

Promoting Science Awareness in the Pacific: Some challenges in the creation of the Pacific Science Communication Network [f/n1]

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Paper

Introduction

The National Centre for Public Awareness of Science (CPAS) at the Australian National University became a Centre for the Australian National Commission for UNESCO in early 2000. This partnership was inspired particularly by 2 of the overarching principles endorsed by the 1999 World Conference on Science: "science for knowledge – knowledge for progress" and "science for development".

Under the auspices of UNESCO, CPAS, and a contribution from the Committee on Science and Technology in Developing Countries (COSTED), a preliminary Pacific Island science communication project began in early 2001. The aim of this project was and is to promote science awareness, build skill sets, and encourage skills transfer and network building based on effective science communication with general audiences and, ultimately, to establish a Pacific Science Communication Network (PSCN). The initial meetings, described below, were seen as a beginning, a way to try to gain a clearer picture of what would be required of science communicators in the Pacific, and also to assess and hopefully stimulate the level of interest - both emotionally and financially - in Pacific science communication.

Two meetings were directly funded by this project, with some limited further input into an environmental journalism workshop conducted in May 2002. Only the 2 meetings directly funded by the project are discussed in this paper. The first meeting, held at CPAS in February 2001, was a skills building/transfer workshop for journalists enhancing science communication capacity and encouraging the training and mentoring of others in the region. The second, a forum for Pacific scientists (academic and Government) held in Apia, Samoa in August 2001, focussed on establishing common science communication themes and facilitating networking across a number of States. An electronic discussion board is being piloted as a focal point for a fledgling Pacific Science Communication Network (PSCN).

By taking a communication perspective, old issues could be seen from different viewpoints, facilitating exchanges between people who may not otherwise have done so. As a result of the focus on science communication, participants in the 2 meetings – frequently from quite disparate backgrounds – began to recognise that common themes existed in their overtly different areas of journalistic and especially scientific, communication practice.

Many challenges were recognised, by both delegates and presenters, in the process of participating in these meetings. Some challenges were expected, a number, clearly unforeseen. It is these challenges, discussed below, that this paper would like to present as a catalyst for discussion and idea exchange among those with similar experiences. This paper is structured as follows. The meetings and their formats are outlined first. Following this, themes identified common to participants in each of the meetings are described, proceeded by a consideration of the positive outcomes of the meetings. Finally, major challenges facing the PSCN are discussed, with concluding remarks at the end.

The Meetings

The budget for the 2 meetings was in the vicinity of \$AUD60,000 (this amount fluctuated due to the many currencies and exchange rates to which the budget was periodically subject). This was a generous contribution by UNESCO, provided as a way to initially identify science communication needs, interests and possible key players in the Pacific. There have also been

significant 'in-kind' contributions of time, resources and expertise by CPAS, and an input by COSTED to the first meeting.

It was decided the money would be best spent in trying to initiate an awareness and familiarity of fundamental science communication theory, and especially practice, among key journalists and science-involved people from around the Pacific. The alternative was to arbitrarily identify one country and a single science communication project – not the most effective use of the resources at this stage. The hosting of two meetings was seen as an effective use of resources in the preliminary stages of establishing the parameters for the instigation of a self-sustaining Pacific Science Communication Network.

February 2001 – Training Workshop for Science Communication in Small States

The Training Workshop for Science Communication in Small States ('the Workshop'), was hosted by CPAS at the Australian National University in Canberra from February 12 to 15, 2001. It brought together 9 print, radio and television journalists from; Fiji, the Federated States of Micronesia, Papua New Guinea, the Solomon Islands, Tonga, the Cook Islands and Samoa. Delegates to the Workshop were experienced journalists, many of them in senior/managerial positions. Such people were invited as a major aim of the Workshop was to offer delegates ideas not only about how to enhance their own science reporting, but also how they may mentor and facilitate the development of colleagues in the early stages of their careers. A copy of the format and content of the Workshop appears at Appendix A.

Workshop days were broken into classroom, hands-on sessions in the first half of the day, with afternoons devoted to semi-structured visits to the many science-related public venues in and around Canberra. For some evenings there were 'homework' requirements, usually comprising the drafting of interview questions, science-related articles or reflective pieces. The morning sessions featured workshops with some of Australia's leading science communicators/journalists (such as Peter Pockley and Julian Cribb) as well as COSTED representatives from Indian Radio. They were also presented with academic perspectives on science communication from active researchers at CPAS. Delegates were given the opportunity to source and interview scientists from the ANU and the CSIRO during their time in Canberra, and were encouraged to take back relevant and professional reports to their home organisations.

A central goal underlying the entire UNESCO/CPAS partnership (not just this meeting) is to facilitate the creation of a dynamic, self-sustaining Pacific Science Communication Network. It was hoped therefore, that delegates attending this Workshop would be inspired to mentor others in their regions to become involved in the communication of science to the community at large (and perhaps become a science communication 'node' themselves). Suggestions to this end were made throughout the practical sessions, and delegates were encouraged to copy and/or modify the techniques that were being demonstrated by Workshop presenters.

Delegate responses to the Workshop were overwhelmingly positive^[f/n 2]. All participants agreed that they had a better understanding of science communication issues, that the Workshop increased their confidence in communicating science, and that they were more capable of making positive changes to their science communication practice. One participant commented "with the network I have now, I can make a positive change." Another wrote "The workshop has got me to start on a positive note: to bridge the gap between science and the public understanding/awareness of science.". The only source of discord was noted when cultural and religious differences between some of the participants and one of the presenters appeared. This was by no means sufficiently negative to tarnish the achievements of participants or presenters, in fact this alerted the author to the danger of assumption when inadvertently bringing together scientific and religious beliefs. The delegates, CPAS, UNESCO and COSTED all saw this program as a starting point for enhanced science communication in the Pacific region.

August 2001 – The Pacific Regional Science Communication Forum

The Pacific Regional Science Communication Forum ("the Forum") was hosted at the UN conference facility in Apia, Samoa from the 1st to the 3rd of August, 2001. The Forum brought together delegates from a number Pacific States to present a country-specific paper focussed on a local issue that could benefit from the introduction, or enhancement, of science communication initiatives.

The Forum differed significantly from the February Workshop (program appears at Appendix B). The focus was on practical issues and networking, deliberately avoiding the elaborate discussion and/or teaching of matters of abstract communications theory. Representatives of government, university and other scientific agencies as well as public awareness and education campaign bodies were initially considered the best 'targets' for Forum participation.

Delegates were identified by the CPAS UNESCO Project Manager (the author) in April, 2001 in concert with UNESCO, Samoa, the South Pacific Regional Environmental Program (a major environmental scientific program with 20 plus member states and a major headquarters in Samoa) and senior representatives of the Samoan Government, as well as the Vice Chancellors of the University of the South Pacific (Apia Campus) and the National University of Samoa.

Delegates in attendance were Government and academic scientists from the following nations; Samoa, Papua New Guinea, the Solomon Islands, Tonga, the Cook Islands, and Vanuatu. Two delegates were approached from Kiribati, but they were, unfortunately, unable to attend [f/n3].

Delegates were required to provide, and present at the Forum, a paper on a science-related issue of public significance in their region (for a list of country papers are available for perusal on the web at papers, see Appendix C). It was important that the issues addressed were identified by local interests and put forward by local representatives rather than by third party agencies, a practice not-uncommon in the Pacific's past. In the spirit of good science communication practice, our interest was in coming together to discuss matters relevant to all the people in the regions represented, not the promotion of blue-sky or esoteric science research . Again, the underlying major aim was to create and/or enhance science communication networks and assess the needs and interest of stakeholders in facilitating a PSCN.

The Forum, moreso than the Workshop, was focussed on getting delegates together under a communications umbrella rather than a concentrated and intensive delivery of skills. The organising bodies were acutely aware that professionals such as those represented would rarely get the opportunity to speak about generic, science-related issues facing their regions with others in similar positions. More commonly, they were used to coming together at conferences specific to their science.

When focussing on the generic and shared science communication aspects of their specific sciences, participants were provided with a context in which they could begin to discuss the similarities of the overtly different region-specific issues. As the program (Appendix B) outlines, people were encouraged to hear the diverse stories of other delegates, reflect on what these stories were telling them, and then look at ways in which challenges confronting them had shared characteristics when considered from a science communication perspective. In doing this, delegates began to identify new colleagues/allies and ideas from other sciences and different institutions they may otherwise have not considered. So while they were not engaging in an array of science communication techniques, they were benefiting from the unique perspective that a science communication slant can put on issues pertaining to science and the public.

Overall, Forum delegates were very pleased with the experience. There was however, a certain cynicism present, as is most likely present in almost any meeting of scientists anywhere in

the world, when gathering for the purposes of communicating science. This often occurs when scientists (both academic and government) reveal that their hosting institutions are highly unlikely to put additional funds towards science communications activities, activities that are frequently considered to be “luxuries”: an attitude of “we don’t have time to communicate it, we’re too busy doing it”. Across the board however, delegates expressed a pleasant surprise at the similarity of the problems they faced when viewed from a communications perspective. And this whether they were discussing poor water handling practices or hazards associated with the over-exporting of live reef fish.

Common themes

The Workshop

Among the journalists who attended the Workshop in February 2001, a number of common themes arose – particularly related to the professional contexts in which many of them worked. There is for example, a huge disparity in access to information and communication technologies among Pacific States. In some instances, an interesting consequence is cases in which people have state-of-the-art recording and broadcasting equipment, but little journalistic training, or the inverse: excellent journalism skills, but outdated and outmoded equipment with which to exercise those skills [4].

There are also issues of censorship. In some countries, the broadcaster(s) is state owned and managed. Consequently, environmental problems that would embarrass the ‘wrong people’ were unlikely to make it to air/print. In an environment of such regulation, it is challenging to maintain people’s enthusiasm for the practice of effective science communication if the story will never be presented to the public concerned.

Air time and page space is another major restriction to the presentation of relevant and clearly explained science in the popular media. Few if any countries represented had specialist science reporters or communicators, with only a couple having even specific and/or regular science-related features. As with many public media, science stories tend to be shunted out when “more newsworthy” items come along. This effect is magnified in the face of small publications and restricted broadcasting time. Essentially, even if the quality of science journalism is good, this is no guarantee its products will be used.

The Forum

During the August 2001 Forum, and in subsequent related forums and conversations, it became clear that environmental issues are possibly the biggest single category of science-related story considered pertinent in the Pacific (with health-related matters running second). Problems with sea-level rise, scarce/polluted fresh-water, and solid waste management, for example are common to many Pacific nations (see Appendix C). The reasons for these may vary, but the results are very much the same. Delegates to the Forum soon discovered that although they may be from different countries and had different scientific backgrounds, the problems associated with public communication of their areas of concern were similar across the board.

The major common problems raised by delegates in terms of engaging in effective public dialogue, regardless of their scientific roots, their institutional affiliation, or nation of origin were:

- The prevalence of multiple language groups in their regions (for example – Vanuatu). It can be difficult enough trying to render the language of science accessible to speakers of a single language, better yet attempting simultaneous dialogue in many languages and dialects. In such cases, a campaign promoting good environmental practice may only be suitable for a small and specific subset of the nation. This can make the communication of sound environmental or health practices costly and complex.
- Multiple power structures. In Samoa for example, a Western-influenced political system exists simultaneously, and side-by-side with traditional village chief leaders (or ‘Matai’), and highly influential women’s groups. It can be extremely difficult to try and affect behavioural

change (regardless of the quality of the science communication effort) when there are multiple spheres of influence and power. Worse still in situations where there may be conflicting interests.

- Geography dispersion. Many nations in the Pacific are made up of conglomerations of islands and atolls (for example – the Marshall Islands, Vanuatu and Kiribati) which can be geographically quite remote. Also, the distances between different nations can be enormous, at times exacerbated by irregular transport and/or outmoded transportation options. It is therefore not always practical, nor within the limitations of the budgets of many agencies and institutions, to visit all the areas that may benefit from the input of scientific information and advice.

- Access to mass communication. Access to, and knowledge of, mass communications is highly inequitable across the Pacific. Although many associated with universities, government agencies and the like are well supplied with communications technologies, many of those with whom they need to communicate are not. And even when people in more remote areas have access to radio, for example, there is the possibility (as in Vanuatu) where concerned publics may not speak the language of the people broadcasting relevant science-based information.

- Lack of suitable replacement of income based on poor environmental practices. In the Solomons, for example, the exporting of live fish is rendering some lagoons unusable and threatening the survival of certain fish species. The problem is that some islanders can make comparatively substantial amounts of money selling live fish, so when officials ban the practice without a suitable income replacement, livelihoods are threatened. There is, therefore, little interest in the environmental implications and the information provided by government scientists.

- Lack of money. As is the case in so many regions of the world, lack of funds is a fundamental restriction to access of important science-based information.

This list of issues is one that could essentially be repeated in many places around the globe. Ultimately, this is the point. By bringing these delegates to the Forum together, they were encouraged and facilitated to engage with each other with these generic issues as the focal point, rather than exclusively considering their own particular concerns based on their own particular sciences and regions. Although it was clear there were no immediate and quick fixes, ideas addressing some of these concerns were mooted. More importantly in some ways, delegates were being encouraged to think about their problems a little differently and, hopefully, were also inspired to keep discussing solutions from a science communications perspective after the Forum concluded, possibly via a Pacific Science Communication Network.

Science communication in the Pacific – Positive outcomes

The Forum and the Workshop were always intended as preliminary activities, meetings to explore and encourage further action. This is not to say that no solutions to some of the issues discussed were brought forward. In the case of the Workshop, a number of delegates have been and still are in contact with Peter Pockley and Julian Cribb, seeking their advice, discussing ideas and picking up tips. The relationship formed with CPAS led to the inclusion of a science communication component in the recent Pacific Environment Information Network (PEIN) environmental journalism workshop in Samoa this year. According to presenters and participants, this component was the reason this particular workshop was even more productive than those held previously.

For participants in the Forum, there were a few of solutions put forward to some of the common communication issues raised. For some, this was as simple (from a science communication perspective) as being encouraged to think more about their audiences and how they might make the information they wished to communicate more relevant. Another example was the idea of appealing to women's groups to effect positive environmental practice which, while more obvious in Samoa, was not an approach taken in other countries with similar influential groups.

One delegate revealed that they had gotten through language barriers when demonstrating new small-scale production methods by using theatre and dance. This was revelatory to a number of others, whose only use of visual aids in the past had been complex diagrams.

Ultimately, though the Forum highlighted the need for more specific and professional science communication practice in the Pacific. It was agreed that the initiation of an electronic notice board would perhaps be the most effective and cheapest, though by no means perfect, way to offer support to those seeking science communication solutions to their regional concerns.

Challenges for the PSCN

To date, the PSCN still exists only informally. There are instances of collaborations made between delegates of the 2 meetings themselves as well as between CPAS representatives and delegates. There is informal feedback suggesting that a subset of those who participated in both meetings is now more actively engaged in promoting the importance of providing science-based information to general audiences in a relevant and intelligible way. An electronic discussion board pilot project was set-up earlier this year (temporarily hosted by CPAS) with the aim of facilitating exchange and debate for any-and-all Pacific related science and science communication matters, but this has had only minimal uptake. While the meetings themselves were clearly successful, the major challenges to the seeing this project reach a second phase are not inconsiderable. This is the primary motivation for wishing to discuss the whole project in the context of PCST 7: to share experiences and consider more solutions with other science communication academics and professionals.

Not surprisingly, funding appears to be the biggest single barrier to the maintenance and expansion of a thriving, formal PSCN. This is not only funding from the Pacific, but within the hosting institutions. UNESCO's budget in the Pacific is not infinite and has to stretch to many and varied activities across a geographically and culturally disparate population. The other major partner, CPAS, is dependant for its survival upon the Australian National University, its hosting institution. Any formal, sustainable incarnation of the PSCN requires, in the early stages, the ongoing input of CPAS science communication expertise. This however, is becoming more and more difficult given an exceedingly limited budget.

Ultimately, for a PSCN to be successful, it needs to be hosted and maintained by those whom it most directly concerns: the Pacific Island States. In an environment where many science-related officials are regularly invited to attend all manner of conferences and meetings, hosted by innumerable donor countries and other Pacific nations, 2 small meetings concerned with "luxuries" such as science communication can easily get 'drowned-out'. In some instances there is also a culture of dependence on donor agencies to run such initiatives, in others, a resentment that such agencies and nations are being paternalistic. These are real issues that confront active engagement in the PSCN, as well as in many other worthwhile projects in this part of the world.

The hosting of the PSCN electronic discussion board, for example, should ideally move to an interested, motivated and financed party in the Pacific, rather than be managed from an academic's office in Canberra, Australia. The lack of expertise, funds, senior managerial support and/or infrastructure, however, remain barriers to this happening. Similarly, it would be fruitful to host annual forums such as that held in August 2001 in Samoa however, the expense and the complexity of the logistics of moving groups of people from all areas of the Pacific to one central country can be formidable.

Concluding remarks

In sum, the project initiated in early 2001, though not without its challenges, has enjoyed some reasonable success. We have begun to identify and understand the extent of the need to support and enhance science communication in the Pacific, particularly in environmental and health matters. An informal Pacific Science Communication Network exists, comprising academic and government scientists as well as journalists from many Pacific nations. The exercise of seeking input into the establishment of the PSCN electronic discussion board has proven fruitful, in some ways yielding more information and dialogue than the board itself. As a direct result of the journalist workshop, delegates were made aware not only of the techniques used by professional science journalists, they were provided with techniques to mentor and train junior colleagues in effective science journalism practice. And now at the PCST 7 conference, the project will be

presented and discussed in a collegial environment with other science communication professionals. It is the author's hope that the discussion of this project in Cape Town will identify ways in which the Pacific Science Communication Network "phase 2" may progress.

Footnotes: 1 The author would like to gratefully acknowledge the financial (and administrative) support and input of the Apia, Samoa office of UNESCO. In particular he would like to thank Edna Tait, Director UNESCO Pacific and Hans Dencker Thulstrup – UNESCO Pacific Science adviser.

2 Delegate feedback was sought through formal surveys and informal conversations.

3 The deadlines for organising this forum were very tight and organisational details quite complex. By the time we had to finalise participants, no public-awareness professionals were clearly identified.

4 Specific national examples have not been included as they add no significant merit to this discussion, but could very well inadvertently offend certain countries and/or individuals.

Training Workshop on Science Communication for Small States - COSTED & CPAS

Appendix A – Workshop Program for February 2001

	Breakfast	MORNING 1 9:00 – 10:30	TEA 10:30 11:00	MORNING 2 11:00 – 1:00	LUNCH 1:00 2:00	AFTERNOON 1 2:00 – 3:30	TEA 3:30 3:50	AFTERNOON 2 3:50 – 5:30	EVENING Times TBA
Sun Day 0		ARRIVALS	<i>TBA</i>	ARRIVALS	<i>TBA</i>	ARRIVALS	<i>TBA</i>	ARRIVALS	Welcome Dinner - Science Show (Prof. Gore)
Mon Day 1	At delegate accommodation	Register 8:30 – 9:00. Introduction to writing for the Public (Prof. Bryant)	@ venue	Introduction to writing for the Public – continued	@ ANU	Communicating botany – A study visit to the Australian National Botanic Gardens	@ BGs	Delegate private writing time	Informal Dinner
Tue Day2	At delegate Accommodation	Writing for radio (Dr Phondke)	@ venue	Writing for radio continued	@ ANU	Presenting common science concepts : Science Outreach at Questacon - the national Science and Technology Centre	@ Q	Questacon visit continued	Private writing time & free time for delegates
Wed day 3	At delegate Accommodation	Presenting on radio (Dr Pockley with additional comments by Dr Phondke)	@ venue	Presenting on radio – continued	@ ANU	The cutting edge of space exploration – A study visit to the Tidbinbilla Deep Space Tracking Station	@ Tid	The Tidbinbilla Nature Reserve – science and tourism	BBQ Picnic at The Cotter Delegate private writing time
Thu Day 4	At delegate Accommodation	Writing for newspapers and magazines (Cribb)	@ venue	Writing for print media continued <i>WRAP-UP</i>	@ ANU	Science research in the public eye A study visit to the CSIRO “Discovery Centre”	@ DC	Discovery Centre visit continued	Closing Ceremony
Fri Day	At delegate accommod	DEPART		DEPART		DEPART		DEPART	

Appendix B – Forum Program for August, 2001

**Pacific Regional Science Communication Forum
FAO Conference Facility, UN Compound Apia,
Samoa August 1 – 3, 2001**

Forum Program

Day 1	
9:00 - 9:30	Official Opening (Ms Edna Tait – UNESCO Apia, Mr ? Fiame - Ed minister & UNESCO dude, Reverend Uele)
9:30 – 10:00	CPAS – setting the scene
	COUNTRY PAPERS
10:00 – 10:30	Raj – “ <i>Water resource issues in Fiji</i> ”
10:30 – 11:00	MORNING TEA
11:00 – 11:30	Vakasiuola – “ <i>Tongan Water Board project implemented on the Island of Lifuka and its impact on the Public and the residents of Lifuka.</i> ”
11:30 – 12:00	Sammy – “ <i>Vanuatu Country paper - discussion based mainly on the department of Geology, Mines and Water Resources</i> ”
12:00 – 12:30	Makikiriti – “ <i>Changes in Lagoon Tenure and Management with the Development of Pearl Culture in Manihiki, Cook Islands</i> ”
12:30 – 1:30	LUNCH
1:30 – 2:00	Bennett – “ <i>Managing the Live reef Food fish trade in Solomon Islands</i> ”
2:00 – 2:30	Pepena – “ <i>Some challenges from the department of mining aspect in terms of “environmental” impacts using ok tedi, small scale mining, marine scientific research and the draft mine closure policy as case studies</i> ”
3:30 – 3:00	AFTERNOON TEA
3:00 – 4:30	Reflection
Day 2	
9:00 - 9:30	Chan Mow – “ <i>The sas link: a case study in bridging the communications divide</i> ”
9:30 – 10:00	Fuatai’I – “ <i>Science communication in education – the case of Samoa</i> ”
10:00 – 10:30	Brief wrap-up of country papers, general comments – include observers in this.

10:30 – 11:00	MORNING TEA
	<u>Observers leave</u>
11:00 – 12:00	Discuss small group workshops, divide groups. Clarify small group objectives
12:00 – 1:00	LUNCH
1:00 – 2:30	Small group work
2:30 – 3:00	AFTERNOON TEA
3:00 – 4:30	Small group work
7:00pm	FORUM DINNER

Day 3

9:00 - 10:30	Small group work continued
10:30 – 11:00	MORNING TEA
11:00 – 12:30	Groups prepare their presentations and conclusions from their small group work
12:30 – 1:30	LUNCH
	<u>Observers Return</u>
1:30 – 3:00	Small group presentations, comments, feedback, open discussion
3:00 – 3:30	AFTERNOON TEA
3:30 – 4:30	Wrap – up, closing ceremony, workshop feedback, delegate “presentations”

Appendix C – Country-specific papers from participants in the Forum

WATER RESOURCE ISSUES IN FIJI

RISHI RAJ

*Ministry of Infrastructure and Public Utilities,
Public Works Department, Fiji*

THE TONGAN WATER BOARD PROJECT IMPLEMENTED ON THE ISLAND OF LIFUKA -Its impact on the public and the residents.

MALAKAI VAKASIUOLA

*Chief Engineer, Tongan Water Board
(paper presented by Vahaakolo Palelei)*

ISSUES OF WATER SUPPLY IN VANUATU

ERICKSON SAMMY

Hydrologist, Department of Geology, Mines & Water Resources

CHANGES IN LAGOON TENURE AND MANAGEMENT WITH THE DEVELOPMENT OF PEARL CULTURE IN MANIHIKI, COOK ISLANDS

NGATAMAROA MAKIKIRITI

Senior Research Officer, Ministry of Marine Resources, Policy & Resource Management Division.

MANAGING THE LIVE REEF FOOD FISH TRADE IN SOLOMON ISLANDS

GREGORY BENNET

*Project Leader, SIG/ACIAR Live Reef Fish Trade Project - Research & Resource Management,
Ministry of Fisheries and Marine Resources.*

SOME CHALLENGES FROM THE DEPARTMENT OF MINING - Aspects of 'environmental' impacts using Ok Tedi, small scale mining, marine scientific research and the draft mine closure policy as case studies

PATRICIA PEPENA

*Senior Resource Scientist, Mineral Project Assessment Branch,
Department of Mining - Mining Division, PNG.*

THE SAS LINK: A CASE STUDY IN BRIDGING THE COMMUNICATIONS DIVIDE

IOANA CHAN MOW

Head, Computing Department, National University of Samoa

SCIENCE COMMUNICATION IN EDUCATION – THE CASE OF SAMOA

KAROLINE AFAMASAGA-FUATA'I

Senior Lecturer in Mathematics, and Dean of Science, National University of Samoa