



Australia and New Zealand
Regional Science Association International
43rd Annual Conference



**CONFERENCE
PROGRAM**

ANZRS AI welcomes participants to its 43rd annual conference, hosted this year on the Cairns campus of CQUniversity. The core theme for this year's conference focuses on:

**WORKING TOGETHER TO GROW: INNOVATIONS
AND DISRUPTIONS IN REGIONAL DEVELOPMENT**

(CQUNIVERSITY, CAIRNS, 4-6 DECEMBER 2019)

ANZRS AI is pleased to acknowledge our conference sponsors.



Australian Government

Department of Infrastructure, Transport, Cities and Regional Development

Bureau of Infrastructure, Transport and Regional Economics



**Agribusiness
& Economics
Research Unit**
LINCOLN UNIVERSITY



WELCOME FROM THE PRESIDENT

This year is the 43rd Annual ANZRSAL Conference and I am delighted that CQUniversity are hosting us on their Cairns campus.

I am very grateful to Dr Delwar Akbar and Prof Lee Di Milia in the School of Business and Law at CQUniversity for their outstanding work to host the conference at Cairns, and to organise an exciting programme of keynote speakers. This will be a conference with something for everyone with an interest in regional policy and practice.

The core theme of our conference is *Working Together to Grow: Innovations and Disruptions in Regional Development*. This theme includes several sub-themes: regional opportunities and international trade; intra and inter-regional supply and value chains; and functional regions.

Among other publication opportunities, participants are welcome to submit a paper presented at the conference to the *Australasian Journal of Regional Studies*.

Our annual conference is an opportunity to renew old friendships and forge new ones. I extend a particularly warm welcome to the many people who have travelled a long distance to participate in the conference, as well as those enrolled in postgraduate research or who have recently completed your degree.

I wish all of you an enjoyable and fruitful conference.

Rolf Gerritsen
ANZRSAL President, 2019



CONFERENCE ROOMS

The plenary sessions are taking place in Room 3.27. In parts of the program involving two sessions, this room will divide into two halves, Room 3.27 and Room 3.28. In one session, the conference will use three rooms; the third room will be Room 3.54, which is beside the other two rooms.

The Keynote Speakers

PROFESSOR YVES ZENOU (MONASH UNIVERSITY)

Yves Zenou is Professor of Economics at Monash University since January 2016. His research interests include: social interactions and network theory, urban economics, segregation and discrimination of ethnic minorities, criminality and education. Yves Zenou was previously a Professor of Economics at Stockholm University, the University of Southampton, UK, and a Visiting Professor at the University of California, Berkeley, the European University Institute and Tel Aviv University. He is currently the Editor of *Regional Science and Urban Economics*, and Associate Editor of the *Journal of the European Economic Association*, the *Journal of Public Economic Theory*, the *Journal of Urban Economics*, the *Scandinavian Journal of Economics*, and *Annals of Economics and Statistics*.



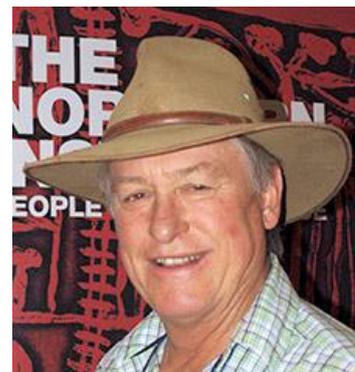
DR ELIN CHARLES-EDWARDS (UNIVERSITY OF QUEENSLAND)



Elin Charles-Edwards is a population geographer and demographer. She is a Senior Lecturer in Human Geography and Deputy Director of the Queensland Centre for Population Research at the University of Queensland, Australia. Her research explores migration, mobility and the ways in which populations vary over space and time. Research interests include temporary population mobility and its estimation, internal migration, and applied demography for planning. She has published widely in academic journals and has undertaken work for the United Nations Population Division and the World Bank. She has an honorary appointment at the Asian Demographic Research Institute, Shanghai University, China.

PROFESSOR ROLF GERRITSEN (CHARLES DARWIN UNIVERSITY)

Since late 2007 Rolf Gerritsen has been a Professorial Research Fellow, at Charles Darwin University. Rolf's research interests are primarily in public policy and he has published in several policy fields, including regional economic development and community resilience. He has been ANZRSIA President since 2018 and will present the ANZRSIA President's Address at this conference.



PROFESSOR JOHN ROLFE
(CQUNIVERSITY, ROCKHAMPTON NORTH)



John Rolfe is Professor of Regional Economic Development in the School of Business and Law at the CQ University at Rockhampton, and a Fellow of the Academy of the Social Sciences in Australia. Professor Rolfe specialises in non-market valuation, regional development, issues in environmental, resource and agricultural economics, agricultural adoption and impact assessment in regional areas. He co-edited two important reference books on non-market valuation and benefit transfer in 2006 and 2015. He has published in a number of discipline areas, including environmental reporting and regional development.

PROFESSOR ALLAN DALE
(JAMES COOK UNIVERSITY)

Allan Dale is a Professor of Tropical Regional Development at the Cairns Institute, James Cook University and a University Fellow with Charles Darwin University's Northern Institute. Allan has a strong interest in integrated societal governance, with a particular focus across the tropical world, northern Australia and the Great Barrier Reef. He leads JCU's contributions to Queensland's Rural Economies Centre of Excellence (RECoE) and the Clean Growth Choices Program, the Human Dimensions of the GBR, the Northern Development agenda and emerging approaches to Collective Impact.



PROFESSOR BRUCE PRIDEAUX
(CQUNIVERSITY, CAIRNS)



Bruce Prideaux is Director of the Centre for Tourism and Regional Opportunities at the Cairns campus of CQUniversity and program director of the Masters of Sustainable Tourism Management. He has a wide range of research interests including protected area tourism, rural tourism, remote area tourism, indigenous tourism, urban tourism, river and canal tourism and climate change. Professor Prideaux holds a Visiting Professorship at Taylors University Malaysia and has authored over 300 journal articles, book chapters and conference papers on tourism related issues. He has published 10 books, the most recent of which looks at climate change issues and global rainforest tourism. Current projects include a book looking aspects of coral reef and how tourism can be used in rural development.

CONFERENCE TIMETABLE

Wednesday 4 December

- 8.30am** **Registration Desk Opens**
- 9.30am** **Welcome to the Conference** **Venue: Room 3.27**
Chair: Rolf Gerritsen
Welcome from ANZRSAI (Rolf Gerritsen, ANZRSAI President)
Welcome to Cairns (Jodie Duignan-George, AVC, CQUniversity Australia, Cairns campus)
Welcome to the conference (Delwar Akbar, Conference Convenor)
- 10.00am** **First Keynote Address** **Venue: Room 3.27**
Chair: Delwar Akbar
Yves Zenou
Spillover Effects in Cities
- 10.40am** **MORNING TEA (Level 3)**
- 11.00am** **Parallel Sessions 1 (Two Streams)**
- 12.30pm** **LUNCH**
- 1.30pm** **Parallel Sessions 2 (Three Streams)**
- 3.00pm** **AFTERNOON TEA**
- 3.30pm** **Second Keynote Address** **Venue: Room 3.27**
Chair: Robert J Stimson
Elin Charles-Edwards
Understanding Temporary Flows and Stocks: A Dynamic View of Australia's Population Geography
- 4.30pm** **Third Keynote Address** **Venue: Room 3.27**
Chair: Khorshed Alam
John Rolfe
Changing Agricultural Supply Chains in Australia to Meet Asian Markets
- 6:00pm** **President's Reception** **Venue: Shangri La Hotel, Cairns**

Thursday 5 December

- 9.00am** **Registration Desk Reopens**
- 9.30am** **Fourth Keynote Address** **Venue: Room 3.27**
Chair: Yogi Vidyattama

Allan Dale
New Policy Directions for Northern Australia
- 10.30am** **MORNING TEA**
- 11.00am** **Parallel Sessions 3 (Two Streams)**
- 12.30pm** **LUNCH**
- 1.30pm** **Special Session on Regional Universities** **Venue: Room 3.27**
Chair: Tony Sorensen

Narelle Pearse
Regional Universities: Our Role in Regional Communities

Maree Franettovich and Robyn Collins
*Growing Mackay Region's Professional Capital; Sustainability through
Collaboration – A Case Study: Engage Mentor Program*
- 2.30pm** **Presidential Address** **Venue: Room 3.27**
Chair: Vince Mangioni

Rolf Gerritsen
*Regional Science and Academic Regional Science in Australia: Discussing
Some Problems and Challenges*
- 3.30pm** **AFTERNOON TEA**
- 4:00pm** **ANZRS AI AGM** **Venue: Room 3.27**
- 6.00pm** **Conference Awards Dinner** **Venue: Shangri La Hotel, Cairns**

We thank the Bureau of Infrastructure, Transport and Regional Economics for sponsoring the Awards at the dinner.

Friday 6 December

9.00am Registration Desk Reopens

10.00am Unlocking Northern Australia: Innovations and Disruptions

Venue: Room 3.27

Chair: Lee Di Milia (Dean, School of Business and Law, CQU)

This is a special session with contributions from:

- Tycho Buningh (Trade Development Manager, Ports North)
- Nick Trompf (CEO, Advance Cairns)
- Noris Carter (CEO, Cairns & Mackay Airports)
- Allan Dale (Cairns Institute, James Cook University)
- Rolf Gerritsen (Northern Institute, CDU)

11.30am MORNING TEA

12.00 noon Concluding Keynote Address

Venue: Room 3.27

Chair: Rolf Gerritsen

Bruce Prideaux

Preparing for Disruption: Strategies for Dealing with the Loss of Significant Tourism Markets due to Climate Change

1.00pm Formal Close of Conference

Venue: Room 3.27

Rolf Gerritsen, ANZRSI President.

CONTRIBUTED PAPERS PARALLEL SESSIONS

	Stream A Venue: Room 3.27	Stream B Venue: Room 3.28	Stream C Venue: Room 3.54
Sessions 1 Wednesday 11.00-12:30	Regional Development: Session 1	Innovation	
Sessions 2 Wednesday 1:30-3.00	Regional Development: Session 2	Spatial Analysis	Local Government
Sessions 3 Thursday 11.00-12.30	Regional Development: Session 3	Regional Wellbeing	

Parallel Sessions 1

Wednesday 4 December, 11:00am-12:30pm

Session 1A Regional Development: Session 1

Chair: Delwar Akbar

Location: Room 3.27

HOSSAIN, Md Rahat, Delwar Akbar and Azad Rahman

Innovation and Adoption of Digital Technologies in Australia's Horticulture Sector: A Review

GERRITSEN, Rolf

A New Agenda for Australian Regional Scientists? The Regional Effects of the Policies and Programs of the Federal Government

AKBAR, Delwar, Azad Rahman, Peggy Schrobback, John Rolfe, Susan Kinnear and Surya Bhattaraizad

Working to Grow Together: Horizontal Collaboration for Horticulture Production in Queensland

Session 1B Innovation

Chair: Bruce Wilson

Location: Room 3.28

WILSON, Bruce

The Foundational Economy and Smart Specialisation

HASSAN, Nur, Delwar Akbar and John Rolfe

Technological Innovation in Aquaculture Supply Chain: An Emerging Field of Business for Northern Australia

HEFFERAN, Mike, John Montgomery and Andrew Fern

Forty Years On... What are the Regional Development Lessons for Incubation Facilities? Experience, Government Policy and Sustainable Economic Growth

Parallel Sessions 2

Wednesday 4 December, 1:30pm–3:00pm

Session 2A Regional Development: Session 2

Chair: Vince Mangioni

Location: Room 3.27

MANGIONI, Vince

Land Acquisition at the Urban Fringe: Assessing Compensation for Infrastructure Projects

PLANDES, Daryl

The Role of 'Social Licence to Operate' in Fostering Sustainable Businesses and Sustainable Regional Development

SORENSEN, Tony and Robyn Eversole

An Evolvagility Approach to Regional Development

Session 2B Spatial Analysis

Chair: John Madden

Location: Room 3.28

STIMSON, ROBERT J. AND Alistair Robson

Endogenous Employment Performance of Non-Metropolitan Functional Economic Regions Across Australia, 2006-2016

RAHMAN, Zillur, Yogi Vidyattama, Delwar Akbar and John Rolfe

Spatial and Temporal Contexts of Changes in Median House Prices in Australian Metropolitan Cities: A Case Study of the West of Melbourne

HOSSAIN, Md Rahat and Delwar Akbar

Comparing the Household Solar System Installation Patterns between Brisbane Metropolitan Region and Regional Queensland

Session 2C Local Government

Chair: Yogi Vidyattama

Location: Room 3.54

Susilo, Anggun, Yogi VIDYATTAMA and Dewa Ayu Putu Eva Wishanti

Water and Sanitation Program in Decentralized Eastern Indonesia: The Roles of Community and Social Dynamics

BOWREY, Graham, Leanda Garvie, Michelle Joubert and Gregory Jones

Local Council CSR Activities: Leadership or Acts of Legitimation

MacLean, Damien, Deborah Grant and Bligh GRANT

Local Government and Indigenous Government: The Challenges of Ngaanyatjarraku Shire Council, Western Australia

Parallel Sessions 3

Thursday 5 December, 11:00am–12:30pm

Session 3A Regional Development: Session 3

Chair: **Greg Jones**

Location: Room 3.27

JONES, Greg, Dorothea Bowyer, Graham Bowrey and Ciorstan Smark

Survival of the Fittest: Challenges for Regional Aviation to Serve the Needs of Australian Regional and Remote Communities

HAQUE, Sabrina, Delwar Akbar and Susan Kinnear

Stakeholders' Perceptions of Extreme Weather Impacts on Tropical Fruit Businesses in Central Queensland, Australia

RAHMAN, Azad, Delwar Akbar and John Rolfe

Every Community Wants an Airfreight Facility: Is this a Viable Regional Agricultural Supply Chain Development Option for Central Queensland?

Session 3B Regional Wellbeing

Chair: **Khorshed Alam**

Location: Room 3.28

ALAM, Khorshed

'The Tyranny of Distance': Is eHealth a Solution for Healthcare Disparities in Australian Rural and Remote Communities?

SAFINA, Ummey Fatima and Greg Jones

A Review on the Trade-off between Economic Development and Negative Externalities Generated by a Coal-fired Power Station in Regional Queensland: A Case of Gladstone Power Station

Note: The third paper originally scheduled for this session has been withdrawn.

ABSTRACTS

AKBAR, Delwar

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Session 1A

Title: Working to Grow Together: Horizontal Collaboration for Horticulture Production in Queensland

Co-authors: Azad Rahman, Peggy Schrobback, John Rolfe, Susan Kinnear and Surya Bhattarai

Abstract: The horticulture sector in Queensland is highly diverse, producing tropical fruits, many varieties of vegetables, cucurbits and nuts. There is potential to expand horticulture production with more land becoming available. However, domestic demand is saturated in peak seasons. Exporting high value horticulture produce to Asian markets would help underpin higher prices and future growth of Queensland horticulture industries. Horticultural products are not simultaneously grown in all geographic regions due to the variations in weather, water availability and soil condition. This study examines the potential for cross-regional collaboration between farmers (i.e., horizontal collaboration) to ensure a continuous and consistent supply chain of horticulture products over six to eight months through a case study of mango production. It used a qualitative approach consisting of a stakeholder workshop supported by literature review and face to face scoping interviews. While there were some discrete collaborations among mango farmers in some regions, a cross regional supply chain collaboration supported by the industry and other stakeholders would improve farmers' return on investment and growth in the short to medium term.

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Session 3B

Title: 'The tyranny of distance': Is eHealth a solution for healthcare disparities in Australian rural and remote communities?

Abstract: The eHealth strategies are being framed and adopted to assist remote, rural and regional Australians' access to better quality healthcare and therefore overcome what is known as 'the tyranny of distance'. However, to date, no Australian studies have focused on equity and access challenges faced by residents in rural and regional communities. Therefore, this study aimed to carry out a comprehensive analysis of factors influencing the adoption of eHealth services from a regional community perspective. A cross-sectional questionnaire-based household survey was conducted of 390 randomly selected adults from the Western Downs Region in Southeast Queensland, Australia. A multivariate logistic regression model was also performed to identify the significant determinants which increase eHealth service access in regional Australia. Insights into the drivers as well as the barriers to eHealth readiness and adoption are extremely helpful for policy makers, local and national governments as well as public and private health service providers to support the design and implementation of other efficient eHealth strategies.

BOWREY, Graham
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Session 2C

Title: Local Council CSR Activities: Leadership or Acts of Legitimation

Co-authors: Leanda Garvie, Michelle Joubert and Greg Jones

Abstract: Local councils often take a lead role in providing direction and support for their communities. This study, which covers the period from 2014 to 2018, explores the influence exerted and leadership provided by a sample of regional councils in the area of corporate social responsibility (CSR) and CSR Reporting. The methodology applied in this study is based on a thematic analysis of the CSR activities and disclosures of these councils. The thematic analysis, which is guided by the outcomes of a social audit, is assessed through the theoretical lens of the social-constructionist perspective of legitimation. The main finding is that while some regional councils are taking a leading role in CSR activities in their communities, these activities and disclosures could be considered more aligned with wanting to be perceived as legitimate within their communities rather than leading their communities.

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Second Keynote Address

Title: Understanding Temporary Flows and Stocks: A Dynamic View of Australia's Population Geography

Abstract: The population geography of Australia is often perceived as (relatively) static, changing slowly in response to natural increase and net migration. In fact, populations are in continual flux due to temporary population mobility, defined as movements which are one night or more in duration but do not entail a change in usual residence. Temporary movements are undertaken in response to a range of demographic, social, economic and environmental stimuli and facilitated by transport technology. They are critical to the functioning of many regional economies and are a means by which individuals can meet disparate goals in space. Temporary populations also drive significant flux in small area populations, and there is a demand for estimates to serve as the denominator for health, crime and other statistics, to assist in emergency preparedness and response, and for the planning and provision of local goods and services. This paper reports on the work of the TEMPO project (Estimating Temporary Populations in Australia), an ARC Linkage Project with the Australian Bureau of Statistics. It begins by exploring the complex dynamics of temporary population mobility in Australia, before discussing emerging opportunities for measurement using "big data". The paper goes on to present a set of experimental estimates of temporary populations for Statistical Area Level 3 (SA3) in Australia. The paper concludes by arguing for better integration of temporary population mobility into our understanding of Australia's population, economic and social geographies.

DALE, Allan
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Fourth Keynote Address

Title: New Policy Directions for Northern Australia

Abstract: Over the last 150 years, there have been multiple policy experiments concerning the development of northern Australia. The 2015 release of the Australian Government's Whitepaper on Developing Northern Australia is a recent example. With some four years of implementation behind this agenda, there is value in exploring both the key aspects of success to date, and the key emerging challenges. This paper explores these challenges across different scales within the north to help contextualize the potential for the success of the Whitepaper's original policy intent. This analysis allows the paper to then explore key policy reforms and initiatives that could be better applied to weave a more inclusive and sustainable set of development outcomes. These particularly focus on the need to reconcile three well understood tensions that operate at landscape-scale across the north (i.e. economic development, environmental management and the protection and promotion of Indigenous rights and interests in country). Key priorities for systemic governance reform are also considered, starting from the grass roots strengthening of Indigenous-led and local governance systems, through to genuine bipartisan and cross-jurisdictional cooperation on policy and investment priorities.

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Special Session

Title: Growing Mackay Region's Professional Capital; Sustainability through Collaboration – A Case Study: Engage Mentor Program.

Co-author: Robyn Collins

Abstract: The Engage Mentor Program is a case study in regional professional capacity building, undertaken by CQUniversity Mackay School of Business and Law, in collaboration with a major industry partner and the region's business community. This Program aims to build regional professional capital and retain local business students. The Engage Mentor Program connects business students with the region's business professionals in a dedicated Mentee-Mentor relationship. Mentees also participate in tailored professional development focussing on employability skills, industry knowledge, and workforce transition. The design capitalises on local assets: an Australia wide University, established collaborative relationships and a shared commitment to developing professional capital to meet regional workforce needs. Outcomes to date indicate that the Engage Mentor Program is an effective model for growing professional capital. The challenge is establishing a sustainable collaborative model readily transferrable to other regions.

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Session 1A

Title: A New Agenda for Australian Regional Scientists? The Regional Effects of the Policies and Programs of the Federal Government

Abstract: The explicitly regional programs – e.g. “Better Cities”, drought relief and Northern Development – of Australia’s Commonwealth Government are rightly the subject of analysis by Australian regional scientists. But, Amanda Walsh (*Globalisation, the State and Regional Australia*, Sydney University Press) aside, little attention has been paid to the regional effects of what appear to be “mainstream” government programs. I look at several such programs (e.g. local government general purpose grants, tariffs, tax expenditures, etc.) to assess their “regional” impacts. This line of inquiry has some importance for revealing the equity and efficiency impacts of ostensibly non-regional programs and has implications for Australian governance.

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Session 2C

Title: Local Government and Indigenous Governance: The Challenges of Ngaanyatjarraku Shire Council, Western Australia

Co-authors: Damien MacLean and Deborah Grant

Abstract: Scholarship examining the local government systems of Australia has overwhelmingly been concerned with multi-purpose, unitary authorities provided for under the respective local government acts of the sovereign jurisdictions. The research presented here focuses on the Shire of Ngaanyatjarraku in the far east of Western Australia. First, against a backdrop of complex intergovernmental relations, the paper provides an historical account of the incorporation of Ngaanyatjarraku Shire in 1993, detailing relations with the Shire of Wiluna and the Ngaanyatjarra Council Aboriginal Corporation. Second, it provides an account of changed funding arrangements that occurred with the introduction of the ‘Community Development Program’ in 2014. Third, it provides an account of the Shire of Ngaanyatjarraku’s claims of discrimination against the Commonwealth. We argue that all of the aforementioned issues of local government are considerably more vexatious for the Shire of Ngaanyatjarraku, with unique challenges, while still holding out the possibility of local self-determination.

HAQUE, Sabrina
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Session 3A

Title: Stakeholders' Perceptions of Extreme Weather Impacts on Tropical Fruit Businesses in Central Queensland, Australia

Co-authors: Delwar Akbar and Susan Kinnear

Abstract: Extreme weather events (EWEs) have detrimental impacts on tropical fruits, disrupting the supply chain and business systems of farmers and other stakeholders. The central and eastern parts of Queensland are vulnerable to EWEs due to its subtropical coastal climate; yet this region produces most of Australia's tropical fruits. This research takes a novel approach to understanding the impacts of EWEs on three tropical fruits (pineapple, lychee and mango), by combining information from a range of different stakeholder types to unearth information about farming businesses, supply chain patterns and adaptation strategies. This study adopted a qualitative research approach, conducting face-to-face interviews with nine relevant stakeholders followed by thematic analysis. The research found that tropical fruit production was affected by extreme weather, and EWEs have enduring consequences at all levels of the supply chain, as well as directly impacting individual fruit farming businesses. Fruit producers and stakeholders have been utilising adaptation strategies to minimise losses, however, greater collaboration within each level of the supply chain could help better manage and reduce the negative impacts associated with extreme weather.

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Session 1B

Title: Technological Innovation in Aquaculture Supply Chain: An Emerging Field of Business for Northern Australia

Co-authors: Delwar Akbar and John Rolfe

Abstract: Aquaculture has been experiencing rapid growth over the last decade both in Australia and overseas. Australia is not self-sufficient in sea food demand and imports about half of domestic consumption from overseas. Aquaculture development is highly dependent on advanced technologies and sophisticated management of the supply chain systems. This paper aims to analyse the different technological innovations required for aquaculture development in northern Australia through some examples from north and far north Queensland. This study found that most technologies are available for large scale aquaculture development but there is scope of further technological innovations for small and medium scale aquaculture farmers in north and far north Queensland.

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Session 1B

Title: Forty Years On... What are the Regional Development Lessons for Incubation Facilities? Experience, Government Policy and Sustainable Economic Growth

Co-authors: John Montgomery and Andrew Fern

Abstract: It is now some 40 years since a series of information and communication technology (ICT) breakthroughs and clustered, start-up companies emerged, principally from the Bay Area, San Francisco, to underpin what became known as 'the knowledge revolution'. This continues and compounds to the contemporary environment and across all OECD countries. The obvious economic advantages of involvement in these new sectors were not lost on the various levels of governments who attempted to emulate the Californian success. A range of new government's initiatives were typically put in place which included the provision of incubation facilities of various types and in a range of locations to support new companies through their vulnerable, early stages. Drawing from a range of case studies and experiences, interviews and published literature, this paper provides an overview of such incubation initiatives in Australia in recent decades. With the benefit of hindsight, it identifies their key strategic and operational characteristics and, importantly, the factors that appear to have contributed to models that have proven sustainable in Australian regions.

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Session 1A

Title: Innovation and Adoption of Digital Technologies in Australia's Horticulture Sector: A Review

Co-author: Delwar Akbar and Azad Rahman

Abstract: Australia's horticulture sector exports vegetables, herbs, nuts and fruits globally, particularly to Asian markets. This export market is worth about 3 billion dollar each year. However, the sector has been facing several challenges such as innovation and adoption of digital technologies relevant to both on-farm and off-farm management and securing seasonal labour. This paper reviews the digital technologies that can enhance the farm productivity and improve communication with the supply chain actors and the customers. A combination of integrative and meta-analysis of the exiting literature has been used as the review method. This study found a range of technologies that are in use in Australia over the last thirty years in horticulture sector to improve productivity, increase export value and increase farm gate value. However, further innovation and adoption of digital technologies is required to make commodities more competitive in the international markets, particularly in the Asian markets.

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Session 2B

Title: Comparing the Household Solar System Installation Patterns between Brisbane Metropolitan Region and Regional Queensland

Co-author: Delwar Akbar

Abstract: More than 30 percent of Queensland houses have a rooftop solar system (photovoltaic; i.e., PV). However, it is not known what factors affect solar power installations between Brisbane Metropolitan region and regional Queensland' residents. This study examines the PV installations trend and patterns between Brisbane Metropolitan region and regional Queensland. It also identifies key factors affecting the variation of PV installations between metropolitan and regional households. A quantitative methodology supported by secondary data and autoregressive integrated moving average (ARIMA) model is adopted. This study predicts that PV installations in the Brisbane metropolitan area will increase after 2020. On the other hand, PV installations in regional Queensland is on the peak now and would decline in 2020 and then a regular trend would appear. In addition, the study found a positive relationship between PV installations and the separate houses with three or more bedrooms. These findings can help in future PV expansion policy and planning.

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Session 3A

Title: Survival of the Fittest: Challenges for Regional Aviation to Serve the Needs of Australian Regional and Remote Communities

Co-authors: Dorothea Bowyer, Graham Bowrey and Ciorstan Smark

Abstract: Privatisation of airports was intended to be positive for rural and regional Australia. Airlines and other airport users have expressed concern that airport operators are privately controlled monopolies (Local Councils), with little regard for the welfare of airport users and communities, taking a profit perspective in contrast to provision of community services. Further there is evidence that government departments accept there are significant economic benefits associated with development of regional areas and that accessibility for regional and remote communities is a matter of general equity and that they could assist airport operators to be more accountable and responsible for reducing their costs by efficiency gains. It is argued through Rawls (2001) Theory of Justice, that government intervention is necessary to control the dominance of privatised airport operators, provide equality of liberties and opportunities, and safeguard the rights of the least-advantaged citizens.

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Session 2A

Title: Land Acquisition at the Urban Fringe: Assessing Compensation for Infrastructure Projects

Abstract: As cities develop and expand, moving through the phases of urbanization and re-urbanisation, the impact on existing residents and businesses results in the inevitability of land acquisition needed to support emerging land uses and infrastructure. This paper examines the purposes for which land is compulsorily acquired in Australia, and the evolving complexities in achieving this objective. Cases are examined in identifying the purposes for which land is acquired and a survey is reviewed which encompasses the partial and total acquisition of land for a large infrastructure project. These case studies, survey and recent changes in land acquisition policy provide a basis for achieving acquisition by agreement, which aids in expediting infrastructure delivery. The paper's contribution is to develop a framework that expands on options for reinstatement in place of monetary compensation and defines the factors to be included under the heads of compensation for disturbance and solatium.

PEARSE, Narelle
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Special Session

Title: Regional Universities: Our Role in Regional Communities

Abstract: Internationally, Universities are recognised as major actors in regional development through the provision of knowledge, skills, and research outcomes; however, comparatively little is known of Australian regional universities. As the Australian higher education sector faces greater competition and decreased public funding, and regional communities struggle with population decline, it is critical to consider how regional universities may simultaneously achieve their own stability, as well as drive the sustainability of their footprint communities through their potential role in initiatives such as regionalisation. Utilising the concept of the 'triple helix', one-on-one interviews with thirty experts were conducted to validate the eight university functions, or outputs, as published by Goldstein and colleagues in 1995. The experts were drawn from university, government and industry sectors. The interviews explored their interpretation of the functions of regional universities, the impacts these functions have on regional communities, and the level of influence the university has on regional outcomes. The study offers a new understanding of the role and impact that Australian regional universities may have in regionalisation and the success of their communities.

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Session 2A

Title: The Role of 'Social Licence to Operate' in Fostering Sustainable Businesses and Sustainable Regional Development

Abstract: Businesses contribute significantly to the socio-economic development of regions by generating revenues, creating jobs and stimulating infrastructure development. Following the UN 2030 Agenda for Sustainable Development, sustainable regional development addresses and balances three dimensions: economic, social and environmental. If regional businesses are to assist in achieving sustainable regional development, they too must work towards economic, social, and environmental sustainability. Social licence to operate (SLO), a concept that emerged from the extractive industries, can be a suitable framework for sustainable business development. SLO denotes ongoing acceptance or approval of a firm's activities by different stakeholder groups. Businesses that have an SLO face minimal stakeholder resistance and create goodwill that enables them to have support for subsequent projects. By employing an instrumental approach, this paper argues that if regional businesses achieve social, economic and environmental sustainability through SLO, they can foster sustainable regional development.

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Concluding Keynote Address

Title: Preparing for Disruption: Strategies for Dealing with the Loss of Significant Tourism Markets due to Climate Change

Abstract: Climate change has the potential to cause serious disruptions to key markets in nature-based tourism destinations such as Cairns. The Great Barrier Reef (GBR), heavily promoted as a key selling point in both domestic and overseas markets, is under threat from further coral bleaching events of the type that occurred in 2016 and 2017. The 2019 GBR Outlook Report produced by the Great Barrier Reef Management Authority downgraded the status of the GBR from 'poor' to 'very poor'. This may lead to a review of the GBR's status as a World Heritage Area when the UNESCO World Heritage Committee meets in 2020. Similar concerns are expressed by the Wet Tropics Management Authority, which has responsibility for managing the Wet Tropics Rainforests of Queensland World Heritage Area. Preparing for significant market disruption is essential but the tourism industry and the destination as a whole has yet to consider what the loss of key markets may mean in terms of visitor numbers and employment. This presentation examines possible strategies for tourism destinations to prepare for the loss of significant visitor markets as an outcome of climate change.

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Session 3A

Title: Every Community Wants an Airfreight Facility: Is this a Viable Regional Agricultural Supply Chain Development Option for Central Queensland?

Co-authors: Delwar Akbar and John Rolfe

Abstract: Central Queensland (CQ) produces a range of high-value perishable agricultural commodities (HVPACs) with high demand in the Asian markets. Perishable commodities have a short shelf life, so a well-developed cold supply chain with air freight facilities is required for transport to international markets. This paper examines the supply chain viability of air freight facilities in central Queensland. It used a mixed methodology consisting of a literature review, a stakeholder workshop, qualitative and quantitative data analysis. This study found that 68% and 11% of beef and horticultural production respectively are exported from the CQ region. Potential issues were identified. Most participants were looking for improvement of the existing airport into an export-oriented business hub. However, supply data analysis indicates that the existing supply of horticultural products in CQ is insufficient to meet international market demand. It was suggested that the development of inter-regional collaboration and horizontal collaboration among producers will enable CQ to be a potential HVPACs exporting zone. To access international markets, the importance of airfreight facility is pivotal.

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Session 2B

Title: Spatial and Temporal Contexts of Changes in Median House Prices in Australian Metropolitan Cities: A Case Study of the West of Melbourne

Co-authors: Yogi Vidyattama, Delwar Akbar and John Rolfe

Abstract: The median house prices in Australia have been rising faster than disposable income over the last decade, especially in the metropolitan capital cities. Nevertheless, the house price and its growth have varied considerably across locations in these metropolitan cities. This study examines the spatial and temporal variations in median house prices in metropolitan cities through a case study of the west of Melbourne city. This study used quantitative methodology supported by the geographic information system (GIS). This study found the different median house price clusters with a significant relationship to public amenities such as hospital locations, access to the workplace, access to shopping, access to medical facilities and public transport terminals. The distance from CBD (Central Business District) also played an essential role in the price increase. These findings have implications for future urban planning in Melbourne.

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Third Keynote Address

Title: Changing Agricultural Supply Chains in Australia to Meet Asian Markets

Abstract: Supply chains in Australia represent the mechanisms used to coordinate the production and supply of food through to consumer markets, including both domestic and overseas markets. The analysis of supply chains typically focuses on the roles and linkages between individual businesses through different stages of the supply chain, including the prices and values captured at each level through the chain. Yet supply chains are increasingly driven by external factors, such as globalisation, regulation, technology change and consumer concerns around factors such as health. The current and potential growth in Asian markets provides opportunities for Australian agriculture, particularly in northern Australia where there is a large focus on exports. Yet there are a number of production, policy and political barriers to expanding production for food exports. This talk covers three broad topics. The first is to outline a framework that can be used to classify and analyse agricultural supply chains in Australia, with a focus on those delivering food to Asian markets. The second is to identify and analyse some of the current forces on supply chains that generate both pressures and opportunities, while the third is to discuss the implications that these have for future agricultural trade between Australia and Asia.

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Session 3B

Title: A Review on the Trade-off between Economic Development and Negative Externalities Generated by a Coal-fired Power Station in Regional Queensland: A Case of Gladstone Power Station.

Co-author: Greg Jones

Abstract: Gladstone Power Station (GPS) is the largest coal-fired power station in Queensland. This study examines the trade-off between economic development and negative externalities generated through coal fired power stations through a case study of GPS. It adopted a mixed methodology supported by secondary data and literature. GPS makes a significant contribution to the Gladstone community as most employees stay and spend money locally. As well, GPS sources most maintenance services and equipment from local suppliers. Additionally, GPS operates as a long-run-profit-maximising monopolist instead of looking at short-run-profit maximisation, hence they are motivated to minimise environmental impacts. However, GPS is the largest contributor to emissions of CO₂, nitrogen oxides and sulphur dioxide in Gladstone. GHG are more prevalent in the Gladstone area compared to other areas of regional Queensland. Therefore, this study recommends a step wise transformation of coal-fired power station toward clean coal technology and/or socially acceptable market mechanisms to reduce the externalities.

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Session 2A

Title: An Evolvagility Approach to Regional Development

Co-author: Robyn Eversole

Abstract: Recent business literature has focused much on the agile corporation, one that is able to innovate rapidly in a high-tech world where increasingly the consumer is king. Agile businesses frequently innovate from the bottom up, where short-term teams develop innovative ideas and recommend implementation strategies. Agile processes that accelerate business evolution have recently been termed Evolvagility, a powerful culture system driving uncertain futures in a VUCA world. This focus on culture resonates with recent economic research by the likes of Kahneman and Thaler. In our view this slate of ideas can, and should, be applied to regional development strategy. Our paper focuses on potential processes shaping agile regional business environments. In short, a major new and crucial research agenda is opening up focusing on people's values, cultures, behaviours, and leadership styles. This paper focuses on how we might go about exploring this critical behavioural agenda.

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Session 2B

Title: Endogenous Employment Performance of Non-Metropolitan Functional Economic Regions Across Australia, 2006-2016

Co-author: Alistair Robson

Abstract: Regional development has been an issue of considerable policy concern for regional Australia for some decades, as it is evident that some regions perform well while others lag or are in decline. This paper addresses the endogenous employment performance of Functional Economic Regions (FERs) that are located beyond the big capital city metropolitan regions across what is referred to as 'regional Australia'. The analytic tool Shift-Share Analysis (S-SA) is used to derive a measure of endogenous regional employment performance across the decade 2006-2016. The regional (or differential) shift component in the S-SA is used as a surrogate measure of that performance, revealing wide spatial variation in the patterns of endogenous employment performance across regional FERs. Regression modelling is used to identify factors that might explain the evident spatial variations in that performance. Finally, implications of the findings for regional development policy are discussed.

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Session 2C

Title: Water and Sanitation Program in Decentralized Eastern Indonesia: The Roles of Community and Social Dynamics

Co-authors: Anggun Susilo and Dewa Ayu Putu Eva Wishanti

Abstract: The recent decentralization in Indonesia was expected to play a big role in development programs that address local issues including water and sanitation. However, the lack of capability of local governments could be a barrier to deliver adequate services. This research analyses water and sanitation issues in Eastern Indonesia to see how the community in the poorer regions may deal with the issue. Based on survey, in-depth interviews and using qualitative methods, this research shows that the local government still holds a very important role in the delivery. This is despite the active involvement of NGOs and local communities.

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Session 1B

Title: The Foundational Economy and Smart Specialisation

Abstract: Innovation, understood as the process of collective problem-solving to generate new products or processes, is recognised widely as a necessary resource for delivering prosperity. Over the past decade, the European Union has promoted adoption of a Smart Specialisation Strategy as a necessary condition for access to the Cohesion Funds for innovation, and many regions in other parts of world have explored its relevance. However, the struggle of many regions to engage with the Smart Specialisation process has led to calls to focus more particularly on the Foundational Economy as the basis for radical social innovation. On initial inspection, the concept of Foundational Economy and the precepts of Smart Specialisation appear to be deeply contradictory. However, it is possible to develop a much more nuanced appreciation of how the two approaches complement each other. Place-based organisational resources (analytical and process expertise, in particular) and collaborative relationships are necessary for the realisation of innovation opportunities in both processes.

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First Keynote Address

Title: Spillover Effects in Cities

Abstract: We estimate the direct and spillover effects of a large-scale early childhood intervention on the educational attainment of over 2,000 disadvantaged children in the United States. We show that failing to account for spillover effects results in a severe underestimation of the impact. The intervention induced positive direct effects on test scores of children assigned to the treatment groups. We document large spillover effects on both treatment and control children who live near treated children. On average, spillover effects increase a child's non-cognitive (cognitive) scores by about 1.2 (0.6 to 0.7) standard deviations. The spillover effects are localized, decreasing with the spatial distance to treated neighbors. Our evidence suggests the spillover effect on noncognitive scores are likely to operate through the child's social network. Alternatively, parental investment is an important channel through which cognitive spillover effects operate. We view our results as speaking to several literatures, perhaps most importantly the role of public programs and neighborhoods on human capital formation at an early age.

Note: Some abstracts have been lightly edited for length to fit the space constraints of the conference program.

