwise indicate, your selection.*

**Q6/ How long (in months) has it been since the last contact was made with the collaborating institution?**

--

**Q7/ Was the level of ISAT funding sufficient for the purposes of the contract?**

- Generous
- Adequate
- Insufficient

*Please bold, or otherwise indicate, your selection.*

Questions relating to your ISAT contract (II)

**Q8/ If you indicated that additional funding was sought as a result of the ISAT-supported collaboration, which, if any, of the applications were successful?**

Marsden Fund	Y/N	
HRC	Y/N	
FRST	Y/N	
NZ Other <i>Please describe</i>	Y/N	
International funding agency <i>Please describe</i>	Y/N	
International other <i>Please describe</i>	Y/N	

**If additional funding was obtained, please indicate the range of support that was gained from;**

NZ sources [up to \$10,000, \$10,001-\$50,000, \$50,001-\$100,000, >\$100,000]  
 International sources [up to \$10,000, \$10,001-\$50,000, \$50,001-\$100,000, >\$100,000]  
*Please bold, or otherwise indicate, your selection.*

**Q9/ If you indicated that the collaboration has ended, why did the collaboration lapse?**

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**Q10/ If you have indicated that the collaboration is currently active, what form does this collaboration currently take?**

Email correspondence	Y/N	Informal agreement(s)	Y/N
Phone correspondence	Y/N	Formal agreement(s)	Y/N
Continued visits	Y/N	Co-publication	Y/N
Personnel exchange	Y/N	Co-funding	Y/N
Other <i>Please describe</i>	Y/N		

**Q11/ In your opinion, would the exchange have occurred without ISAT funding?**

- Yes
- Yes, but in a reduced form
- Possibly
- No

*Please bold, or otherwise indicate, your selection.*

**Q12/ If you described the level of funding as being insufficient, how did this affect the objectives of the application?**

- Goals reduced
- Goals compromised
- Alternative funding sought

*Please bold, or otherwise indicate, your selection.*

**If supplementary funding was obtained, what was its source?**

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## General comments relating to the ISAT Linkages programme

Q13/ Are there ways which you feel the Fund's application process could be improved?

Q14/ Are there ways which you feel the Fund's reporting process could be improved?

Q15/ Do you have any other comments relating to the ISAT Linkages Fund?

**Thank you very much for your input into the evaluation of the ISAT Linkages programme.**