



ARC Research Network  
**SISS**  
SPATIALLY INTEGRATED SOCIAL SCIENCE

**ARCRNSISS**

**ARC RESEARCH NETWORK IN  
SPATIALLY INTEGRATED SOCIAL  
SCIENCE**

**STRATEGIC PLAN**

(Revised February, 2007)

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**The Australian Research Council  
Research Network  
in  
Spatially Integrated Social Science**

Space, time-space and place are increasingly important considerations in understanding the human behaviour and the complex changes occurring in contemporary society. These changes impact unevenly on both people and places.

The ARC Research Network in Spatially Integrated Social Science (ARCRNSISS) builds Australians' capacity and capability for innovative, collaborative, cross-disciplinary effort to investigate the impacts of change on the behaviour and well-being of people and the fortunes of places.

The Network brings together more 280 researchers and research higher degree students from across 18 universities and the Australian Bureau of Statistics.

Spatially Integrated Social Science (SISS) theories, methods and tools permit the integration of diverse and complex information, the generation of new synthetic data sets, the incorporation of spatial concepts into statistical analysis and modelling, the visualisation of information, and the building of Spatial Decision Support Systems (SDSS).

SISS approaches to the investigation of socio-economic and behavioural phenomenon can generate an improved evidence base for better informed decision-making in addressing the significant challenges facing Australia's people and its places.

SISS research tools can help governments and business to develop more appropriate strategies to better address the needs of people and places in Australia and elsewhere in achieving a sustainable, prosperous and just society with an improved quality of life for people.

The ARCRNSISS enhances Australia's research capacity and capability to develop and conduct research to address these issues.

The ARCRNSISS collaborates with similar organisations internationally to advance understanding and use of SISS approaches.

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## SECTION 1:

### THE FORMATION AND FUNCTIONS OF ARCRNSISS

The Australian Research Council Research Network in Spatially Integrated Social Science (ARCRNSISS) was established in October 2004. That followed an announcement in late August 2004 by the Australian Research Council (ARC) in late August of that year to provide funding over a period of five-years to establish 24 Research Networks selected through a competitive process.

#### 1.1 Spatially Integrated Social Science

There is increasing recognition the profound impact of *space*, *time-space* and *place* upon the well-being and opportunities available to Australians. Differentiation in fundamentally crucial issues – ranging from industry productivity and regional performance, to employment and income support, to education and health – is evident across *space*, in *time-space*, and for *places* and at all levels of spatial scale, from the nation, to regions, to local communities.

Profound advances in technologies now permit innovative applications of spatial perspectives to achieve a more integrated approach across the social sciences to conceptualise and analyse socio-economic and behavioural issues in addressing the challenges of coping with change which face people and places across Australia. Sharp increases in data availability, and quantum improvements in computing capabilities, are allowing rapid advances in *Geographic Information Science* (GISc) to integrate, model, simulate and visualise new information about our society – about the places where people live, work and recreate, and where investment in economic activity occurs.

A **Spatially Integrated Social Science (SISS)** recognises the key role that spatial concepts - such as distance, distribution, location, proximity, connectivity, place, neighbourhood and region - play in human society. It promotes research that advances the understanding of spatial patterns and processes; and it invokes powerful principles of spatial thinking.

People's lives are connected with others, they live in a space and place context that may change over time. People occupy a range of social settings, which may be conceptualised as generalised network structures embedded within social space, where proximity within that space may be geographical, relational or place specific.

SISS represents both a set of theoretical and philosophical paradigms and a 'kit-bag' of *tools and techniques* that:

- provide new perspectives and vehicles for innovation, synthesis and integration across the social and behavioural sciences
- facilitate cross- and inter-disciplinary team research
- enhance the evidence base used to inform policy formulation, program implementation, and business decisions.

Spatial analysis is a growing proportion of the total scientific activity in the social sciences, its share of research articles in key journals having increased from roughly 1.3 per cent in 1990 to 3.7 per cent in 2001, representing nearly 8,900 articles indexed

in six on-line citation services. A search of the Australian literature for the ARCNSISS website ([www.siss.edu.au](http://www.siss.edu.au)) identifies about 1,100 publications. It includes many contributions our Network members have made to that literature.

## **1.2 Background to the Establishment of ARCRNSISS**

The interest by researchers in Australia to establish a Research Network in SISS was foreshadowed in 2003. An application to the ARC by 30 researchers, submitted through the University of Queensland, was successful in obtaining 'seed funding' of \$30,000 through the ARC Research Initiatives Program. The University of Queensland contributed a further \$10,000.

Subsequent discussions held with researchers associated with three other proposals to establish Research Networks which had received a lesser level of 'seed funding' support. A decision was made by some of those researchers to join with the group of researchers associated with the SISS Research Network proposal.

Following a highly successful 'planning workshop' attended by social and behavioural science researchers from across Australia held in Brisbane in February 2004, a group of 86 researchers from across 19 universities, led by the University of Queensland, plus the Australian Bureau of Statistics, prepared and submitted a formal application to the ARC in March 2004 to seek funding to establish a Research Network in Spatially Integrated Social Science.

In preparing that application, there was close collaboration with the Centre for Spatially Integrated Social Science (CSISS) headquartered at the University of California, Santa Barbara, which had been operating for about six years under funding from the US National Science Foundation (NSF). The ARCRNSISS bid drew on the experience of CSISS, and it incorporated an explicit proposal for a collaborative partnership between CSISS and ARCRNSISS if the latter was selected for funding by the ARC under its Research Networks initiative.

## **1.3 Funding**

ARCRNSISS has been established through funding from the ARC which amounts to \$1.5 million over a period of five years, from late 2004 to mid 2009. . In 2006 three of the institutional members upgraded the level of membership and one institution withdrew its membership of the Network. In 2006, the Contributing Institutions in the Network are providing cash contributions of \$171,000.00 p.a. In addition, the in-kind contribution by the Network's Participants is valued at about \$305,000 p.a.

## **1.4 Host Institution**

The Host Institution for ARCRNSISS is the University of Queensland. A Network Management Office was established at UQ, initially located within the Centre for Research into Sustainable Urban and Regional Futures (CR-SURF) in the School of Geography, Planning and Architecture. In mid-2006, the Network was relocated to operate as a separate cost centre within the University of Queensland Social Research Centre (UQSRC).

## **1.5 Contributing Institutions and Network Participants**

In 2004/05, initially 86 individuals were registered as formal Network Participants, drawn from the then 19 universities that were the Contributing Institutions, plus the Australian Bureau of Statistics. By early 2006, there were over 200 individual researchers registered as members of the Network from the 18 contributing university institutions and the Australian Bureau of Statistics, and during 2006 discussions have been initiated with other public agencies to become contributing Institutions in the Network.

## **1.6 Network Convenor**

The Network Convenor is Professor Robert J. Stimson, who holds a Chair in Geographical Science and Planning, and is a Program Director in the UQSRC at the University of Queensland.

## **1.7 The ARCRNSISS Vision**

*The vision for the ARC Research Network is for Australia to be recognised for its outstanding research in Spatially Integrated Social Science underpinned by its cross-disciplinary, collaborative partnerships, innovation and leadership.*

## **1.8 The ARCRNSISS Mission**

*The mission of the ARC Research Network is to enhance Australia's capacity and capability to conduct innovative, cross-disciplinary and policy-relevant research in Spatially Integrated Social Science and to provide the evidence base to enhance knowledge and understanding of the issues and challenges facing people and places in coping with changes in contemporary society.*

## **1.9 The Objectives Guiding ARCRNSISS Activities**

The ARC Research Network in Spatially Integrated Social Sciences has the *overall objective* of building Australia's research capacity and capability to develop and apply spatially integrated research paradigms and approaches in social and behavioural research through collaborations using new concepts, methods and tools, and through applications that lead to an improved understanding of demographic, socio-economic and behavioural phenomena and trends in contemporary society as they impact both people and places.

ARCRNSISS facilitates social and behavioural scientists to develop and apply spatially integrating research paradigms and approaches in pursuing the following ten objectives:

1. Enhance existing, and encourage and facilitate the emergence of new capacity and capability among social and behavioural science researchers to undertake world-class research and development in SISS, particularly through cross-disciplinary and inter-institutional collaboration.

2. Promote and facilitate increased and more effective cross-disciplinary collaboration between researchers in Australia and internationally pursuing a SISS approach to research.
3. Engage and nurture Early Career Researchers (ECRs) and Research Higher Degree Students (RHDS) to build research capacity and capability to ensure future research leadership in SISS.
4. Refine existing, and generate innovative new theoretical and methodological paradigms and approaches for a spatially integrated approach to analysis in the social and behavioural sciences.
5. Improve the technical skills of researchers in the social and behavioural sciences in the use of tools and technologies for spatially integrated analysis through Network activities, such as Specialist Workshops, and facilitate the access of researchers to new tools, technologies and expert systems.
6. Encourage and facilitate the open exchange of information and the development and provision of Shared Research Resources through on-line access to integrated data, software, analytic tools, GIS-enabled visualisation, and SDSS, and technical assistance to enhance SISS research, including the provision of the capability to conduct research on-line.
7. Engage external agencies supplying information and data to enhance SISS research activities, and engage end-users of SISS research in collaborative activity for the application of SISS approaches.
8. Apply SISS paradigms and approaches to expand and improve the ‘evidence base’ to better inform policies, program implementation, and business operations in pursuing an Australian society that is productive and competitive, equitable, just and sustainable, and which enhances the well-being of the nation’s people and the performance of its places.
9. Facilitate collaboration between researchers and the public sector and business to demonstrate the benefits of SISS approaches and findings, and in particular to address issues of national significance.
10. Develop and implement a formal memoranda of understanding for collaboration between ARCRNSISS and relevant organisations overseas involved in promoting SISS research, and in particular with the Centre for Spatially Integrated Social Science (CSISS) at the University of California, Santa Barbara, in the US, and Building Research Capability in the Social Sciences (BRCSS) in New Zealand.
11. Develop strategies to ensure the long-term sustainability of the Network.

### **1.10 The Disciplines Involved**

Reflecting the diverse set of disciplines in the social and behavioural sciences in which aspects of the research focus in particular disciplines may reflect a ‘spatial’ concern, the Participants in ARCRNSISS are drawn from the following disciplines:

- Anthropology
- Economics
- Public and Population Health
- Public Policy

- Computer science
- Demography
- Geography
- Geomatics
- Political Science
- Criminology
- Environmental Sciences
- Psychology
- Sociology
- Regional Science
- Statistics
- Urban and Regional Planning
- Journalism
- 

### 1.11 The Focus

The activities of ARCRNSISS focus on:

- *Bringing people together* to collaborate and assist them to develop, conduct and disseminate SISS research.
- *Enhancing the development* of SISS knowledge and research skills among *Research Higher Degree Students and Early Career Researchers*.
- *Enhancing Australia's capacity and capability* to undertake SISS research.
- Providing on-line access to *Shared Research Resources* and the development of an *e-Research Facility in Socio-Spatial Science*.
- Facilitating *international collaboration* in SISS research.
- Encouraging and facilitating *public policy and business applications* of SISS Research.

### 1.12 Network Activities

To enable ARCRNSISS to meet its *Vision*, pursue its *Mission*, and deliver with respect to its *Objectives*, the Network mobilises and directs its cash and in-kind resources to a range of **Key Activity Areas** organised by the Network. Those are:

- *A National Conference in Spatially Integrated Social Sciences Approaches and Applications*, which will be held every 18 to 24 months.
- *Specialist Workshops in SISS Theory, Methods and Applications* to enhance innovation and build capacity and capability in SISS research in Australia.
- Develop and provide web-based *Shared Research Resources*, including information and databases, GIS-enabled information integration and visualisation, SDSS, and papers and information on research outcomes, and build an *e-Research Facility in Socio-Spatial Science*.
- *A Summer School for Research Higher Degree Students in Theory and Methods in Spatially Integrated Social Science* to help build future research capacity and capability.
- *Seed funding support for cross-disciplinary and/or inter-institutional research teams of network members to develop and submit bids for competitive and other funding* support for innovative and larger scale research projects incorporating SISS approaches, and in particular to address issues of national significance.
- *Funding support for research groups* formed by Network members that have been successful in *leveraging competitive funding* for research projects in SISS to *meet and hold workshops*.

- Convening *Task Forces* to address issues of *national significance* that may be addressed through SISS approaches, *propose research agendas*, and encourage community *debate on issues of public policy* that may be enhanced through a SISS ‘evidence base.’
- *Collaboration with academic and professional associations* to promote interest in, and hold workshops and forums in SISS Theory, Methods and Applications through workshops and special sessions in conferences.
- *Collaboration with information and data supply agencies* in both the public sector and the business sector, and with *end-users of SISS research* to promote interaction and collaboration in the conduct and use of SISS research.
- *International collaboration* with researchers in SISS, including a formal agreement for collaboration with the CSISS in the US and BRCSS in New Zealand.
- Develop strategies to ensure the sustainability of the Network.

### **1.13 Intellectual Drivers for Network Development and Activities**

The intellectual drivers to develop innovation in SISS approaches and SISS research in Australia to guide the development of Network Activities are three ***Paradigm Forums*** and four ***Application Areas*** which relate to areas of applied research of Network members.

The ***Paradigm Forums*** are:

- *Socio-Spatial Theory.*
- *Methodologies, Tools and Techniques in SISS Research.*
- *Data Sources, Data Quality, and Data Integration in SISS Research.*

The ***Application Areas*** are:

- *Spatial Dimensions of Demographic, Social and Economic Change in Australia.*
- *Social and Economic Networks.*
- *Regional Development and Community Capacity Building.*
- *Health, Well-Being and Collective Efficacy in Socio-Spatial Settings.*

### **1.14 Strategic Focus and Key outcomes for ARCRNSISS Activities**

In addressing the objectives of the network in undertaking Network Activities it is evident that ARCRNSISS needs to function so that the ***Strategic Focus*** is on:

- Facilitating researchers to form and work together in cross-disciplinary and/or inter-institutional teams to initiate, leverage funding support, and produce innovative research in SISS theory, methodology and applications.
- Enhancing the development of Australia’s current and future capacity and capability in SISS research.
- Facilitating access to *Shared Research Resources* and building an *e-Research Facility in Socio-Spatial Science* to enhance effort in SISS research.

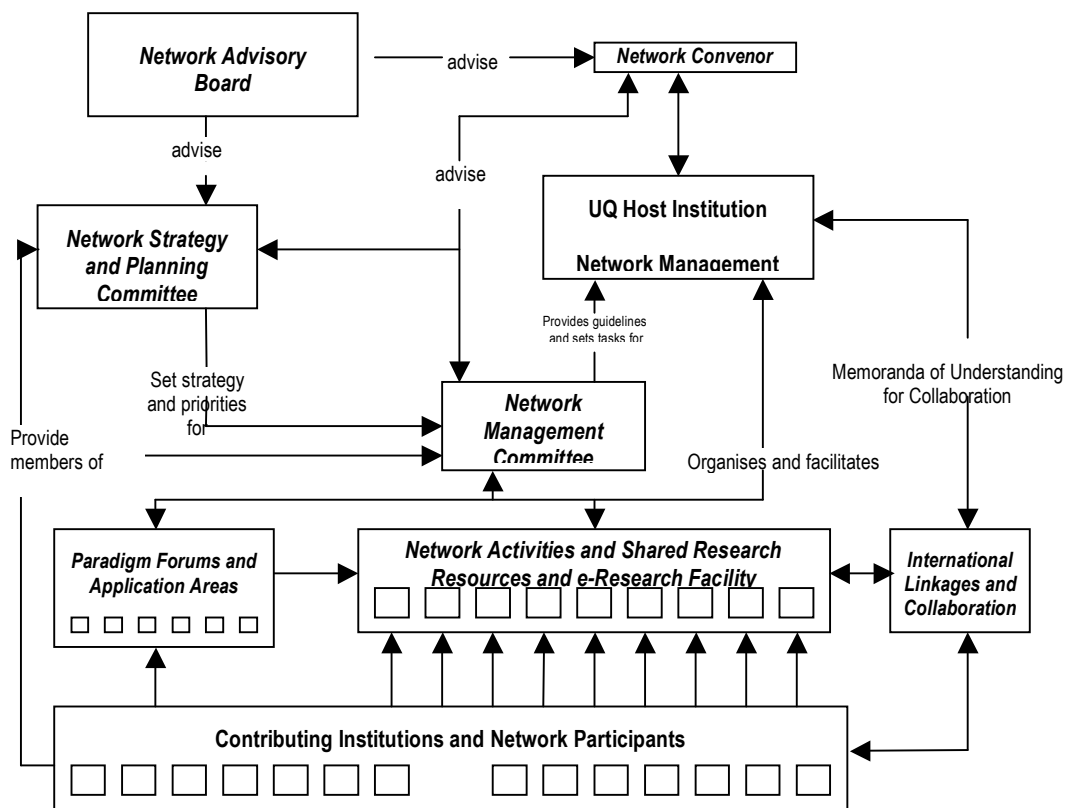
- Collaborating with other academic and professional organisations to promote SISS research.
- Developing collaborations with information and data providers and end-users of SISS research.
- Encouraging international collaboration among researchers using SISS approaches.
- Enhancing the dissemination of outcomes of research using SISS approaches.
- Facilitating researchers to address the ARC's National Research Priorities and other issues of national significance through teamwork effort in conducting SISS research.
- Influencing research agendas and public policy considerations in matters of national significance, demonstrating the relevance and application of SISS approaches.
- Achieve the sustainable development of the Network.

***Outcome expectations*** for the Network and ***Key Performance Indicators*** to measure and evaluate the impact of the Network's activities relate to the following:

- The degree of involvement of Network Participants in Network activities and the growth of the Network.
- Participation in the Network's *National Conference, Specialist Workshops, and Summer School for Research Higher Degree Students.*
- Cross-disciplinary and/or inter-institutional research team formation to formulate innovative projects to bid for and secure research project funding.
- The engagement of Research Higher Degree Students and Early Career Researchers in Network activities and projects initiated and facilitated through the Network.
- The provision socio-spatial data bases and use made of them through the Network's *Shared Research Resources* and the *e-Research Facility in Socio-Spatial Science.*
- International linkages and collaborative activity.
- External input by information and data providers and partnerships to conduct SISS research.
- The 'leverage factor' for new funding of SISS research facilitated through Network activities.
- Research output and publications in SISS, by Network Participants and their RHDS.
- End-user adoption/use of SISS research outcomes.
- Communicating Network activities and achievements.
- The effective and efficient use of Network resources.
- Network Participants' satisfaction with/perception of benefits derived from participators in the Network.

## 1.15 Network Governance and Management Structure

The governance arrangements and management structure for ARCRNSISS are set out in the figure below. It shows the relationships between the Network's key committees and the Network's host institution office. The management structure and operational procedures operation ensure wide participation from across the Network, and ensure that Network Activities are generated both 'bottom-up' and 'top-down' in accordance with the objectives and priorities set out in this *Strategic Plan*. Accountability procedures are incorporated to make transparent the decision-making process for the commitment of the Network's funds and in-kind resources. Importantly, an external Advisory Board provides advice to the Network convenor and through that office to the Committees of the Network.



## 1.16 ARCRNSISS Web-Site

The Network's web-site is: [www.siss.edu.au](http://www.siss.edu.au)

The web-site is the Networks' main 'public interface' and the on-line mechanism to enhance the effective Operation of the Network, the involvement of Network Participants in Network Activities, the provision of access by researchers to the Shared Research Resources, and the dissemination of outcomes of research activity in SISS.

The ARCRNSISS web-site provides a link with the CSISS web-site in the US, and as well links to other Australian and international organisations involved in SISS activity.

The newly designed ARCRNSISS web-site has been fully operational since mid-2005, and since that time up to the end of October, 2006, it has had 197,604 'hits.'

The web-site undergoes continuous improvement with new and/or improved features, functions and links being added.

## **SECTION 2:**

# **THE ARCRNSISS APPROACH TO DEVELOPING AN AGENDA FOR RESEARCH AND ACTIVITIES IN SPATIALLY INTEGRATED SOCIAL SCIENCE**

## **2.1 The Paradigm Forums, Application Areas and Task Forces**

ARCRNSISS has established three **Paradigm Forums** and four **Application Areas**, all with co-leaders, for the purpose of developing innovation in SISS theory and methodology and in the application of SISS approaches. These Paradigm Forums and Application Areas provide the ‘intellectual drivers’ for developing, implementing and promoting SISS approaches to social and behavioural research to underpin the activities of the Network.

Network Participants are encouraged to be involved in one or more of the Paradigm Forums and Application Areas.

### **The Paradigm Forums**

- ***Socio-Spatial Theory***  
Leaders: Professor Phil O’Neill (University of Western Sydney),  
Associate Professor Pauline McGuirk (University of Newcastle)
- ***Methodologies, Tools and Techniques in SISS Research***  
Leaders: Professor Bill Mitchell (University of Newcastle)  
Associate Professor Scott Baum (Griffith Queensland)  
Associate Professor Tony Sorenson (University of New England)
- ***Data Sources, Data Quality and Data Integration in SISS Research***  
Leaders: Associate Professor Mark Western (University of Queensland)  
Professor Graeme Hugo (University of Adelaide)

### **The Application Areas**

- ***Spatial Dimensions of Demographic, Social and Economic Change in Australia***  
Leaders: Professor Ann Harding (NATSEM, University of Canberra)  
Associate Professor Kevin O’Connor (University of Melbourne)
- ***Social and Economic Networks***  
Leaders: Professor Pip Pattison (University of Melbourne)  
Dr Garry Robins (University of Melbourne)
- ***Regional Development and Community Capacity Building***  
Leaders: Professor Andrew Beer (Flinders University)  
Professor John Martin (LaTrobe University - Bendigo)
- ***Health, Well-Being and Collective Efficacy in Socio-Spatial Settings***  
Leaders: Professor Neville Owen (University of Queensland)  
Professor Lorraine Mazerolle (Griffith University)  
Professor John Beard, Southern Cross University

Over time the focus of activity for the Paradigm Forums and for the Application Areas of SISS approaches may change in response to the emergence of new challenges for the application of SISS approaches and in response to national priorities for research effort. This has occurred in 2006 with one of the four original Paradigm Forums in *Scenarios and Forecasting* being absorbed within the *Methodologies, Tools and Techniques in SISS Research* Paradigm Forum and the *Spatial Dimensions of Demographic, Social and Economic Change in Australia* Application Area, and the original Application Areas in *Health and Well-Being in Socio-Spatial Settings* had a name change to *Health, Well-Being and Collective Efficacy in Socio-Spatial Settings* to more accurately reflect the current research activities of Network members involved.

Additional Application Areas might be identified and the existing Application Areas might be re-focused or abandoned in response to changing priorities and the actual operational research activities that groups of network members are undertaking and for which the Network has been successful in assisting research groups to leverage substantial competitive research funding.

## **Functions**

As the ‘intellectual drivers’ of the Network, the role of the three Paradigm Forums is to encourage and facilitate innovation in SISS theory, methods and applications. The Network’s activities are largely generated through the deliberations of those Forums and Areas.

The Paradigm Forums and Application Areas enhance the operation of the Network by sponsoring ‘chat rooms’, holding teleconferences, holding face-to-face meetings, and conducting a range of Network Activities. That is achieved by the Paradigm Forums and the Application Areas undertaking the following activities:

- Form cross-disciplinary and/or inter-institutional research teams to develop innovative research projects and to bid for funding support, and facilitating those teams successful in leveraging competitive funding to meet and hold workshops to enhance the conduct of research in those funded projects.
- Form *Task Forces* to address issues of national priority, develop and propose research agendas, and inform community debate on public policy issues that may be enhanced through SISS approaches.
- Contribute to the program of the Network’s *National Conference in SISS Theory, Method and Applications*.
- Identify the need for, and assist with the delivery of, *Specialist Workshops in SISS Theory, Methods and Applications*.
- Contribute to the Network’s *Summer School for Research Higher Degree Students in SISS Theory and Methods*.
- Identify the need for, and contribute to the development and provision of, the Network’s *Shared Research Resources*, and the building of the *e-Research Facility in Socio-Spatial Science*.
- Identify opportunities for international linkages, and develop international collaborations.

- Foster collaboration between Established Senior Researchers, Early Career Researchers, and Research Higher Degree Students, including organising mentoring by Established Senior Researchers.
- Identify opportunities for collaboration with information and data suppliers and with end-users of SISS research, and form collaborative research partnerships.
- Identify SISS applications to address key areas of national significance, and formulate projects and seek funding to pursue those matters.

An important function of the Paradigm Forms and Application Areas is to form cross-disciplinary teams to develop project proposals and funding bids for research teams to undertake innovative research using SISS approaches. When project funding is won, the actual funds will go to the Institution of the lead CI, and the research will be undertaken in the institutions in which the research team CIs are employed. ARCRNSISS may enhance the conduct of that ensuing research effort by facilitating research teams to meet and by facilitating the dissemination of research outcomes via Network activities and the ARCRNSISS web-site. As well, the Network may provide wider access to data bases generated by those projects through the Network's *Shared Research Resources* and *e-Research Facility in Socio-Spatial Science*.

## **Task Forces**

The network establishes from time-to-time task forces to address issues of national significance and publishes reports in order to stimulate and inform public debate and identify priorities for research.

In late 2006 the first task force was established to address issues to do with *Australia's Urban and regional Futures*.

## **2.2 The Network's Paradigm Forums**

The Network's three Paradigm Forums have been formed to facilitate innovation in theory, methods and tools, in SISS research in Australia.

### **2.2.1 *The Socio-Spatial Theory Paradigm Forum***

#### **Context**

Space, space-time and place provide a framework for societal organisation and operation and the situational context for human behaviour and decision-making. Thus, 'space' is a *social and behavioural construct*. Recent thinking is reconceptualising spatial scales, building broader understanding of their construction as outcomes of political and social processes and not just as geometric givens which had been the more traditional focus in spatial theory.

The rethinking of existing disciplinarily-based paradigms in a 'meta-paradigm' context presents challenges for the formulation of new innovative theoretical constructs and conceptualisation of SISS approaches that incorporates *explicitly spatial* concepts in the study of social, economic and behavioural phenomena. That includes:

- concepts such as: spatial scale, shape, surface, diversity, location, proximity, and connectedness
- the measurement of space
- the meaning of place
- behaviour(s) in space, space-time and place(s)
- spatial cognition and perception
- the constraints of social space.

Across the disciplines represented in ARCRNSISS, there is not a commonality of understanding and interpretation of ‘spatial’ phenomena and issues. A challenge for the Network is to foster new paradigms for analysing and explaining social, economic and behavioural phenomena that explicitly incorporate space, space-time and place dimensions integrating quantitative and qualitative approaches to investigation.

### **Key issues for a research agenda**

Some key issues to address include the following:

- (a) Ways to relate understandings of spatial scale and relationship in a space-time context as a social-spatial constant to conventionally sealed data maps and frames of analysis.
- (b) The role of space and place in underpinning societal organisations, as in constructing capital, community and household relations, and human-environment interactions.
- (c) How processes of governance and regulation produce and steer socio-economic and behavioural processes, and the consequent efficiencies, contests and tensions in outcomes.
- (d) How network connections and interactional flows, and the generation of corresponding concepts and metaphors, have implications for data configuration needs and for identifying appropriate scales for data gathering and analysis.
- (e) The applications of SISS initiatives to inform spatially-defined public policy initiatives and address the behavioural impacts of changing perceptions of spatiality.

### **Activities and outcomes**

The *Socio-Spatial Theory Paradigm Forum* is focussing its activities on developing frameworks to explicitly enunciate an Australian perspective on SISS, collaborating closely with the *Methodologies, Tools and Techniques in SISS Research Paradigm Forum*.

Activities include:

- An Annual Workshop of Established Senior Researchers, Early Career Researchers and Research Higher Degree students held in June each year.
- Formation of cross-disciplinary teams to develop ARC Discovery project bids on theory-building in SISS.
- Organising sessions on SISS theory within the conferences of academic associations, such as the Institute of Australian Geographers and the International Geographical Union.

- Contributing to the ARCRNSISS *Summer School for Research Higher Degree Students in SISS Theory and Methods*.

Outcomes may include:

- publication of volumes on *Australian Perspectives on Spatially Integrated Social Science Approaches*
- a web site chat room
- annotated bibliographies on SISS
- contributing papers to the ARCRNSISS Shared Research Resources web-site
- an enhanced profile of Australian researchers in SISS theory.

### **2.2.2 The Methodologies, Tools and Techniques in SISS Research Paradigm Forum**

#### **Context**

Explicitly spatial methodologies, tools and techniques tend to be derived largely from Geography and Regional Science. But all social science disciplines generate methodologies, tools and techniques that may be applied in the context of space, space-time, and place analyses. They include methods, tools and techniques in:

- spatial econometrics
- statistical and spatial analysis and modelling
- GIS-enabled analysis, modelling and visualization and the development of Spatial Decision Support Systems (SDSS)
- simulation and micro-simulation
- matrix analysis
- network analysis
- multi-criteria evaluation
- evaluation methods
- forecasting
- scenario development and testing.

#### **Key issues for a research agenda**

Some key issues to address include the following:

- (a) The modifiable areal unit problem.
- (b) The spatial aggregation/disaggregation problem.
- (c) The ecological fallacy.
- (d) Population sampling and quasi-experimental designs for collecting data in spatial settings.
- (e) Using path analytic tools to model intervening/ameliorating effects between overt behavioural outcomes and measures of attitude and participation as dependent variables and socio-spatial objective phenomena as independent variables.
- (f) Integrating spatial dependencies into econometric models, and exploring a range of distance matrices which may explain those inter-dependencies.

- (g) Extracting from micro-survey data dimensions to match with local area aggregate data to develop synthetic socio-spatial measures using micro-simulation techniques.
- (h) Measuring spill-over effects in spatial contexts using techniques common in time series econometrics to explore clustering inter-relationships between regions over time and across space.
- (i) Measuring the regional/local effects of periodicities in national cyclical phenomena and separating exogenous from endogenous effects.
- (j) Specialised statistical measures for data reduction in large complex spatial and relational interaction matrices to deal with missing data, sparseness and compressed cells.
- (k) Dynamic, multi-level analytic tools for the analysis of relational network structures.
- (l) Applying Bayesian smoothing techniques to represent a surface and derive point/area estimates from generalised statistical data.
- (m) Developing and using computational process models of social and cognitive concepts of space and place.
- (n) New tools for matrix analysis and modelling of spatial interaction data in a dynamic space-time context with visualisation across different levels of scale.
- (o) Using Geographic Information Science (GISc) concepts and GIS-enabled tools for data integration and the visualisation of spatially distributed information.
- (p) Methodologies and designs for participatory development of strategies and plans to address space-dependent and place-specific issues.
- (q) Tools for defining optimal solutions in allocation/location modelling.
- (r) Methods to develop and test scenarios, undertake forecasts and projections, anticipate potential outcomes, and evaluate potential outcomes against outcome criteria.
- (s) Innovation in methodology and tools to undertake tasks such as national, regional and small area population projections.
- (t) Tools and techniques for simulating growth and development patterns in regional planning.
- (u) The use of qualitative and quantitative methodologies for assessing risk at various levels of spatial scale.
- (v) Designing expert systems to integrate, in a GIS environment, diverse data bases and spatial modelling tools to build Spatial Decision Support Systems with on-line access to model and test scenarios and futures.

### **Activities and outcomes**

The *Methodologies, Tools and Techniques in SISS Research Paradigm Forum* collaborates closely with the *Socio-Spatial Theory* and the *Data Sources, Data Quality and Data Integration in SISS Paradigm Forums*, and the four Application Areas draw heavily on these SISS methodologies, tools and techniques

Activities include:

- *An Annual Workshop in SISS Methods, Tool and Techniques* for Established Senior Researchers, Early Career Researchers, and Research Higher Degree Students, held in June each year at the University of Newcastle and hosted by CoffEE. An international Keynote Speaker is involved in the Workshop.
- Forming cross-disciplinary teams to develop bids for ARC Discovery and Linkage projects and research consultancy bids that involve the development of SISS methodologies and the application of SISS tools and techniques to address key issues in contemporary society and for public policy and business strategy.
- Organising *Specialist Workshops* in SISS methods and applications
- Developing demonstration projects of GIS-based SDSS for socio-spatial analysis and modelling and for scenario evaluation for inclusion in the ARCRNSISS *Shared Research Resources* web site.
- Building linkages with potential end-users of scenarios and forecasting approaches in SISS investigations.
- A scoping exercise on approaches to scenarios and forecasting in a spatial context in Australia, and the formation of a team to develop a major research initiative for an application to the ARC Discovery or Linkage scheme.
- Organising sessions on SISS methods in the conferences of academic and professional associations.
- Contributing to the ARCRNSISS *Summer School for Research Higher Degree Students*.

Outcomes may include:

- publishing and edited volume of papers from the *Annual Workshop in SISS Methods, Tool and Techniques in SISS*
- providing analytic tools and techniques in SISS to the Network's *Shared Research Resources* and the *e-Research Facility in Socio-Spatial Science*.
- enhancing the capacity and capability of Australian researchers in SISS methodology and the use of SISS tools and techniques
- contributing new analytic approaches in the analysis of nationally significant issues
- contributing of papers to the ARCRNSISS *Shared Research Resources* web-site.

### ***2.2.3 The Data Sources, Data Quality and Data Integration in SISS Research Paradigm Forum***

#### **Context**

Fundamental to SISS research is the generation, acquisition and use of information and data appropriate for testing theories, operationalising models and applying tools and techniques of analysis in the investigation of demographic, social, economic and behavioural phenomenon in a space, space-time and place context. That involves:

- the gathering of primary data through surveys and experiments
- the use of existing data for secondary data analysis
- the use of existing information to generate new data through data mining and enhancement

- data integration
- data warehousing
- data interrogation
- data visualisation.

### **Key issues for a research agenda**

Key issues of concern for the *Data Sources, Data Quality and Data Integration in SISS Research Paradigm Forum* are:

- (a) The use of qualitative and quantitative approaches to information collection and data generation.
- (b) Addressing issues of data quality, validity and reliability.
- (c) Issues relating to sampling and non-sampling sources of error and bias in survey design and data collection, particularly in the context of data collection in spatial settings.
- (d) Generating benchmarked data vis-à-vis mode of analysis.
- (e) Generating synthetic estimates through data reduction and micro-simulation techniques.
- (f) Integrating survey data and spatial data.
- (g) Using imputation techniques to establish missing data.
- (h) Generating longitudinal data sets and analysis of longitudinal data.
- (i) Using GIS-enabled tools to integrate diverse data sets.
- (j) Using GIS technology to visualise information
- (k) Building Spatial Decision Support Systems.

Undertaking cutting-edge quantitative analysis and modelling of data in SISS research requires access to diverse data sources, the use of sophisticated statistical software packages, GIS-enabled tools for data integration and spatial analysis, and a capability to visualise the data inputs for analysis and the outputs from analysis and modelling.

### **Activities and outcomes**

The *Data Sources, Data Quality and Data Integration in SISS Research Paradigm Forum* has a linkage role to play vis-a-vis the *Methodologies, Tools and Techniques in SISS Research Paradigm Forum*. As well, it has direct links to the research activity generated through the activities of the four Application Areas. In particular, the *Data sources Data Quality and Data Integration in SISS Research Paradigm Forum* will play leading role in the development and provision of the Network's shared Research Resources.

The development of an agenda for activities by the *Data Sources, Data Quality and Data Integration in SISS Research Paradigm Forum* involves close collaboration with the Australian Bureau of Statistics and with other public agencies that can provide socio-spatial information.

Activities focus on:

- Developing awareness for researchers of data sources available to enhance SISS research.
- Developing awareness among researchers of the issues to do with data quality, reliability, and validity in spatial and other data.
- Generating innovative synthetic spatial data.
- Demonstrating the use of GIS-enabled tools to integrate diverse data in conducting SISS research.
- Informing researchers of ethical issues in data generation and use.
- Developing and providing on-line access to *Shared Research Resources*.
- Building an *e-Research Facility in Socio-Spatial Science*.

That involves the Forum in:

- organising *Specialist Workshops*
- contributing to the ARCRNSISS *Summer School for Research Higher Degree students in SISS Theory and Methods*
- developing partnerships with providers of information and data to enhance SISS research
- developing and providing on-line access to Shared Research Resources, including collaboration with the Australian Bureau of Statistics.
- developing links with existing data repositories, such as ASSDA at ANU
- forming collaborative teams built on collaboration among a number of established research centres in the participating Institutions – UQSRC, CoffEE, NATSEM and GISCA - to develop bids to the ARC LIEF program to fund infrastructure for the development and provision of on-line *Shared Research Resources* for socio-spatial and behavioural analysis and modelling and to build an *e-Research Facility in Socio-Spatial Science*. An ARC LIEF grant has been won for 2007 to begin this process.
- collaboration with the Australian Bureau of Statistics in developing and providing *Shared Research Resources*.

Outcomes may include:

- an enhanced capacity and capability for SISS research in Australia
- developing and providing on-line *Shared Research Resources* that provide access to a wide variety of national, regional and local data bases, with a GIS-enabled capability for data integration and visualisation
- building an *e-Research facility in Socio-Spatial Science* which to enable researchers to conduct on-line research interrogating diverse data bases, integrated through GIS-enabled tools, with the capacity for on-line statistical and spatial analysis and modelling and for visualisation of outputs.

## **2.3 The Network's Application Areas**

Four Application Areas have been formed to facilitate the development of cross-disciplinary and inter-institutional collaboration for innovation in applying SISS theory and methods to investigate social, economic and behavioural phenomena in fields in which the Network's Participants have clearly demonstrated expertise and an established national and international profile.

A major thrust of the activities of the Application Areas is to organise cross-disciplinary and inter-institutional research teams, blending Established Senior Researchers and Early Career Researchers, to develop funding bids to the ARC and other granting and research consultancy bodies to undertake innovative, policy-relevant research in fields of national significance using SISS approaches. Some of the research activity to be guaranteed by the Application Areas will relate to the ARC's National Research Priorities and to other issues of national significance.

### ***2.3.1 The Spatial Dimensions of Demographic, Social and Economic Change in Australia Application Area***

#### **Context**

Understanding the processes of societal change, and measuring the outcomes and impacts of change, is important. The way a society adapts to forces of change over time is complex. The intensity of change seems to be accelerating on the back of new technologies, diversifying lifestyle preferences, growing wealth, shifting demographics, and structural economic change. In general, the adaptation to the forces of change has been relatively smooth at an aggregate level, while distributional impacts are uneven and the benefits are unequally shared across both people and places. That necessitates not only carefully articulated theory, but also rigorous analysis and modelling of those processes and the outcomes and impacts and, as well, the forecasting of future trends and patterns, and the testing of potential scenarios and their impacts.

The processes and dynamics of change that are important and include a complex mix of exogenous and endogenous factors such as:

- globalisation
- exchange rate fluctuations
- international markets
- monetary and fiscal policies
- trans-national corporations
- innovation and diffusion of new technologies
- structural economic changes and the changing nature of work
- structural demographic change
- population growth and migration flows
- capital and trade flows
- natural hazards
- governance and changes in institutional arrangements.

The impacts and outcomes of those factors and processes of change are differentiated across space and for groups of people and they require analysis at varying levels of scale - from the international level to the national level, and at the regional and local levels.

Diverse spatial and place-based information is needed to research these issues using sophisticated SISS methods, tools and techniques to measure, analyse and model those differential outcomes and uneven impacts in order to provide an improved evidence base for policy formulation, plan and program implementation, and business strategy in order to achieve a productive and competitive, an equitable and just, and a sustainable society and economy.

### **Focus for research**

A number of areas have been identified for innovation in the application of SISS theory and methods to address important societal issues of contemporary change in Australian society.

Those include investigation of the following ‘big and complex’ issues:

- (a) The inter-generational analysis of:
  - population dynamics
  - the distribution of wealth and poverty
  - the nature of work and engagement in work
  - patterns of consumptionat the national, state, regional and local levels of scales and the implications of outcomes for the public and private provision of goods and services.
- (b) Investigating the interdependencies between population distribution, housing and residential location choice, labour markets, land use, and transport and travel in the context of regional and local planning.
- (c) Analysing the impacts on different groups of people and on different types of places of trends in tendencies for investment in economic activity to concentrate/agglomerate or disperse/deconcentrate across the settlement hierarchy and within cities and the implications for public policy and business strategy.

Addressing such complex, multi-faceted processes of societal change requires innovative and appropriate theoretically embedded and methodologically rigorous approaches in the application of SISS methods. For example, that might include the following:

- (a) Benchmarking regional and local performance against national performance and evaluating outcomes against principles of efficiency and competition, equity and justice, and environmental sustainability.
- (b) Modelling the regional and local effects of periodicities in national economic indicators, and developing new measures to help explain associations between national, regional and local dynamics.
- (c) Using matrix analysis to understand the way population and economic flows connected places to create differentials of regional growth and development.

- (d) Extending the foundations laid by census and other aggregate data analysis using multi-variate socio-economic spatial analytic tools such as spatial regression, micro-simulation and spatially disaggregated econometric modelling, to more accurately specify regional and local outcomes.
- (e) Linking diverse sources of information, such as the results of sample survey based data from the ABS Labour Force, Health, Housing, and Household Income and Expenditure surveys and business and income tax information, to new measures of socio-economic, health and well-being outcomes.
- (f) Linking polling booth voting behaviour data to local socio-spatial variables to model the effects of demographic, socio-economic and spatial phenomena on cross-sectional patterns and longitudinal trends in levels of support for political parties at the local and regional levels of scale.
- (g) Using spatial interaction models and tools to analyse journey to work data and understand linkage patterns between places in evaluating planning scenarios to improve the jobs-housing balance in large scale urban regions to meet sustainability criteria for regional planning.
- (h) Evaluating the economic, social and spatial impacts of international permanent migration and short-term business migration flows.
- (i) Investigating the implications of multi-purpose trips and multi-destination trips through pathway analysis to inform strategy in fields such as transport planning in urban regions and the marketing of tourist destinations.
- (j) Investigating the effects changes are likely to have on the spatial configuration of production, population, well-being, lifestyles and consumption.
- (k) Understanding impediments that might slow the pace of change and hinder or prevent the full redirection of potential benefits to be derived from change, and determining whether those impediments and benefits are spatially variable so that some people and some places could benefit more than others.
- (l) Addressing the challenges of implementing changes to Australia's institutions, governance systems, social outlooks, social and economic policies, corporate structures, and the like, that might increase societal adaptation and the full realisation of Australia's human potential, both nationally and in particular regions and localities.
- (m) Investigating if adaptive processes vary from place-to-place and, by implication, whether the necessary societal adjustments occur that facilitate the creativity, adaptability and competitiveness of places.
- (n) Assessing the importance of social adaptation for Australia's economic and social future, of canvassing what political, bureaucratic, institution, governance, or other reforms might further lubricate adaptive process, investigating how economic and social change might influence the configuration of industry sectors, the functions and prosperity of regions and places, and of groups in society.
- (o) Assessing how the organisation of Australia's space economy adjusts to scenarios such as: higher energy costs; technological advances in alternative sources of energy; moves to more corporate market-force and less regulatory planning; and moves towards more interventionist spatial planning.

### **Priority for activities**

Researchers in the *Spatial Dimensions of Demographic, Social and Economic Change* Application Area have identified a small number of priority areas for developing team-based research project funding proposals.

- A collaborative research effort through an ARC Discovery grant application between ARCRNSISS and the ARC Research Network in Ageing Well and in Youth and Future Generations, to develop a national spatially disaggregated on-line data base for researchers that explicitly permits the analysis and modelling of the spatial relationships between inter-generational age groups, economic indicators and other social indicators, highlighting patterns for the young and the old. A grant for five years was secured in the 2006 new projects funding round.
- A collaborative research effort through an ARC Discovery grant application to analyse and evaluate the performance and future development potentials of Australia's Rural Heartlands. A grant for two years was secured in the 2007 new projects funding round.
- Partnerships with public sector agencies for 'think-tank' research into scenario building and testing for Australia's future.

### **2.3.2 The Social and Economic Networks Application Area**

#### **Context**

Much of the social interaction and economic activity in society occurs via networks in which the behaviours of actors are embedded, in a situational context. Network ties link actors to each other, as well as to groups, cultural resources, neighbourhoods, communities, institutions, and business partnerships and alliances. Hence networks play a potentially significant role in structuring opportunities and constraints for business operations and social behaviours:

- Networks help our understanding of social dynamics and how local social processes cumulate into population level outcomes.
- Network structures, their inter-dependence with the geographical location of actors, and the dynamics of local processes, impact on how locally interactive, context-dependent actions lead to outcomes at higher more aggregate levels.
- Understanding networks and network-based processes helps the design of 'complex' community-level interventions, especially to induce particular forms of change in behaviour in spatial settings.

While much network analysis has been conducted and modelling formulated in an a-spatial context, most social and economic networks are in fact embedded in a space, space-time, or place context, which is often referred to as 'social space'.

#### **Focus for research**

The focus for developing a research agenda for the *Social and Economic Networks Applications Area* is to advance methodology in network analysis and to address important societal issues in the context of spatially embedded network analysis. That includes the following:

- (a) Characterising multi-layered social spaces in terms of generalised network structures with self-organising network typologies, with applications to areas such as HIV transmission.
- (b) Developing models of both the dynamics of interactive, location-dependent social processes and for the evolution of social space, with applications to the difference of innovations such as take-up of ICTs across social groups and the settlement hierarchy.
- (c) Combining dynamic modelling approaches with new insights into the typology of social space to model the joint evolution of interdependent social processes at multiple levels of analysis in individual, relational and group settings, as applied, for example, in the investigation of phenomena such as social and institutional capital in community development.

### **Priority for activities**

There is a strong concentration of expertise and interest in social and economic networks among the Network's Participants, and especially those located in Melbourne. Thus, a key activity for the *Social and Economic Networks Applications* holding regular workshop meetings in Melbourne.

The priority areas for focusing workshop activity and the formation of research teams to develop project and funding bids are in the following areas:

- Trust and reputation in ad-loc local communities.
- Social and economic networks, neighbourhood efforts, and spatial spill-over effects in local labour market dynamics.
- Social networks and HIV risk-prevention.
- Methods for analysing networks within teams and organisations in small or micro scale human environments.
- Networks, social capital and capacity building.

### ***2.3.3 The Regional Development and Community Capacity Building Application Area***

#### **Context**

Reconceptualising the meaning of space and of place in the context of understanding the nature of the dynamics underlying differences in socio-economic performance and well-being across regions and between local areas, and understanding the process involved in the successful development of strategy and the implementation of plans to build local capacity and develop regions and local communities, are important considerations for innovation in approaches to local and regional economic and community development. That involves a range of considerations, including:

- using appropriate analytic tools to assess and evaluate local and regional performance and capacity
- developing processes for regional and community development strategy formulation and plan and program implementation

- addressing issues to do with governance and institutional reform to assist local communities and regions to manage transitional change in a ‘place’ context.

These are crucial issues in the contemporary public policy debate for regional development in Australia.

### **Focus for research**

Researchers in the *Regional Development and Community Capacity Building* Application Area have an important role to play in developing theoretical frameworks and applying SISS methodologies to enhance regional analysis and community capacity building in Australia.

The focus for a research agenda is on the following:

- (a) Developing meaningful benchmarked indicators to measure and evaluate place-based performance and evaluate regional risk.
- (b) Evaluate the impact of the Cost Shifting Inquiry on local areas and their capacity to fund and manage local development.
- (c) Exploring the meaning of the ‘new regionalism’ for governance.
- (d) Measuring the local impact of global and national processes of change.
- (e) Understanding the role and impact of leadership, entrepreneurialism and institutional factors in endogenous regional growth and development.
- (f) Developing strategies for managing population and economic decline in small towns in rural and remote areas of Australia.
- (g) Measuring and ameliorating the unintended consequences of planning and design at the local level.
- (h) Developing strategies for local capacity building and demonstration projects of ‘best practice’ for local development and capacity building.

### **Priority for activities**

The focus for activities in this Application Area are on the following:

- An edited book on *Regions and Nations* contributed to by Network Participants.
- Forming teams to develop bids for research project funding.
- Collaborating with the Australia and New Zealand Section of the Regional Science Association International through special sessions on SISS approaches in regional development and capacity building at that organisation’s annual conference.
- Developing ‘best practice’ models for local and regional development strategy and capacity building.
- Collaborating with the Bureau of Transport and Regional Economics in research activities and workshops to address development issues for rural and regional Australia.

### ***2.3.4 The Health, Well-Being and Collective Efficacy in Socio-Spatial Settings Application Area***

#### **Context**

Issues of health, the well-being and the quality of life of people, and local collective efficacy are extremely important in any society. The occurrence of health, well-being and collective efficacy phenomena are known to be uneven in incidence and vary in character across groups of people and between places. The analysis of those issues varies from a macro-aggregate focus on health and other conditions such as crime, to the disaggregated analysis of the individual and their behaviours and perceptions, particularly in the context of their operational, local environment.

Thus, the investigation of those behaviours involves:

- a range of methods and tools, from secondary analysis of national data sets with a spatial dimension, to the use of sample surveys and quasi-experimental designs to generate information on human attitudes, perceptions, cognition and overt behaviours, and/or individual and group decisions or choices
- testing hypotheses about potential pathways between environmental and social factors, behaviours, and health and other outcomes.

In such analyses, objectively assessed behavioural outcomes (such as physical activity or smoking), risk factors (such as blood pressure or cholesterol), data on indices of social well-being and quality of life (such as community engagement, the incidence of crime, levels of satisfaction with life and one's local area), health and other outcomes (including local hospital use or population-based mortality and morbidity data), and the incidence of crime and collective efficacy, may be used as dependent variables. How these are influenced by objective socio-spatial phenomena as independent and/or intervening variables can be examined, allowing unique hypotheses to be tested.

#### **Focus for Research**

Researchers in the *Health, Well-Being, and Collective Efficacy in Socio-Spatial Settings Application Area* focuses attention on investigating the following:

- (a) Exploring the inter-linkages between local demographic and socio-economic conditions, labour market outcomes, health, housing, family breakdown, and crime and collective efficacy.
- (b) Investigating the inter-relationships between cognitive structures, spatial behaviour, environmental structures and health and well-being outcomes and perceived quality of life.
- (c) The interaction between behaviour, well-being and quality of life, social networks and social capital.
- (d) The impacts of population change on well-being and health.
- (e) The influence of community level environments on health-related behavioural choices, and on the nature and incidence of crime and criminal behaviour.
- (f) Health service utilisation.

#### **Priority for activities**

The focus for activities for this Application Area is on:

- Developing on-line accessible data bases for secondary data analysis.
- Developing on-line demonstration projects for ‘best practice’ in research design and implementation for investigating the inter-relationship between health, behaviour and well-being outcomes and objective socio-spatial phenomena in local operational situations.
- Holding workshops on SISS methods, tools and techniques for analysing health and well-being outcomes.
- Undertaking research on crime and collective efficacy in a variety of spatial contexts, and developing Shared Research Resources on these phenomena

## **SECTION 3: CONTRIBUTING INSTITUTIONS AND PARTICIPATION IN THE NETWORK**

### **3.1 The Host Institution**

The Host Institution for ARCRNSISS is the University of Queensland, which provides a cash contribution of \$50,000 p.a.

### **3.2 Key Institutional Members**

There are a further nine Key Institutional Members of the network that each provide a cash contribution of \$10,000 p.a. They are:

- University of Adelaide
- University of Canberra
- Flinders University
- Griffith University
- University of Melbourne
- La Trobe University
- University of New England
- University of Newcastle
- University of Western Sydney

In 2005 RMIT University withdrew from Network.

### **3.3 Other Institutional Contributors**

There are a further 8 universities that contribute to the Network.

A cash contribution of \$5,000 p.a. is made by five universities in which a School/Department/Research Centre is the conduit for membership of the Network. Those universities are:

- Central Queensland University
- Monash University
- Southern Cross University
- University of Sydney
- University of Tasmania.

A cash contribution is made on the basis of a \$1,500 p.a. per capita payment for individuals to be members of the Network by five Universities. They are:

- University of Ballarat
- University of South Australia
- University of Western Australia

### **3.4 Non-University Institutional Members**

The Australian Bureau of Statistics is a formal member of the Network.

### **3.5 List of Network Participants**

As of October 2006, there were 280 individuals registered as Network Participants and are regarded as members of ARCRNSISS. This is a substantial increase over the 86 original participants upon the formation of ARCRNSISS.

The list of members is provided in the Appendix

### **3.6 Strategy for Expanding the Network and Extending Associations**

The legal agreements establishing ARCRNSISS provides for the expansion of the Network through new institutional participants with the agreement of the original Institutional Members.

For those institutions that are providing a \$5,000 cash contribution p.a. or a \$1,500 contribution payment p.a., additional individual members may be added if the Institution involved decides to become a key Institutional member.

Other universities may seek to join the network as a full member for a \$20,000 pa cash contribution.

It is desirable for there to be provision for non-community institutions to become members of the Network. Already there have been approaches to the Network from a member of government and other agencies to join ARCRNSISS. This may be facilitated through a \$10,000 to \$20,000 p.a. contribution that would permit up to 5 to 10 persons from a non-university institutional member to participate in Network activities (subject to the constraint on the number of places available for participation in a specific Network Activity). Preferably such non-university institutional members would be involved in collaborative partnership activities with Network researchers and end-users of SISS research.

The Bureau of Transport and Regional Economics has indicated a desire to join the Network.

### **3.7 Involvement of Non-network Members in Network Activities**

Because of the limited resources of the Network, it is necessary that ARCRNSISS' cash resources be limited to expenditure that:

- facilitates Network Participants (and their Research Higher Degree Students) to be involved in Network Activities
- enhances the development and provision of Shared Research Resources for the benefit of research in Australia
- facilitates international collaboration between researchers in furthering SISS research.

It is, however, important that ARCRNSISS promotes SISS approaches and applications, particularly with potential end-users of SISS research. Thus, facilitating the involvement of organisations and individuals beyond the formal membership of ARCRNSISS in Network sponsored organised activities is desirable, particularly in events such as the ARCRNSISS National Conference in SISS Approaches and Applications. That is done on a “fee for involvement” basis. The ARC requires ARCRNSISS to receive permission from the ARC for such charges for non-member involvement in a Network Activity.

## **SECTION 4: NETWORK GOVERNANCE AND MANAGEMENT**

An important requirement for ARCRNSISS is to develop and implement a governance strategy and a management structure that enhances collaborative activity and innovation, provides transparency and accountability, and effectively and efficiently uses limited resources of the Network.

The success of the Network will be dependent upon both the goodwill and the enthusiasm of Network Participants. That will be delivered largely through these ‘in-kind’ contributions to Network activities and functions, and through the way the ‘cash’ resources provided by the ARC and the Participating Institutions are used to facilitate researchers to work together, develop new collaborations, leverage additional research resources, develop their research capacity and capabilities, and produce innovative research output.

### **4.1 Host Institution and the Network Management Office**

#### ***4.1.1 Host Institution***

The University of Queensland is the Host Institution for ARCRNSISS and is responsible for administering the legal agreement with the ARC establishing the Network and for reporting on network activity and performance.

#### ***4.1.2 Network Convenor***

Professor Robert J. Stimson (a nationally and internationally recognised researcher and research manager in urban studies, behavioural geography, spatial analysis and regional science) is committed 60% time for the five year funding period as the Network Convenor. (In the absence of the Network Convenor overseas, or due to sickness or holidays, one of the Host Institution members of the Network Management Committee will assume the role of acting Network Convenor).

#### ***4.1.3 Network Management Office***

A Network Management Office has been established at the University of Queensland located within the facilities of the Centre for Research into Sustainable Urban and Regional Futures (CR-SURF) in the School of Geography, Planning and Architecture.

The ARCRNSISS Management Office is staffed by:

The Network Convenor: Professor Robert Stimson (Academic level E) (60% time)

The Network Manager: Mrs. Tracey Johnstone (HEW Level 8)(100% time)

Administrative Assistant: Ms. Vanessa Reid (HEW Level 4) (60% time).

Administrative Assistant: (HEW Level 4) (Casual as needed)

## Contact details

The Network Management Office address is:

Ground Floor, Social and Behavioural Science Annexe Building (#31B)  
St Lucia Campus  
University of Queensland  
Brisbane, Qld, 4075  
Ph: 07 3365 4101 (International + 61 7 3365 8594)  
Fax: 07 3365 3561  
Email: [t.johnstone@uq.edu.au](mailto:t.johnstone@uq.edu.au)  
<http://www.siss.edu.au>

Other management functions are contracted out/seconded-in on an 'as needs' basis to perform functions related to:

- Developing and maintaining of the Network's website.
- Providing on-line accessible *Shared Research Resources*.
- The strategic development of the Network through alliances and leveraging external funding support.

### 4.1.4 Functions

The functions of the Host Institution Network Management Office are to manage the overall operation of the Network. That includes the following functions:

- Provide Secretariat functions to the Network's Advisory Board and Committees.
- Organise and manage Network Activities.
- Organise travel and other arrangements for Network participants and their involvement in Network Activities.
- Develop and maintain the Network's web site.
- Develop and market the Network's profile.
- Manage the formal collaborations between ARCRNSISS and CSISS in the US and BRCSS in New Zealand.
- Provide general administrative support to enhance the development and operation of the Network and the activities of the Paradigm Forums and Application Areas, and the involvement of Network Participants in the activities of the Network.
- Oversee the development and provision of Shared research resources and the e-Research facility in Socio-Spatial Science.
- Oversee the management of Network funds.
- Preparation of the Annual Report and other reporting to the Arc and Network Participating Institutions.

Some of these functions are undertaken through collaboration or contact with researchers, or the unit in which they work, within a Contributing Institution to the Network.

## **4.2 Network Advisory Board**

### **4.2.1 Members**

A six-member Advisory Board has been formed comprising three international and three Australian members with an interest in SISS. The current membership for Advisory Board is:

Emeritus Professor Mal Logan (Chair), Former Vice Chancellor of Monash University (October 2004 to April 2006)

Emeritus Professor Robert Smith (Chair), Former Vice Chancellor of University of Western Australia and of University of New England (from April 2006)

Professor Michael Batty, CASA, University College, London

Professor Michael Goodchild, CSISS, UCSB, USA

Mr Peter Crossman, Government Statistician, Office of Economic and Statistical research, Queensland Treasury

Professor Deborah Terry, Executive Dean, Faculty of Social and Behavioural Sciences, University of Queensland

Professor T.Snijders, University of Groningen, The Netherlands.

### **4.2.2 Functions**

The Advisory Board meets annually in person or by teleconference. Its role is to:

- Provide strategic advice for the development of the Network.
- Review and give advice on the Network's Strategy and performance.
- Act as a 'sounding board' for the Network Convenor.

The Chair of the Network Advisory Board is also Chair of the Network Strategy and Planning Committee.

## **4.3 Network Strategy and Planning Committee**

The Network Strategy and Planning Committee is constituted to give a broad involvement of mainly Established Senior Researchers, as well as a number of Early Career Researchers, from across a range of Contributing Institutions in the important role of developing long-term strategy and activity priorities for ARCRNSISS. The Network Convenor and the Leaders of the Paradigm Forums and the Application Areas, the Co-ordinator of the Network's *Summer School for Research Higher Degree Students in SISS Theory and Methods*, and a representation of the Australian Bureau of Statistics, are members of the Strategy and Planning Committee.

### **4.3.1 Members**

Current members of the Network Strategy and Planning Committee are:

#### **Chair**

Emeritus Professor Mal Logan (Chair), former Vice Chancellor, Monash University (October 2004 to April 2006)

Emeritus professor Robert Smith (Chair) (From April 2006)

### **Members**

Professor John Beard, Southern Cross University  
Professor Andrew Beer, Flinders University  
Professor Ed Blakely, University of Sydney  
Professor Ann Harding, University of Canberra  
Professor Graeme Hugo, University of Adelaide  
Associate Professor Pauline McGuirk, University of Newcastle  
Professor John Martin, La Trobe University  
Professor Lorraine Mazerolle, Griffith University  
Professor Bill Mitchell, University of Newcastle  
Professor Kevin O'Connor, University of Melbourne  
Professor Phillip O'Neill, University of Western Sydney  
Professor Neville Owen, University of Queensland  
Professor Pip Pattison, University of Melbourne  
Dr Garry Robins, University of Melbourne  
Associate Professor Tony Sorenson, University of New England  
Professor Bob Stimson, University of Queensland (Network Convenor)  
Professor Mark Western, University of Queensland  
Associate Professor Scott Baum, Griffith University of Queensland  
Mr Paul Williams, Australian Bureau of Statistics

### **4.3.2 Functions**

The role of the Network Strategy and Planning Committee is to:

- Propose the long-term strategy for the development of the Network.
- Identify priorities for Network Activities.
- Provide advice to the Network Convenor and the Network Management Committee.
- Provide advice to the Leaders of the Paradigm Forums and the Application Areas.
- Assist in the development of and approve the Network's Strategic Plan and Operational Plan.

In carrying out its function, the Network Management Committee takes account of:

- Advice received from the Network's Advisory Board.
- Information prepared by the Network Convenor and the Network's Management Office.
- Feedback from the Network's Management Committee.
- Proposals from the leaders of the Paradigm Forums and the Application Areas.

### **4.3.3 Meetings**

The Network Strategy and Planning Committee meet in-person at the time of the Network's National Conference, and on at least two occasions each year via

teleconference (or in-person if the Committee Chair or Network Convenor deems that to be necessary).

A quorum for a meeting of the Network Strategy and Planning Committee is one third of the Committee members.

#### **4.4 Network Management Committee**

The Network Management Committee comprises four Network Participants representing the Host Institution (including the Network Convenor), one Network Participant from each of the Participating Institutions that are the Key Institutional Members and the Network Manager.

##### **4.4.1 Membership**

The current membership of the Network Management Committee is:

###### **Chair**

Professor Robert Stimson, Chair, University of Queensland (Network Convenor)

###### **Members**

Professor Andrew Beer, Flinders University

Professor Ann Harding, University of Canberra

Professor Graeme Hugo, University of Adelaide

Professor John Martin, La Trobe University

Dr Cristina Martinez-Fernandez, University of Western Sydney

Professor Lorraine Mazerolle, Griffith University

Professor Bill Mitchell, University of Newcastle

Professor Neville Owen, University of Queensland

Professor Pip Pattison, University of Melbourne

Associate Professor Tony Sorensen, University of New England

Professor Mark Western, University of Queensland

Mrs Tracey Johnstone, University of Queensland (Network Manager)

##### **4.4.2 Functions**

The role of the Network Management Committee is to provide advice and guidance to the Network Convenor on the overall management of the Network.

The specific functions of the Network Management Committee are to:

- Review Network Activity Proposals and decide on funding support and facilitation arrangements.
- Approve the Network's annual budget.
- Approve the allocation of Network funds for network Activities.
- Provide guidelines for and give advice to the Network Convenor of the operational management of the Network.

- Approve the Annual Report and other reports to the ARC and the participating institutions.
- Assist the Network Convenor in conducting Network Activities.
- Appoint sub-committees to undertake specific tasks vis-à-vis Network Activities.

#### ***4.4.3 Meetings***

The Network Management Committee meets through teleconferencing as needs throughout the year, and typically every 6 to 8 weeks. In between meetings corresponding discussions and decisions are taken ‘flying minute’ via email.

A quorum for a meeting of the Network Management Committee is one third of the Committee Members.

#### ***4.4.4 Activity Proposals: Procedures for Review, Funding and Reporting***

Network Activities are initiated by Network Participants, often through the Network’s Paradigm Forums and Application Areas. An on-line system has been established whereby an Activity Proposal is submitted to the network Management Office through the Network web-site. The Activity Proposals are evaluated by the Management Committee and when supported a determination is made on the level of funding and the conditions attached for the operation of an activity.

When a Network Activity Proposal is being discussed for funding and facilitation for which a member of the Network Management Committee is the leader or a member of a team, that member of the Committee shall absent himself/herself from participating in the decision process.

The leader of a funded Activity is required to submit progress and final reports, those being submitted on line, with review from the Management Committee. The expenditure on an activity is monitored by the Network Management Office.

It is required that Network Participants acknowledge the support of ARCRNSISS with respect to publications and other outputs derived from an Activity funded by ARCRNSISS, and events such as workshops sponsored by ARCRNSISS are required to acknowledge the support of the Network.

## **SECTION 5:**

### **ARCRNSISS NATIONAL CONFERENCE IN SISS THEORY, METHODS AND APPLICATIONS**

The ‘showcase’ event for the Network is the ARCRNSISS National Conference in SISS Approaches and Applications.

#### **5.1 The Inaugural Conference, Brisbane, 13-14 December 2004**

The Inaugural Conference was held in Brisbane, 13-14 December 2004, just a couple of months after the establishment of the Network. Between 55 and 60 participants in the Network attended the Inaugural Conference. That meeting had Professor Michael Goodchild, Director of the CSISS at the University of California, Santa Barbara, as the Keynote Speaker. He is a member of the Network Advisory Board.

The main purpose of The Inaugural Conference was to provide an overview of SISS developments and the challenges ARCRNSISS faces in developing its agenda of research and activities.

The Conference sessions included ‘brainstorming’ sessions for the Network’s Paradigm Forums and Application Areas for them to refine their agendas for research and to foreshadow other Activity Proposals that will emerge during 2005.

#### **5.2 The National Conference**

The ARCRNSISS *National Conference in SISS Theory, Methods and Applications* provides the forum for Network Participants, Research Higher Degree Students, information and data providers and end-users of SISS research, and the wider research community to get together to address issues for SISS research development and its applications in Australia.

The National Conference is the event at which:

- Network Participants and others may present the results of their research featuring SISS theory, methodology and applications
- both international and Australian leading researchers are featured as Keynote Speakers
- there is an inter-mingling of Established Senior Researchers, Early Career Researchers, and Research Higher Degree Students
- the utility of SISS applications are demonstrated to end-users
- the development, provision and use of Shared Research Resources are demonstrated.

### **5.3 Timing of the National Conference**

The most appropriate timing for the ARCRNSISS National Conference is either May or November in order to avoid semester times and clashing with other academic and professional association conferences and meetings during the between semester and the within semester breaks throughout the academic year.

### **5.4 2006 National Conference**

The 2006 ARCRNSISS National Conference in SISS Approaches and Applications was held at the University of Melbourne in May. It was attended by up to 100 Network members and a number of non-network participants.

### **5.5 Themes for the National Conference and Conference Highlights**

The Network Strategy and Planning Committee may advise on the theme or themes for the National Conference, propose Keynote Speakers, and suggest the format for the Conference.

Highlights of the National Conference are:

- plenary sessions for the keynote speakers
- presentations on major research outcomes demonstrating the applications of SISS approaches, in particular for projects and activities that are likely to draw media attention and relate to national research priorities
- sessions for the Network's Paradigm Forums and Application Area to meet, review the projects or develop their activity agendas
- services for Research Higher Degree Students to meet with Established Senior Researchers and present programs on their research.

The Management Committee is responsible for planning the National Conference and may appoint a local Conference Co-ordinator and Local Organising Committee or a Conference Program Committee. The Network Management Office has the overall responsibilities for the organisation of the National Conference.

## **SECTION 6: BUILDING CAPACITY AND CAPABILITY IN SISS RESEARCH**

A key function of ARCRNSISS is to nurture and facilitate the development of Australian's capacity and capability in SISS research. That is achieved through:

- a general focus on enhancing the development of competence in the use of SISS tools and techniques
- a specific focus on Early Career Researchers and Research Higher Degree Students to enhance their capabilities in SISS theory, methods and applications
- a specific focus on integrating Established Senior Researchers and Early Career Researchers in teams to develop research proposals and seek funding for SISS research.

### **6.1 Activities**

Activities that the Network facilitates and funds to address the development of capacity and capability in SISS research are:

- *Specialist Workshops in SISS Theory, Method and Applications* (that includes collaborations with CSISS in the US)
- the ARCRNSISS *Summer School for Research Higher Degree Students in SISS Theory and Methods*
- seed funding of research teams to develop proposals and bid for funding for projects using SISS approaches
- developing and providing *Shared Research Resources* and an *e-Research Facility in Socio-Spatial Science*

### **6.2 Specialist Workshops in SISS Theory, Methods and Applications**

A program of *Specialist Workshops in SISS Theory, Methods and Applications* is organized by the Network. That program is developed mainly through the activities of the Paradigm Forums and Application Areas. The focus of those workshops is on:

- enhancing researcher's skills
- fostering new research collaborations
- build linkages.

The number, size and duration of the Student Workshops organized by the Network is not a fixed each year. Rather, they evolve to meet perceived needs and to take advantage of visits of international experts to Australia, which the Network might sponsor, often in collaboration with another agency.

Through the Memorandum of Understanding for Collaboration between ARCRNSISS and CSISS in the US, CSISS provides a number of places for Early Career Researchers and Research Higher Degree Students from ARCRNSISS to attend CSISS workshops.

### **6.3 Summer School for Research Higher Degree Students in SISS Theory and Methods**

This event is held annually over a 7 to 10 day period in February, commencing in 2006.

The first Summer School was hosted by the Planning Research Centre at the University of Sydney. The 2007 Summer School will be held at the University of Queensland, hosted by the UQSRC.

Attendance at the Summer School is restricted to 20 to 25 participants who are Research Higher Degree Students, with preference given to students being supervised by a Network Participant.

A number of places are provided for participants from the US selected and funded by CSISS in the US under a reciprocal arrangement between ARCRNSISS and CSISS for RHDs and ECRs to participate in SISS training programs, and from BRCSS in New Zealand..

Students should be in the later part of their first year of enrolment or in the early part of their second year of enrolment as full time PhD candidates, and be at the stage of preparing for, or having just gone through, the process of confirmation of their thesis research project.

Established Senior Researchers from the Network are instructors in the Summer School, conducting half day seminars on SISS Theory and Methods. The Australian Bureau of Statistics provides a session on Australian Official Data and its use.

A number of Early Career Researchers from the Network are tutors in the Summer School.

The Summer School provides Research Higher Degree Students with exposure to state of the art thinking in SISS research paradigms, tools and techniques to assist RHD Students to design and conduct research at the doctoral level. On-line demonstration projects are incorporated in the program. The students bring to the Summer School their doctoral thesis research proposals and report on the incorporation of SISS approaches into their research designs.

ARCRNSISS substantially subsidize the travel, accommodation and living costs for those students selected to participate, but a cash contribution from the school/department in which the RHD student is enrolled may be required toward the cost of attendance at the Summer School.

### **6.4 Seed Funding the Formation of Research Teams to Bid for Project Funding for Research in SISS**

An important aspect of developing Australia's capacity and capability in SISS research is for the Network to facilitate the formation of cross-disciplinary, inter-institutional research teams to develop innovative projects and seek competitive and

other funding. The Network provides small amounts of funding for those teams to meet and be resourced to develop competitive funding bids, sometimes in collaboration with international researchers.

The formation of these project teams typically arises out of the activities of the Network's Paradigm Forums and the Application Areas.

A specific target for funding bids is the ARC Discovery and Linkage programs, with the latter involving industry partners.

This is the way in which ARCRNSISS can facilitate and seed-fund new research initiatives that bring together researchers who normally would not have worked together to create innovation in cross-disciplinary research incorporating SISS approaches. Success in such funding bids will represent the 'leveraging' capacity of the Network.

Research funding won through those research initiatives does flow to the Network, and nor does the Network conduct and manage the resulting research effort. That will be done in the normal way through the University or Universities of the CIs of the project.

Where a research team thus supported through this seed funding developmental process is successful in obtaining competitive grant funding, the network may provide funding to facilitate the research team to meet through teleconferencing and in person and to conduct workshops on the research.

## **SECTION 7:**

### **SHARED RESEARCH RESOURCES AND AN e-RESEARCH FACILITY IN SOCIO-SPATIAL SCIENCE**

A key role for ARCRNSISS is to facilitate the development of arrangements and mechanisms for the provision of *Shared Research Resources* that are accessible on-line for Network Participant and their Research Higher Degree Students and for researchers and students more widely and to build an *e-Research Facility in Socio-Spatial Science*.

The formal involvement of the Australian Bureau of Statistics is crucial in these activities of the network, and especially in the provision of data. Additionally, linkages with other information and data sources and providers will be necessary for the longer term development of these activities.

#### **7.1 The Focus**

The focus for ARCRNSISS in developing these activities is on the following:

- Developing and operating an on-line Research Bibliography and Research Papers facility whereby researchers deposit information papers and research outputs in SISS research (this is to be known as *SISS Research On-Line*).
- Developing Demonstration Projects for on-line access to research data bases with GIS-enabled visualization capability.
- Providing on-line access to national and regional specific demographic and socio-economic data bases, with the capability for GIS-enabled analysis and visualization.
- Generating and providing on-line access to new synthetic data using micro-simulation methodologies derived through integrating national survey data and spatial data bases, such as the Census.
- Generating and providing on-line access to survey data sets integrated with spatial objective data bases, made available for secondary data analysis.
- Developing and providing on-line access to multi-layered spatial information and the integration of data through the use of GIS tools with visualization.
- Developing and operating on-line access to demonstration projects providing researchers with 'best practice' frameworks for research design and implementation to illustrate examples of SISS research contexts.
- Providing a warehouse function for Network researchers and others to deposit data bases for on-line access by researchers for secondary data analysis.
- Developing and providing on-line access to research tools, including software to enhance SISS research.
- Building an *e-Research facility in Socio-Spatial Science*.

## **7.2 Collaboration with Information and Data Suppliers**

Collaboration will be necessary through formal partnerships involving key institutions and with other networks and specific research institutions to achieve this Shared Research Resources agenda. That will involve seeking partnerships and developing collaborations with organisations such as:

- The Australian Bureau of Statistics
- The Reserve Bank
- The Australian Electoral Commission
- The HILDA project at the Melbourne Institute, University of Melbourne
- The Australian Social Science Data Archives (ASSDA), ANU
- The Social Welfare Research Centre, University of NSW
- The Bureau of Transport and Regional Economics
- Information Queensland
- CSISS in the US

## **7.3 Linking to Shared Research Resources**

Facilitating access to Shared Research Resources is also achieved through explicit linkages between the ARCRNSISS web site and other web sites.

## **7.4 Capacity to Do Research On-line**

A particularly important focus for the development of Shared Research Resources by the Network is the development and provision of systems to enable researchers to conduct SISS research on-line through the integration of data bases through GIS-enabled technologies, including visualization, through integration with statistical analytic tools and spatial modelling tools.

## **7.5 Priority Activities**

Short term priority actions to develop Shared Research Resources include the following:

- (a) Forming a Network Working Party to collaborate with the Australian Bureau of Statistics to develop a Program and Protocol for the provision of national data bases on new spatial scales and with new cross-tabulations to be integrated in a GIS framework, and made available to researchers through the ARCRNSISS on-line *Shared Research Resources* facility via the ARCRNSISS web-site.
- (b) Establishing on-line access to a number of spatially integrated data bases as Demonstration Projects developed by Network Participants through part and existing ARC and other funded projects, and made available through the ARCRNSISS on-line *Shared Research Resource* facility via the web-site.
- (c) Establishing on-line access to one or more Demonstration Projects providing a 'Best Practice' Framework for Research Design and Implementation for a

specific SISS research content and made available through the ARCRNSISS web-site.

- (d) Developing and operating a web-based clearing house for SISS Publications, Research Projects and on –line discussion, events, feature articles and opinions made accessible through the ARCRNSISS web-site. The link will be to SISS Research On-line, a web facility operated and managed at the Australian Institute for Social Research at the University of Adelaide, using the data base technology developed for South Australia Policy On-Line.
- (e) Through the ARCRNSISS web-site, provide a link to the CSISS web-site in the US thus giving direct access to the CSISS on-line Spatial Tools, Spatial Resources, Learning Resources, Search Engines and SPACE Workshops Facility.
- (f) Form a team of Network Participants to prepare a successful bid to the ARC LIEF Scheme to fund a multi-institutional e-Research Facility for Socio-Spatial Science. Initial funding in support has been won for 2007. Further funding beyond 2007 will be necessary to complete and maintain this facility. The facility will be developed by a research team of Network members in UQSRC, CoffEE, NATSEM, and GISCA, and involves the Australian Bureau of Statistics.
- (g) NCRIS funding

## **SECTION 8: INTERNATIONAL LINKAGE AND COLLABORATION**

An objective of ARCRNSISS is to encourage and facilitate international linkages and research collaborations in raising the profile of Australia's effort in SISS research. That can be achieved through:

- Building on existing linkages and collaborations brought to the Network by Network Participants.
- Using the Network's Paradigm Forums and Application Areas to identify opportunities for international linkage and collaboration, including the involvement of international researchers in the activities they generate.
- Having memoranda of understanding for collaboration and partnerships between ARCRNSISS and similar networks or research organisations overseas with a focus on SISS.

### **8.1 A Formal Collaboration between ARCRNSISS and CSISS in the US**

The application to establish ARCRNSISS submitted to the ARC in 2004 explicitly drew on the experience of CSISS, established in the late 1990s by the US NSF. CSISS staff was particularly helpful in supplying information to those preparing the bid for Network funding. That was facilitated by established links between some of the Network Participants and CSISS.

A priority for 2005 was the development and signing (now achieved) of a formal Memorandum of Understanding for Collaboration between ARCRNSISS and CSISS. That includes:

- the exchange of information and collaborative sharing of research resources
- collaboration in holding Specialist Workshops
- providing mutual access of a specified but limited number of researchers from the US and Australia in activities such as workshops organised by ARCRNSISS and CSISS
- collaboration in seeking bi-lateral funding (particularly from the ARC and NSF) for collaborative activities in SISS.

### **8.2 Formal Collaboration with Building Research Capability in the Social Sciences in New Zealand**

A formal agreement for collaboration is being developed between ARCRNSISS and BRCS in New Zealand, which will come into operation in 2007. It will involve a program of trans-Tasman collaboration in SISS activities.

### **8.3 Opportunities for Other Linkages and Collaborations**

There will emerge opportunities for linkage and collaboration with other institutions overseas concerned with SISS and related research and development and then will be formed initially through the existing networks of the Network's Participants.

In the longer term, it may be possible for ARCRNSISS to play a facilitating role in the wider Asia Pacific region for the development of SISS research.

### **8.4 Involvement of International Experts in ARCRNSISS Activities**

ARCRNSISS facilitates and provides some funding for international experts in SISS research to be involved in Network activities that will enhance the knowledge of Australia's researchers and their capacity and capability in using SISS approaches. That includes the involvement of international experts as:

- Keynote Speakers at the ARCRNSISS National Conference
- contributors to Specialist Workshops
- PIs in project funding bids for projects developed by teams of Network Participants involving international collaboration.

## **SECTION 9: THE ARCRNSISS WEB-SITE**

The ARCRNSISS web-site is a crucial component of the interaction that facilitates the Network to operate effectively.

### **9.1 Spatially Integrated Social Science**

The Network's Web-site is: [www.siss.edu.au](http://www.siss.edu.au)

The initial web-site was developed in an ad-hoc manner by modifying and adding to the initial web-site that was established in early 2004 as a requirement for securing the 'seed funding' grant from the ARC under its Research Initiatives Program.

Following the establishment of ARCRNSISS in late 2004, there was a minor upgrading of that web-site, but with substantial new information being added.

### **9.2 The Re-Vamped Permanent Web-Site for the Network**

It makes good sense to ensure compatibility between the ARCRNSISS web-site and the CSISS web-site in the US, and that has been achieved.

A complete re-vamp and re-design of the ARCRNSISS web-site was build and put into operation in 2005. That incorporates:

- compatibility with the CSISS web-site, with direct links between the two sites
- the capability for on-line submission of Network Activity Proposals and on-line management of Network activities
- the capability for on-line enrolment/registration in Network Activities, such as the Annual Conference and Specialist Workshops
- a direct link to the Spatially Integrated Social Science Research On-Line facility being developed for the Network
- a Shared Research Resources facility, with direct links to demonstration projects, analytic tools, and data bases.

## **SECTION 10: NETWORK PROMOTION, MARKETING AND LONGEVITY**

### **10.1 Network Promotion and Marketing**

The success of ARCRNSISS will be reflected in how effectively the Network can:

- demonstrate how it has ‘made a difference’ in fostering innovation in SISS research in Australia and through international linkages
- demonstrate productive links with up-front providers of information and data and with end-users of SISS research
- achieve longevity through continuation of support beyond the 2004-2009 five-year funding period, achieved through continued ARC funding and/or continued and extended institutional support (universities), and/or external public and private sector support.

Achieving those outcomes requires ongoing attention to:

- promoting and marketing the Network
- extending and diversifying participation in the Network
- developing strategic linkages with end-users and internationally
- extending and diversifying the resource base of the Network.

A comprehensive marketing strategy will be implemented from late 2006.

#### **Vehicles for Promotion and Marketing the Network**

Key vehicles for promoting and marketing ARCRNISS are:

- the ARCRNSISS web-site
- the ARCRNSISS National Conference
- collaboration with academic and professional organisations and annotations
- International collaboration
- brochures and publicity pamphlets
- media commentary by researchers identifying the Network.

### **10.2 Developing Strategic Linkages**

Crucial to the success of the Network are strategic linkages with:

- up-front providers of information and data relevant for enhancing SISS research
- end-users demonstrating applications of SISS research.

Strategic linkages will both build on the benefit of existing linkages of Network participants and create new linkages through innovation that the Network facilitates and organises.

A key focus for building a strategic linkage initially is the development of a partnership arrangement between the ARCRNSISS and the Australian Bureau of Statistics to develop Shared Research Resources available to researchers on-line

through GIS-enabled spatial decision support systems developed and operated by the Network and accessed through the ARCRNSISS web-site.

Other priorities for building linkages to enhance the provision of information and data to enhance SISS research include:

- Federal Government agencies, such as: BTRE, AIHW, DFACs,
- State Government agencies, such as OESR in Queensland Treasury.

An important component of the strategy into building linkages is for ARCRNSISS to facilitate and resource cross-disciplinary teams of Network Participants to bid for competitive grants and to form funding partnerships – such as through the ARC Linkage Scheme – with end-users of SISS research.

International linkages are being built, initially through the formal Memorandum of Collaboration between ARCRNSISS and CSISS in the US and a collaborative agreement with BRCS in New Zealand.

Other target priorities for building international linkages are yet to be determined and initially will focus on existing networks which Network member bring to ARCRNSISS.

### **10.3 Extending and Diversifying Participation in the Network**

Initially there were 88 Network Participants from across 19 Universities as Contributing Institutions and Australian Bureau of Statistics. A policy and strategy is being implemented whereby participation in the Network may be extended and diversified, both within those currently Contributing Institutions, and beyond into new institutions that become contributors. At the end of 2006 there were 18 participating universities and the ABS as institutional members, and membership of the Network had grown to over 280 researchers and research higher degree students.

### **10.4 Extending and Diversifying the Resource Base of the Network**

For the initial five-year funding period, the ARC cash funding is fixed at \$300,000 p.a. Currently guaranteed cash contributions from the Participating Institutions are \$171,000.00 p.a. There may be the opportunity for flexibility in negotiating changes to that level of Participating Institution support.

Initially the focus will be on negotiating with all the universities involving Network Participants to become full member institutions in ARCRNSISS. Other universities may also be invited to join the Network.

Extending and diversifying the resource base of ARCRNSISS during the first five years of operation are most likely to be achieved by:

- increasing the number of universities, departments/centres and individuals that are participating and providing cash contributions

- leveraging cash contributions through the involvement of public organisations, national and state peak industry bodies and businesses through a membership contribution and/or sponsorship of a Network activity or through a partnership arrangement with the Network.

During the period 2007 and 2008, an explicit strategy will be developed and implemented to ensure longevity of the Network and the securing of a funding base for ARCRNSISS beyond 2009. That might include:

- continuing funding from the ARC through the Research Network program if it is extended and/or another ARC program
- the development of an arrangement with Universities in Australia, perhaps through the AVCC, to provide for a capitation membership contribution annually to ARCRNSISS in much the same way that ACSPRI is currently funded.

## **SECTION 11:**

### **REVIEW AND EVALUATION OF ARCRNSISS ACTIVITIES AND PERFORMANCE**

Demonstrating accountability in the use of ARC funds and in the use of both cash and in kind contributions from the Contributing Institutions, along with demonstrating outputs, outcomes, and impacts of Network activities, is an important on-going task for the Network.

#### **11.1 Annual Reporting**

The ARC requires a report each year from ARCRNSISS using a proforma provided by the ARC, and submitted to the ARC through the Host Institution's Office of Research.

The Network also provides annually a report to the Contributing Institutions which details expenditure on Network activities including the cash support received by participants in Network activities from each of the Contributing Institutions and the involvement of people from each Contributing Institution in Network Activities.

ARCRNSISS produces an Annual Report for public access through the Network's web-site, with a limited number of hard copies available for distribution to stakeholders.

The first Annual Report covering the period October 2004 to December 2005 was submitted to the ARC in March 2006. The ARC deemed that report to be satisfactory and did not seek any clarification or revisions.

#### **11.2 Evaluating Network Performance**

Each year the performance of ARCRNSISS is evaluated against a set of Key Performance indicators, providing both quantitative and qualitative assessments, to document and demonstrate the outputs, outcomes and impacts of Network activities. A summary of that performance is incorporated within the ARCRNSISS Annual Report.

A list of Key Performances Indicators, adopted by the Network Strategy and Planning Committee as appropriate potential indicators, is provided below.

##### **Performance Indicators**

###### **A. *Network participation and membership***

1. The number of individual participants (ESRs, ECRs and RHDS) involved in the Network.
2. The number of end users outside the participating universities involved in the Network.
3. The number of formal research centres involved in the Network.

4. The ratio of ESRs to ECRs who are Network participants.
5. Growth year on year in the above.

**B. *Participation in Network conferences and workshops***

6. The number of people participating in the National Conference
7. The number of people participating in the Network's Specialist Workshops
8. the ratio of ESRs to ECRs/RHDS participating in the above.
9. The number of end users/organisations and practitioners involved in the Annual Conference and the Specialist Workshops, and their proportion of total participants.

**C. *Collaboration in bidding for, winning, and conducting research projects***

10. Demonstrating the structure properties of the Network, such as: the number of cross-disciplinary team applications for research projects, that incorporate a SISS approach, for funding from competitive research grant schemes including the ARC; the number of successful outcomes; and the number of on-going funded projects being conducted.
11. The number of cross-disciplinary team projects incorporating a SISS approach, both bid for and won from sources other than competitive research grant schemes, including government, community and business sectors, and the number of ongoing funded projects.
12. The number of end user approaches to the Network and its participants to be preferred bidders/tenderers or asked to undertake applied research/consulting incorporating a SISS approach.

**D. *Engagement of ERCs and PGRS in research projects***

13. The proportion of the above activities (10 and 11) that involve ECRs and/or PGRS.
14. The number of PGRS scholarships supported by research grants facilitated through the activities of Network participants and whose research incorporates a SISS approach.
15. The ratio of ESRs to ECRs in the above collaborative activities (10, 11).

**E. *Facilitating access to research databases, software, analytic tools, etc.***

16. The number of on-line identifiable 'systems' available to researchers as facilitated through the Network.
17. Year-on-year increase in the above.
18. Number of 'hits' on the Network's research data/tools/SDSS websites.
19. Year-on-year increase in the above.

**F. *International linkage***

20. The number of overseas participants in Network activities as referred to in 6 and 7 above.

21. The proportion of research projects for which funding bids are made, received and which are on-going funded, that involve an international collaborator as referred to in 10 and 11 above.
22. The number of Network members who are participants in overseas networks/centres or with overseas researchers in projects in other countries that incorporate an SISS approach.
23. The number of overseas experts working in SISS approaches who are longer-term (i.e. one month or more) visiting scholars to Australia, initiated and/or facilitated by the Network.

**G. *External inputs***

24. The number of external organisations providing data/tools/research facilitation inputs to the Network's activities.
25. The number of external organisations with a formal collaboration/participatory arrangement with the Network.

**H. *Leverage***

26. The total value of both competitive research grants and the total value of other research/grants consultancies in which Network participants are undertaking involving a SISS approach and the ratio of that \$ value to the \$value of ARC support for the Network.

**I. *Research output***

27. The number of research publications that (published and submitted) that incorporate an SISS approach, involving Network participants as authors, by the normal categories—peer reviewed books, monographs, book chapters, journal articles, conference proceedings.
28. The number of conference papers and keynotes addresses presented by Network participants that incorporate an SISS approach.
29. Proportion of the above (27 and 28) that involve ECRs/PGRS.
30. Number of PGRS completions supervised by Network participants whose research incorporates an SISS approach.

**J. *End user adaption/use***

31. The number and nature of end users involved in using research outputs from research undertaken by Network participants that incorporates a SISS approach, and the nature of that involvement.

**K. *Communicating network activities and achievements***

32. The number of web-based summaries of research projects, publications and papers by Network participants incorporating SISS approaches that appear on the Network's website, and the number of 'hits' on those.
33. Year-on-year increase in the above.

34. The number of media 'hits' involving Network participants relating to activities of the Network and the research of the participants incorporating a SISS approach.

**L. *Effective and efficient use of Network funds***

35. Expenditure of Network funds in accordance with the strategic and operational plans as approved by the Network Management Committee, and the degree to which that is achieved within budget.

36. Leveraging ARC funds is measured by the ratio of ARC to all other funding contributions to the Network.

**M. *Network participants' satisfaction/perception of benefits***

37. Conduct annually a survey of Network participants to measure their:

- level of satisfaction with belonging to the Network
- the degree to which the Network is (potentially) enhancing their research development and performance.
- the degree to which they feel engaged in Network activities, especially through the Research Paradigm Forums.

### **11.3 Internal Review and Evaluation of Network Activities and Performance**

The Network Advisory Board is invited each year to comment on the ARCRNSISS Annual Report and provide feedback to the Network Strategy and Planning Committee in evaluating the performance of the Network.

The Network Strategy and Planning Committee is responsible for setting Strategic Directions for the Network and for identifying priorities for Network Activities and operations on an annual basis, and for reviewing performance against the objectives of the Network.

On the basis of those deliberations, this ARCRNSISS Strategic Plan is revised annually, and an Operational Plan is developed annually by the Management Committee and Host Institution Management Office.

### **11.4 ARC Initiated Review of the Network**

It is anticipated that the ARC will instigate a review of the Network during the third or fourth year of funding.

### **11.5 ARC Audit**

In September 2006 the ARC audited the ARCRNSISS at the University of Queensland. That audit process was most instructive for the Network's host Institution Office. The ARC auditors were not critical of any aspect of the

management of the Network and its resources. The audit team visited the Network Host Institution Office and inspected the computerised management systems, including the financial system developed by Network Manger to manage the Network's accounts and track expenditure on all approved Network Activities on a daily basis. There was considerable interest on the part of the ARC auditors in these operational management systems.

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