Rethinking Social Housing: Effective, Efficient, Equitable

Final Report

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1.   EXECUTIVE SUMMARY

The **Sustainable Built Environment National Research Centre (SBEnrc) project: Rethinking Social Housing: Effective, Efficient, Equitable** aims to develop a **Strategic Evaluation Framework (E6)** for social housing delivery that can be used by policy makers to determine the most cost-effective program delivery options. This seed project investigates the housing and tenant outcomes of different delivery mechanisms, as well as indirect non-housing outcomes that arise from different mechanisms. This will be explored through the lens of productivity, in terms of an array of benefits including tenant, macro-economic, fiscal and non-economic perspectives. This is a broad-based approach with a focus on practical outcomes which can potentially contribute to outcomes-based contracts against which performance can be effectively validated. Further information about the project can be found at www.sbenrc.com.au.

Key findings presented in this report include:

➢ The *E6 Strategic Framework* – exploring the benefits and costs of social housing through the four lenses of the tenant; the macro-economic costs and benefits; the fiscal perspective, and the non-economic focus (environmental and social capital).
➢ *Outcomes and Indicators Matrix* – drawing on academic and industry literature, the project team has developed a comprehensive set of outcomes and over 180 indicators across the *nine domains of community, economy, education, employment, environment, health and well-being, housing, social and urban amenity*. Initial prioritisation of these outcomes and indicators, with our partners, is also discussed.
➢ An understanding of the data required and available in Australia to support this framework
➢ A *methodology for attribution* which aims to provide robust links between indicators and outcomes, drawing on the long tradition of health research
➢ A *methodology to guide return on investment (ROI) apportionment* across these indicators
➢ A *pathway to further research* developed in consultation with project partners to consolidate findings of this project

2. INTRODUCTION AND OVERVIEW

The key objective of this project is to develop a strategic evaluation framework for social housing delivery (see previous research reports at http://www.sbenrc.com.au/research-programs/1-31-rethinking-social-housing-effective-efficient-equitable-e3/). This E6 Framework comprises four key elements:

Outcomes &Indicators Matrix	• for each of the 9 objectives: community engagement; education; employment; environment; economic; health & well-being; housing; social; urban amenity
Associations / Causal links analysis	• establish methodology • identify existing verified links • gap analysis • future expert panel to establish associations and/or causal links
ROI allocations	• social and economic • housing and non housing • using SROI, SCBA and WVA initially as basis for gap analysis (see Section 3)
Data sources	• identify existing secondary sources • gap analysis • indentify future primary data gathering opportunities

The following 3 reports are being presented to the PSG. These will then be finalised and consolidated into the Final and Industry Reports.

i. Indicator development and data sources including indicator sets for the 9 domains.

ii. Urban systems, health and well-being - associations and causality.

iii. Exploring Return on Investment - including available ROI information for the indicator set.

It is not possible in the context of this current project to provide a comprehensive account of each of these elements, due to the complexity of this undertaking, but it is anticipated that SBEnrc extension funding (*Valuing Social Housing*) will enable this.

The Framework developed as a key early deliverable of this project (**Figure 1**) is innovative in that it links this analysis to productivity, at several levels, including tenant outcomes, macro-economic and fiscal outcomes, and in terms of resource use and environmental benefits.

Maclennan (2015) recently provided an appropriate definition of productivity as a measure of the effectiveness of the use of resources in the production of defined outputs (Maclennan 2015).

Figure 1: E^6 Framework - conceptual framework for proposed policy-based approach to social housing
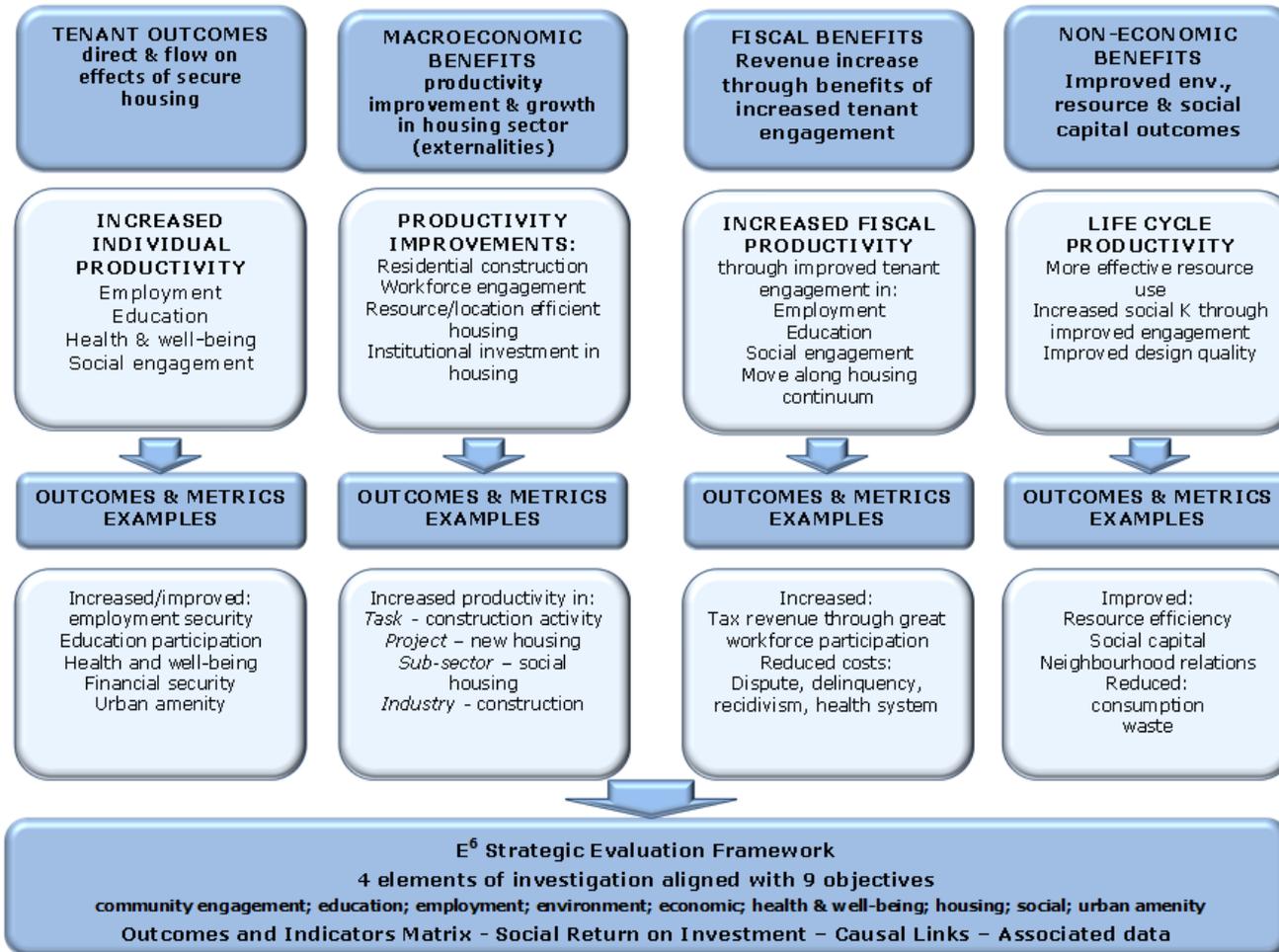
3. THE ROLE OF THE CONCEPTUAL FRAMEWORK

The role of the conceptual framework is to provide an explicit structure within which thinking can take place, and through which to communicate the results of thinking '(they) provide a language and frame of reference through which reality can be examined and lead theorists to ask questions that might otherwise not occur' (Judge et al. 1995 as referenced in Knol, Briggs et al. 2010). Knol, Briggs et al. (2010) goes on to outline various purposes for conceptual frameworks (citing Joffe and Mindell, 2006) which include: motivating discussion and platform for debate; scaffolding for detail problem definition; providing basis for planning and assessment; and to compare and evaluate outcomes. **Table 1** provides explanation of the role of each of the three levels of categorisation.

Table 1: Taxonomy of conceptual frameworks and their frameworks (Knol, Briggs et al. 2010)

Taxonomy of frameworks	Form
LEVEL 1: Structural frameworks	Relatively simple pictorial representation or description of the system under consideration and its important domains.
LEVEL 2: Relational frameworks	Chain- or web-like structures of the key variables within the system and the way these interrelate through logical or functional links
LEVEL 3: Operational models	Detailed operational model of the system under consideration, as a basis for analysis.

To help categorise the role of frameworks they provide the following illustration **(Figure 2)**. The annotations (in clouds) have been added to provide a link to our current research.

In practise this hierarchy can be effectively implemented through an organisation's strategic through to operational management approach, effectively demonstrated through **Figure 3**.

Figure 2: Hierarchy of 3 levels of framework application – adapted from (Knol, Briggs et al. 2010)
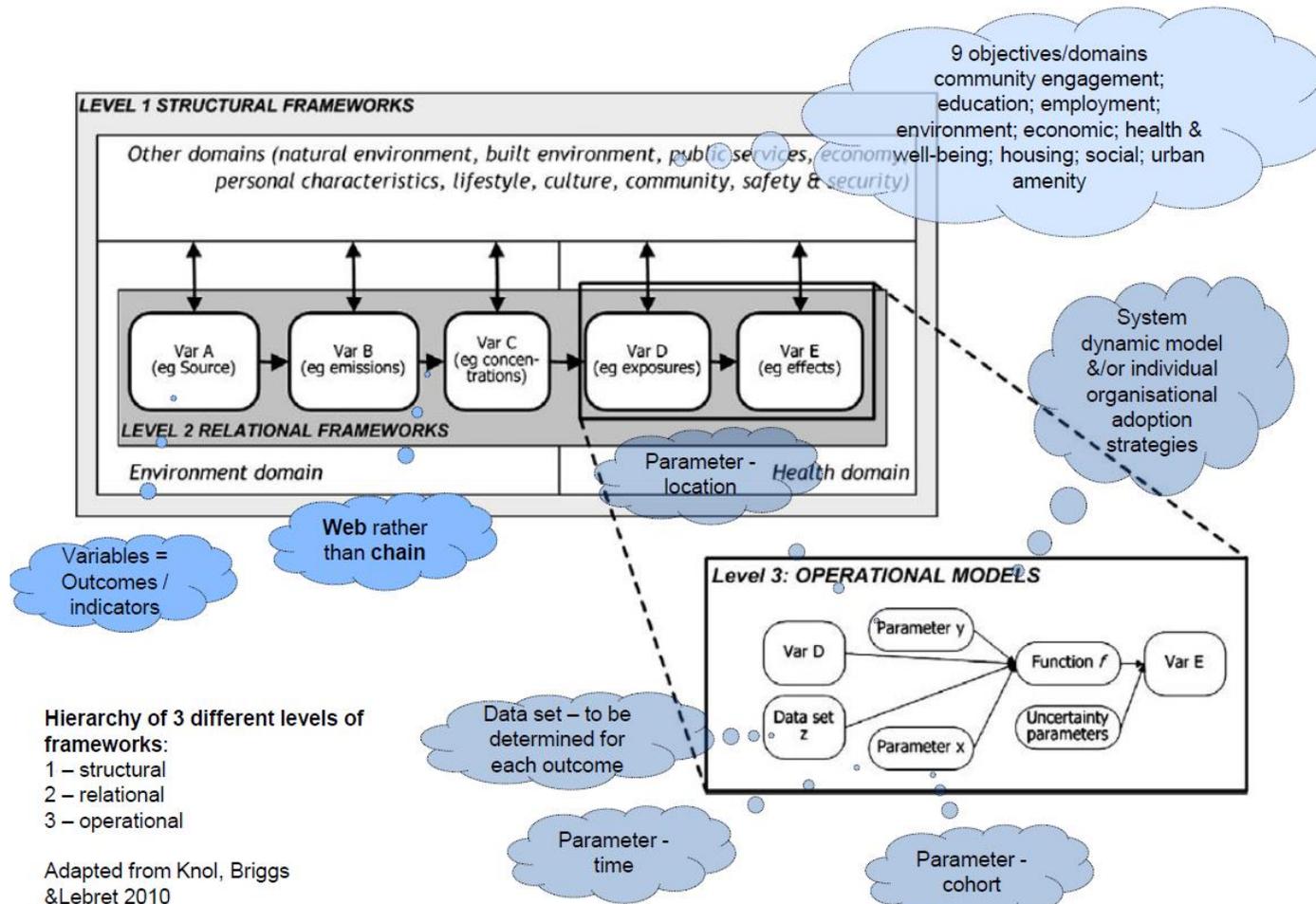
Figure 3: For example - The Salvation Army, Oasis Support Network (Oasis Services 2015)

4. THE OUTCOMES AND INDICATOR MATRIX

The **Outcomes and Indicator Matrix** is the result of an extensive literature review over a twelve month period in which the researchers have drawn together previously used indicators from different disciplines that have links with social housing. The indicators have been sorted and placed into nine separate domains: employment, education, health and well-being, social, urban amenity, community, economic, and housing objectives.

As part of researching these indicators and developing the **Indicator Matrix**, this research investigated the broad objectives of social housing provision. Milligan, Phibbs et al. (2007) elaborate some objectives for the social housing sector including:

- The creation of incentives for workforce participation;

- Support for family life and work family balance;

- Supporting the health, well-being and education needs of occupants;

- Enabling ageing in place; and

- The development of socially cohesive communities and community building processes.

Trotter and Vine (2014) also provide a short list of broad social housing objectives such as:

- The creation of safer, stronger communities;

- Improving health;

- Promoting independence;

- The creation of community spaces; and

- Skills development.

A key aim of this indicator matrix is to provide both government agencies and community housing providers with the ability to measure outcomes and better articulate the broader community value of providing housing security to all.

Keeping sight of how this research can contribute to sector-wide improvement is critical. A recent discussion with NAHC highlighted one such use, that is, to help in determining when to invest and what to invest in, in order to receive the greatest return on investment. For example having specific metrics for a comprehensive data set could assist with the scenario in **Figure 4**.
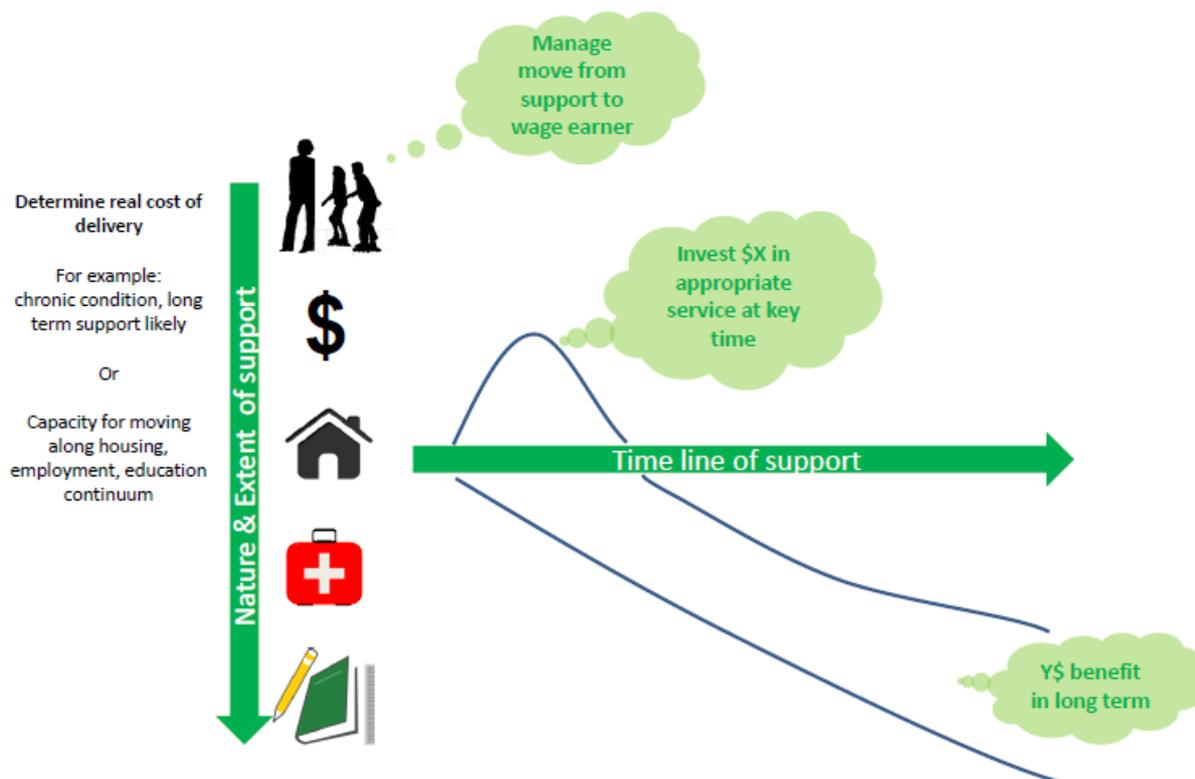
Figure 4: Indicators and metrics - research into practice - for example

Importantly, this also introduces the need to understand the real cost of service delivery, and the real broad-based benefits. This will be investigated further to ensure this critical context is understood (Fletcher, 2015; Productivity Commission, 2015; Reference Group on Welfare Reform, 2015)

4.1 The Indicator Matrix

The Indicator Matrix is structured around the nine domains, each of which is presented as an individual spreadsheet structured into:

- Outcomes as related to that domain,

- Indicators that measure a particular outcome,

- The impacts/benefits/dis-benefits (separated into geographic local/region, timeframe S/M/L, macro-economic and fiscal),

- The measured Return on Investment and/or Value (further separated into 'to whom'),

- Risks, and

- Notes and References.

The objectives, outcomes and indicators have been compiled in a cascade utilising the *Global Reporting Initiative* (2013). This has been done to provide universality to the indicators, which intersect various policy and provision domains and to potentially enable them to be more readily aligned with existing organisational reporting.

Figure 5: Draft outcomes and indicators matrix headers
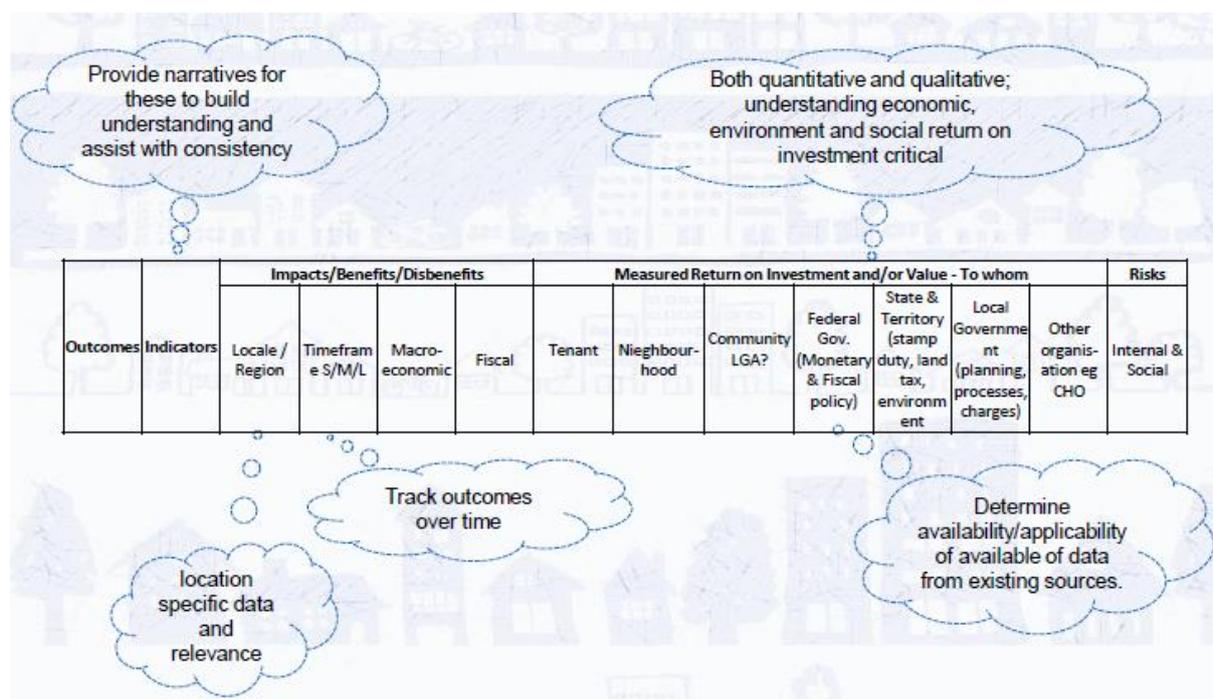
4.2   Domain explanation

The Indicator Matrix is structured around nine domains:

1.   Community;

2.   Economy;

3.   Education;

4.   Employment;

5.   Environment;

6.   Health and well-being;

7.   Housing;

8.   Social; and

9.   Urban amenity.

Within each of these domains are a number of outcomes which can be measured through a number of indicators.

4.2.1 DOMAIN 1 – Community

The community domain acknowledges the influence that the immediate and wider community has on individual well-being and outcomes. Therefore, it is important that in determining the effectiveness of social housing that features of the local neighbourhood impacting households and individuals are explored.

A key reference for this domain is the research from *Community Indicators Victoria* (Cox, Frere, West, & Wiseman, 2010; VicHealth & McCaughey Centre, 2015), an initiative that has developed locational measures of well-being as a tool for policy-makers and local governments. It provides a well-researched indicator set that allows analysis of levels of social cohesion, engagement and diversity for different geographical scales. Other important sources were literature relating to optimal social mix (see for example, Parkinson, Ong, Cigdem, & Taylor, 2014), and work around locational factors impacting wellbeing and relative disadvantage (see for example, Fauth, Leventhal, & Brooks-Gunn, 2004).

As an example, within this domain, the measured outcomes and corresponding indicators could include community connectedness, which could be measured through perception of belonging, social networks and access to social support, amongst others.

4.2.2 DOMAIN 2 – Economy

The economy domain includes financial outcomes at the individual and the macro-economic levels. At the micro-level, the indicators measure changes in the financial situation of tenants and their households. At the macro-level, the wider benefits of social housing, including improved productivity, higher tax base, and reduced spending on welfare are represented. While financial outcomes at the tenant level have been explored previously, the macroeconomic benefits are not well-researched. Buzzelli (2009) in his key report "Is it possible to measure the value of social housing?" provided the researchers with a valuable reference list to use as a starting point for research into this complex area.

As an example, within this domain, the measured outcomes and corresponding indicators could include increases in property values and associated tax income as measured through property values.

4.2.3   DOMAIN 3 – Education

The education domain explores the spin-off effects that housing provision has on the educational outcomes of tenants. The report by Trotter, Vine and Fujiwara (2015) is again useful here, and return on investment figures have been calculated previously in the UK context, in which the methodology and indicators can be drawn upon. The Steering Committee for the Review of Government Service Provision (2014) report "Overcoming Indigenous Disadvantage" also provides useful, broad education-related indicators relevant to Australia.

As an example, within this domain, the measured outcomes and corresponding indicators could include increased participation in education, which could measure adult literacy levels, amongst other indicators.

4.2.4   DOMAIN 4 – Employment

This domain looks at employment, skills development, and labour mobility outcomes relating to social housing provision. It does not include a large number of indicators and could potentially be developed further. Trotter, Vine and Fujiwara (2015) have some calculated numbers around return on investment in this area, and Bridge et al. (2007) provide discussion around the links between labour mobility and social housing outcomes.

As an example, within this domain, the measured outcomes and corresponding indicators could include increased participation in employment, which could be measured by employment rates.

4.2.5   DOMAIN 5 – Environment

The environment domain, like the economy domain, looks at both macro and micro- scale indicators. At the micro-level, individual building design features are evaluated, where at the macro-scale, reductions to pollution and air quality are noted.

As an example, within this domain, the measured outcomes and corresponding indicators could include appropriate level of density, which could be measured through residential and employment density levels.

4.2.6   DOMAIN 6 – Health

The health domain is one of the primary areas in which savings can be made as social housing tenant outcomes improve. It is also a more complex domain to determine

appropriate indicators and outcomes, due to the fact that health interacts causally with a wide range of factors which are difficult to separate.

A fair amount of research has been conducted in the health (including physical, mental and general wellbeing) outcomes of housing generally, and social housing in particular (see Trotter, Vine and Fujiwara (2015) for a strong methodological framework for determining the health savings to be made from housing assistance), and these were drawn upon heavily.

As an example, within this domain, the measured outcomes and corresponding indicators could include relief from health problems, which could be measured through levels of depression and anxiety, amongst other health indicators.

4.2.7 DOMAIN 7 – Housing

The housing section of the matrix looks at social housing from a more traditional government evaluation perspective. It therefore deals with adequacy, timeliness and outcomes of social housing management and provision. The more physical aspects of design, including sustainability features of buildings, is addressed within the Environment domain.

The indicators drawn for this domain, then, reflect recently used key performance indicators for housing (for example see: National Agreement Performance Information (Steering Committee for the Review of Government Service Provision, 2013) for these indicators). In addition, this domain addresses issues relating to maintenance of social housing dwellings as well as safety and security outcomes relating to housing location and quality.

As an example, within this domain, the measured outcomes and corresponding indicators could include access to secure housing, which could be measured by security of tenancy.

4.2.8 DOMAIN 8 – Social

The social is similar to the community domain, however, where the community domain explores outcomes relating specifically to location and neighbourhood, the social domain explores social issues from a tenant outcomes perspective. Therefore, the indicators refer to outcomes in family violence, criminality, and general social well-being outcomes of social housing tenants.

As an example, within this domain, the measured outcomes and corresponding indicators could include reduced antisocial behaviour, which could be measured through report rates and arrest rates.

4.2.9 DOMAIN 9 – Urban Amenity

Where the community domain focuses on some of the social outcomes relating to neighbourhood quality, the urban amenity domain focuses on some of the physical

characteristics of neighbourhoods that lead to a variety of outcomes, including those relating to health and social wellbeing. Some of the key references here include: Raman (2010), Newman and Kenworthy (1999) and Trubka et al. (2010).

As an example, within this domain, the measured outcomes and corresponding indicators could include increased community identity and image, which could be measured by number of community facilities or sporting facilities.

4.3   Prioritisation of the outcomes and indicators

Following initial construction of the matrix, consultation with stakeholders was sought, and the indicators and outcomes were discussed in terms of prioritisation for their particular organisation. This initial consultation was undertaken with stakeholders in Western Australia. Further prioritisation will occur with Queensland partners as a part of on-going research with: (i) Queensland Department of Housing and Public Works in a series of workshops currently underway; and (ii) with NAHC as part of an on-going project developing personal housing plans for social housing residents in NSW.

After initial discussion with stakeholders in Western Australia, a number of outcomes and indicators were highlighted as being particularly relevant.

A number of domains were highlighted as being particularly useful including:

- Community;
- Social;
- Urban Amenity;
- Housing; and
- Economy.

Some more specific indicators of interest included:
- Employment participation;
- Indicators around building design quality;
- Indicators exploring the consequences of density;
- Outcomes of regeneration; and
- Intergenerational financial benefits of social housing.

Within the specific domains a number of outcomes and potential indicators were identified as being relevant (those that scored 5 or 4-5 by stakeholders). These are outlined in **Table 1**. Please contact the research team for further detail.

Table 2: The most relevant outcomes and indicators by domain as determined through stakeholder consultation in Western Australia.

Top Outcomes by Domain from Stakeholder Consultation in Western Australia				
Domain	Outcome	Indicator	Stakeholder Relevance (5 = very relevant)	
			Housing Authority	Access Housing
Community	Equitable opportunity for all community members	No specific indicator identified yet. Potential indicators mentioned by stakeholders include – • Choice & access for Indigenous, disabled, mentally ill, different family composition etc. • Policy equity. • Equitable access to housing for regional clients.	5	5
Economy and Productivity	Increased Affordability and Availability	Estimated cumulative gap between underlying demand for housing and housing supply, as a proportion of the increase in underlying demand		4-5
	Return on investment	Earned rate of return		4-5
Housing	Access to secure housing	Number of moves pre-and post-tenancy		5
	Ability to maintain tenancy	Reduction in evictions		5
	Appropriate targeting of housing and assistance	Mobility between affordable options – pathways out of subsidised housing	5	
	Efficient asset management	Degree of flexibility in assets over time		5

The domain and outcome determined to be important by both stakeholders (the only outcome which received a 5 from both) was within the Community domain and was 'Equitable opportunity for all community members'. The Housing domain had a number of outcomes important to both stakeholders including 'Access to secure housing'; 'Ability to maintain tenancy'; 'Appropriate targeting of housing and assistance'; and 'Efficient asset management'. 'Indigenous Rights' was determined as an important outcome and much

discussion was undertaken about weaving this outcome into all the other domains and how this could be done.

Consultation with stakeholders in Western Australia revealed a stronger interest in the micro-level outcomes for tenants as well as interest in the immediate urban and built environment on tenants. There was surprisingly little perceived relevance of the broader outcomes concerning macro-economic productivity and health. Instead, high prioritisation was assigned to indicators, including those within the housing domain, which measure aspects already given evaluative attention within the respective organisations.

4.3.1 Gathering and identifying required data

These outcomes and indicators sit within the broader context of social housing delivery in Australia.

Figure 6 is an example of this broader context related to health and aged care. The context includes other indicator sets used for specific performance evaluation purposes and in conjunction with other statistical reports and national data sets. Other statistical information (both national and state-based) is required to assist interpretation of the indicators.

Data needs to be gathered from several sources, dependent on resources and time (due to longitudinal nature of data required). These include existing data sets as outlined in **Table 2**.

Table 3: Identified existing data sources

Source	Explanation	Reference
Household, Income and Labour Dynamics in Australia (HILDA) Survey	Primary objective to support research questions falling within three broad areas of income dynamics, labour market dynamics and family dynamics.	(Australian Department of Social Services, 2014)
National Social Housing Survey (NSHS)	Includes tenant satisfaction metrics	(Pawson, Lawson, & Milligan, 2011)
Australian Bureau of Statistics (ABS) data	• Australian Census of Population and Housing • Survey of Income and Housing Costs; National Health Survey • Rental Investors Survey • Disability, Aging and Carers Survey	http://www.abs.gov.au/ausstats/abs@.nsf/ViewContent?readform&view=productsbytopic&Action=Expand&Num=5.8

	• Mental Health and Wellbeing of Adults survey • Time Series profile (TSP) DatePack - contains select demographic information at various spatial scales to augment the existing area-based measures available in HILDA • Survey of Housing Occupancy and Costs 2009-10, ABS, 2011 Canberra	
Australian Institute of Housing and Wellbeing (AIHW)	Housing assistance in Australia 2011, 2012 & 2014. • For example this provides relevant demographic data, almost 40% of social housing households have a person with a disability • age and sex distribution • National Social Housing Survey - A summary of national results 2012	(Australian Institute of Health and Welfare, 2012)
Community Housing and Infrastructure Needs Survey (CHINS)	Relates to Indigenous Community Housing not "Community Housing" in the general	http://www.aihw.gov.au/abs-2006-chins-data/
AURIN - The Australian Urban Research Infrastructure Network (AURIN) Portal	In it, you can browse metadata for all the datasets available in the AURIN Portal. The information harnessed by AURIN covers almost every aspect of urban environments in Australia, from health and well-being, to economic metrics and environmental indicators	(Australian Urban Research Infrastructure Network, 2014; Gilmour, 2013).
Developmental Pathways Project - Telethon Institute for Child Health Research	This project investigates pathways to health and wellbeing, education, disability, child abuse and neglect, and juvenile delinquency outcomes among Western Australian children and youth. This is being undertaken by Telethon Kids Institute researchers and the University of Western Australia and several state government departments	http://www.datalinkage-wa.org.au/projects/developmental-pathways-project

	in a process which is linking de-identified longitudinal, population-based data collected and stored by a large number of these WA government departments and the Telethon Kids Institute, to create a cost-effective research and policy planning/evaluation resource.	

Other data sources include data available through administrative data linkages within existing data from Commonwealth, State and Local Government agencies. For example:

- State Government Valuer-General datasets:

- Wood and Cigdem (Wood & Cigdem, 2012) used data from the Victoria Property Valuations dataset, and the Victoria Property transactions dataset, in a confidential format to provide 'detailed property-level information on sales prices as well as neighbourhood and property characteristics that span a period of more than 20 years'.

- Longitudinal studies using special-purpose surveys (resource intensive).

- Cohort studies.

Data from similar overseas sources that could be effectively used to demonstrate relative performance to outcomes have also been identified, for example:

- Fujiwara (2013) can provide both a methodology and some measures for the UK, which may be useful in trialling the framework (Fujiwara, 2013; Fujiwara & Campbell, 2011; Trotter et al., 2015) (especially Annex B Meta-analysis of Life satisfaction approach).

In addition, several studies to date provide relevant data. These include:

- Ravi and Reinhardt Australian metrics using the SROI method (Ravi & Reinhardt, 2011); and

- Judd and Randolph (2006) who provide a selection of community renewal evaluation reports (Judd & Randolph, 2006).

Of interest when seeking data availability is a study by Buzzelli (2009) who highlights the likelihood of availability of such data in Canada (

Figure 7).

Figure 6: How does the performance indicator set relate to existing Australian health and aged care information resources? (Australian Institute of Health and Welfare, 2008)
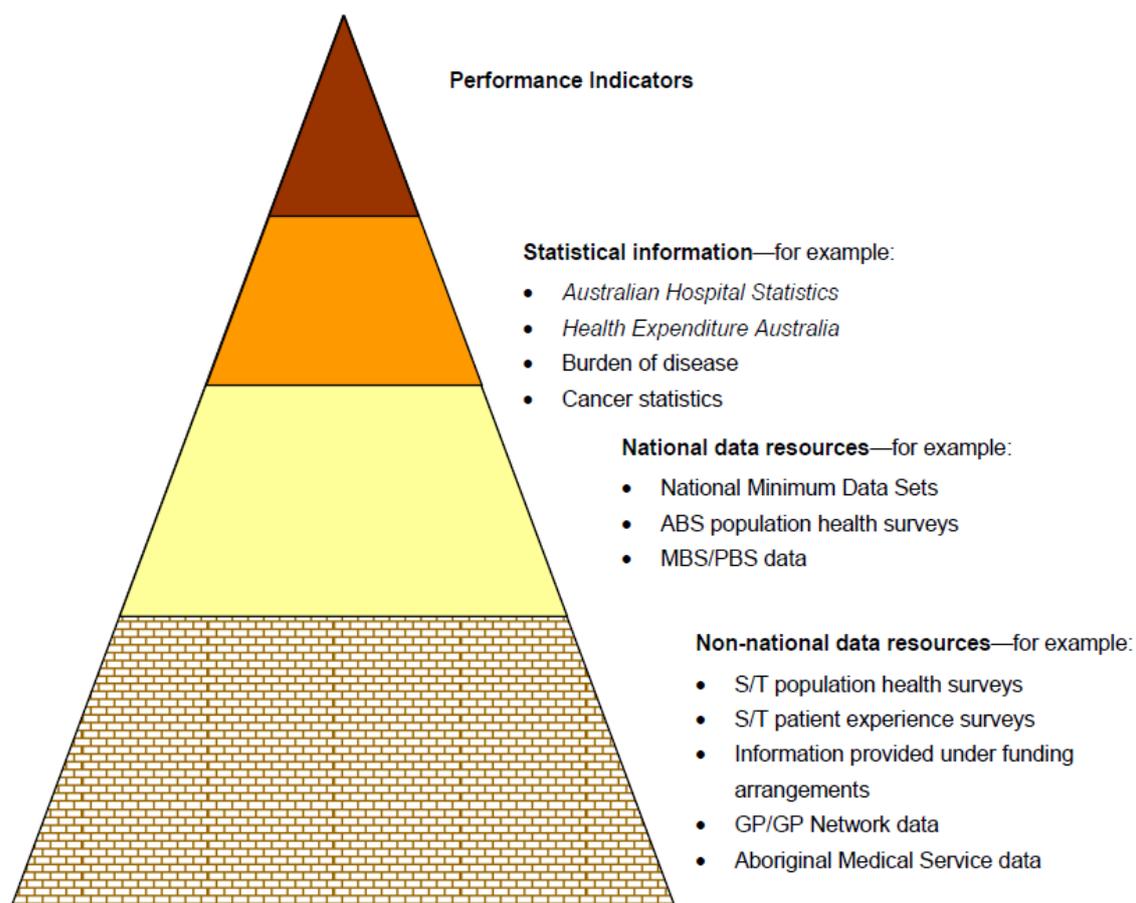
Figure 7: Scale and the data and evidence base in value of social housing research (Buzzelli, 2009)

1. **Household**
   - Most evidence
   - Range of studies and outcome measures
   - Most data availability

2. **Local Neighbourhood/Community**
   - Weaker evidence: anecdotal and/or qualitative studies
   - Ample literature on neighbourhood effects
   - Substantial literature on similar kinds of issues

3. **Wider/Macro-Economy**
   - Weaker evidence but several analogous studies
   - Problem of non-housing cost data and data integration/link
   - Data strategy and infrastructure needed

5. ATTRIBUTION: ESTABLISHING ASSOCIATIONS AND CAUSALITY

A key challenge for this research is to be able to correlate non-housing indicators and data (e.g. at a neighbourhood, household or individual level) to housing (e.g. types, styles, tenures, locations and conditions), by way of direct associations or, if possible, causal connections. We acknowledge that the relationship between housing and the various aspects of productivity we are considering 'are complex, multidirectional and mediated by a host of intervening factors' (Donald, 2015). Donald has recommended that we need a 'strong hypotheses based on logic and/or previous research on the nature of connections between housing and various ill-effects plausibly related to housing that generate costs or benefits for taxpayers, and a strong understanding of the importance of socio-economic, demographic and environmental variables in causing, moderating or exacerbating these apparent connections'.

> For example, a crude bivariate assessment of the probability of having a one or many disabilities, illness and injuries across people in public housing, private renters and home owners would "demonstrate" the usual perverse impact of social housing. But the causal connections are indirect and the conclusion is broadly spurious for the obvious reason that vulnerable people are increasingly concentrated in social housing. So the data on living arrangements have to be finely disaggregated as do the socio-economic and demographic data attached to both the health and housing data (Donald 2015).

Strong links between safe and secure housing, and other aspects of a person's life, including health and well-being, and the ability to engage in education, the workforce and the community, are acknowledged and evident from many perspectives.

To this end we need to develop a rigorous and defensible method. We propose to draw upon literature regarding:

➢ A governmental perspective from the UN to national and state-based legislation

➢ Adapting learnings from ecosystems and health methodology

➢ Links between housing, safety and psychological well-being (Maslow, 1958; McCray & Day, 1977)

In addition to this, the work of the UK agency for ideas and innovation in housing, HACT (2015) and CommonCause Consulting (UK) (Molyneaux, 2015) is highlighted here. These two

organisations[1] have an active program of work drawing together health and housing (especially social housing providers), including: their most recent report *The Health Impacts of Housing Associations' Community Investment Activities: Measuring the indirect impact of improved health on wellbeing* (Trotter et al., 2015); and master classes such as that on Wellbeing on July 22, 2015[2].

5.1   Establishing associations & causality from a governmental perspective

The following two considerations arose from a presentation by Fowler and Nguyen at Neumann and Turnour Lawyers in June 2015 (Fowler & Nguyen, 2015). They are presented to highlight the case for fundamental importance of housing and its link to health and well-being. Each area needs further investigation.

i.   Article 25 of the UN Declaration for Human Rights (to which Australia is a signatory) states that:

> *(1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing, and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.*
>
> *(2) Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.*

ii.   The Commissioner's Interpretation Statement: Provision of housing by charities (2014/02) from the Australian Charities and Not-for-profit Commission, Clause 2.3 states that:

> *2.3 Advancing health*
>
> *2.3.1 The purpose of advancing health is defined in s.14 of the Charities Act to include, but not be limited to the purpose of preventing and relieving sickness, disease or human suffering.*
>
> *2.2.1 Where housing is provided in order to prevent and relieve sickness, disease or human suffering, the provision of that housing can be charitable, for the purpose of advancing health.*

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[1] http://www.hact.org.uk/housing-and-health and http://www.housingandhealth.org/
[2] http://www.hact.org.uk/events/health-and-housing-masterclass-wellbeing

In addition to this, the recently published report of the Reference Group on Welfare Reform to the Minister for Social Services highlights that 'housing is essential to support employment and well-being and assist people on their path to self-reliance' (McClure, Sinclair, & Aird, 2015). They add that 'affordable housing with access to jobs and services is essential to allow people to participate socially and economically … [and]… provides a stable base for raising children and supports community engagement' (McClure, Sinclair, & Aird, 2015). A key recommendation of this group is that 'governments should ensure that housing and homelessness support services build strong links with mental health and employment services to address the multiple and complex barriers facing people who are homeless or at risk of homelessness'.

5.2   Adapting learnings from ecosystems and health methodology

Associate Professor Anne Roiko, Griffith School of Medicine, has provided relevant insights relating to ecosystem and health associations and causality, from a methodological point of view (see further detail in Section 5.4). Much of the following analysis draws upon discussion with Anne and a review of literature provided by her.

The following aims to provide an overview of the development of this approach, to inform the establishment of associations and causal links in the follow-on research project, *Valuing Social Housing*.

Knol, Briggs and Lebret (2010) identify issues related to policy development associated with environmental health issues as challenging due to systemic risks, long times scales between cause and effect and a complex array of impacts (Knol, Briggs, & Lebret, 2010). They note the need to new, inclusive and collaborative ways of approaching these issues which lead to an integrated approach to policy-making. They highlight 'the importance of including stakeholders, the need to deal sensibly with uncertainties, and the importance of integrating scientific, economic, social and cultural aspects of risks' (Knol, Briggs, & Lebret, 2010). Of key relevance here, in the development of the E6 Framework, is the approach established for *integrated environmental health impact assessment* which is a concept which aims to establish 'a means of assessing the extent, time trends or spatial distribution of health effects related to environmental exposures, and health-related impacts of policies that affect the environment, in ways that take account of the complexities, interdependencies and uncertainties of the real world'(Knol et al., 2010). This is aligned with the approach that we are seeking to achieve for social housing policy-making and delivery. These authors also acknowledge challenges arising from lack of data and large numbers of diverse stakeholder whose interests may not always be aligned. To this end they discuss the need for a sound conceptual framework to aid thinking and decision-making (see Figure 2).

Our *E6 Framework* (Figure 1) provides an important context for our thinking, but a further structural framework is needed to illustrate the various layers of consideration required, from the conceptual framework as established, to a structural level (across the nine objectives and/or the sector), to relational (impacts and indicators, and across elements within an organisation), to operational (adoption strategies incorporating time, location and cohort parameters). It is this complexity which can be addressed by the system dynamic model development proposed as part of the ARC Linkage bid for November 2015.

Knol et al. (2010) also note the importance of not simplifying or 'trimming' the model, as a key role of the model is to 'draw further attention to potential uncertainties that may be encountered…and shows those elements of the system that cannot be reliably quantified'.

Figure 8 provides an example of a structural framework proposed by Dahlgren and Whitehead (1991) highlighting the various layers of influence in a health context (as citied in Knol et al., 2010). Of particular relevance here is the *living and working conditions* band highlighting the role of housing alongside education, employment and health care as determinants of health.

Figure 8: 1991 Dahlgren and Whitehead model of determinants of health in (Knol et al., 2010)
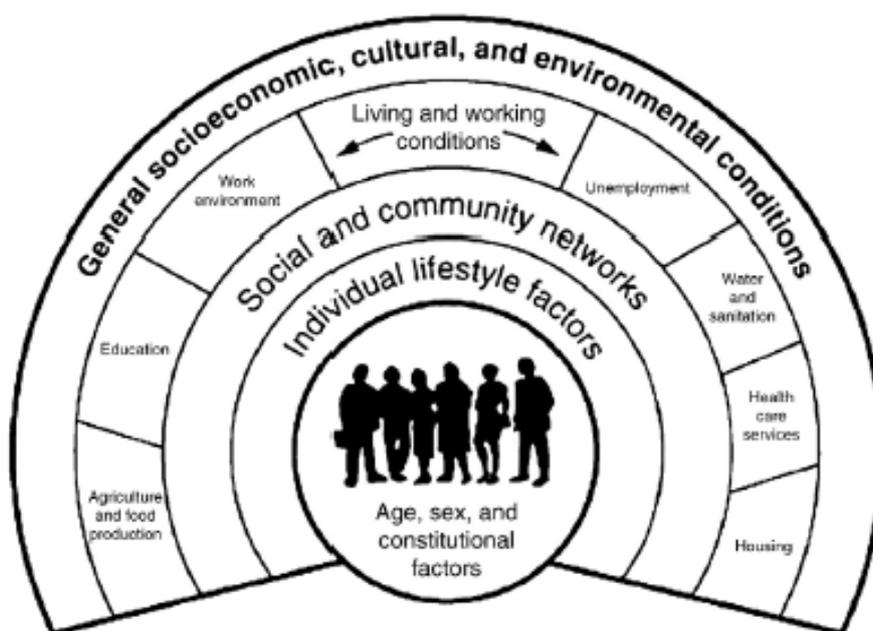
5.3   Links between housing, safety and psychological well-being

In 1958 Maslow presented A Dynamic Theory of Human Motivation (Maslow, 1958). In this treatise, once physiological needs have been met, safety needs become the next level of concern. Housing is considered by many since Maslow, to fall into this category. Much literature exists around this topic, which cannot be fully reviewed in the context of this current report. For example though, 'the interpretation of the findings as they related to the Maslow framework suggested that the public housing units provided for the physiological needs of the residents, but that deficiencies in environmental factors such as location, community services, and social aspects of the milieu frustrated satisfaction of the higher order needs' (McCray & Day, 1977). A more thorough review of literature is proposed.

Also of note is a key finding of this paper, that 'improved physical housing of the urban respondents made them more aware of the conspicuous absence of the psycho-social need satisfiers' (McCray & Day, 1977).

5.4   Building on health-based models of causality

VanLeeuwen, Waltner-Toews et al. (1999) presented the Butterfly Model of Health (

Figure 9) in the late 1990's. This built on several previous models discussed in their paper which reflect 'a 30-year trend to identify the direct relationships between human health and the so-called 'determinants of health' defined as 'factors, whether they be events, characteristics, or other definable entities, that brings about change in a health condition'. This model 'places humans inside the ecosystem' (especially applicable in ecosystems with extensive human influence, such as urban ecosystems and agro-ecosystems) (citing Bormann 1996, VanLeeuwen, Waltner-Toews, Abernathy, & Smit, 1999).

Figure 9: Butterfly model of health for an ecosystem context (VanLeeuwen et al., 1999)
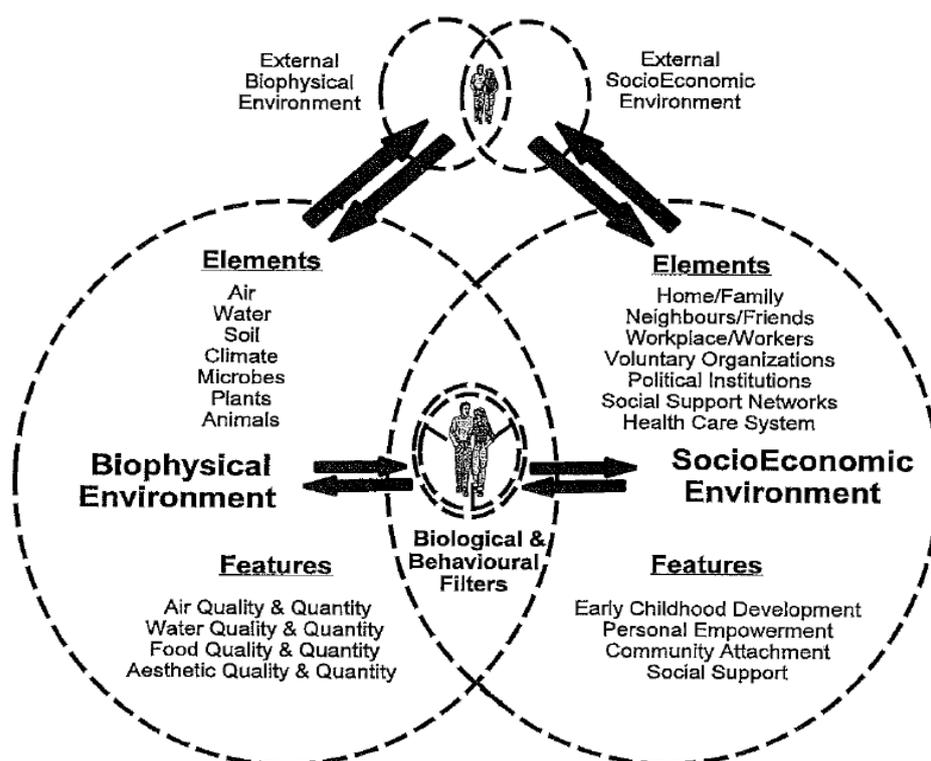
A considerable body of knowledge thus exists, which can be drawn upon, which acknowledges the links between social, environmental and health conditions.

To this end, literature regarding integrating health and environmental impact has been reviewed, along with follow-up references, in order to provide a framework for our consideration of the causal links between the indicators being developed for this project.

This literature also identifies processes (through cross-disciplinary expert panel and stakeholder consultation) to determine these.

5.4.1   Integrating health and environmental impact analysis

Advocates of the 'socio-ecological' perspective posited that health and disease were always products of a complex mixture of factors at individual and societal levels and should be tackled accordingly. This environment (in all its aspects: physical, social, economic, cultural, historical, and political) would always be an important, if sometimes, subtle, determinant of health status. Unfortunately, translating such insights into policy has generally proved challenging. Public health has understandably struggled with complexity. It has often failed to catalyse broader multisector collaborations necessary to react appropriately. (Reis, Morris et al., 2013)

Reis et al. (2012) explore various conceptual models relating to environmental and health impact assessment 'to account for the full causal chain of both human and ecosystem health assessment processes' (Reis et al., 2012). They discuss various models which focus on health assessment impact (HIA) and ecosystem service delivery and then propose a 'new integrated and cross-disciplinary conceptual framework, bringing together experts in the field of HIA, EIA (environmental impact assessment), ecosystem services, and public health'.

It is proposed that this framework is appropriate to building an understanding of the associations and/or causal links between the indicators we are proposing for our strategic evaluation framework. This would apply especially for the health related indicators, but the methodology could potentially also be applied for those related to other objectives and outcomes.

A key model for building these causal relationships is the DPSIR framework developed for the World Health Organisation in the 1990's:

➢ **Driving** forces and

➢ The resulting environment **Pressures**, on

➢ The **State** of the environment, and

- **Impacts** resulting from changes in environment

- The societal **Response** to these changes in the environment

Several adaptations of this framework have ensued, including the mDPSEEA (Driver-Pressure-State-Exposure-Effect-Action) framework (

Figure 10) which accounts 'for the mitigating influence of socio-economic, demographic etc, context, on the individual or sub-population exposure and on susceptibility which in turn influences the likelihood and magnitude of health effects arising from the same' (Reis et al., 2012).

Figure 10: The modified DPSEEA Model (Morris et al 2006 in (The Scottish Government, 2008))
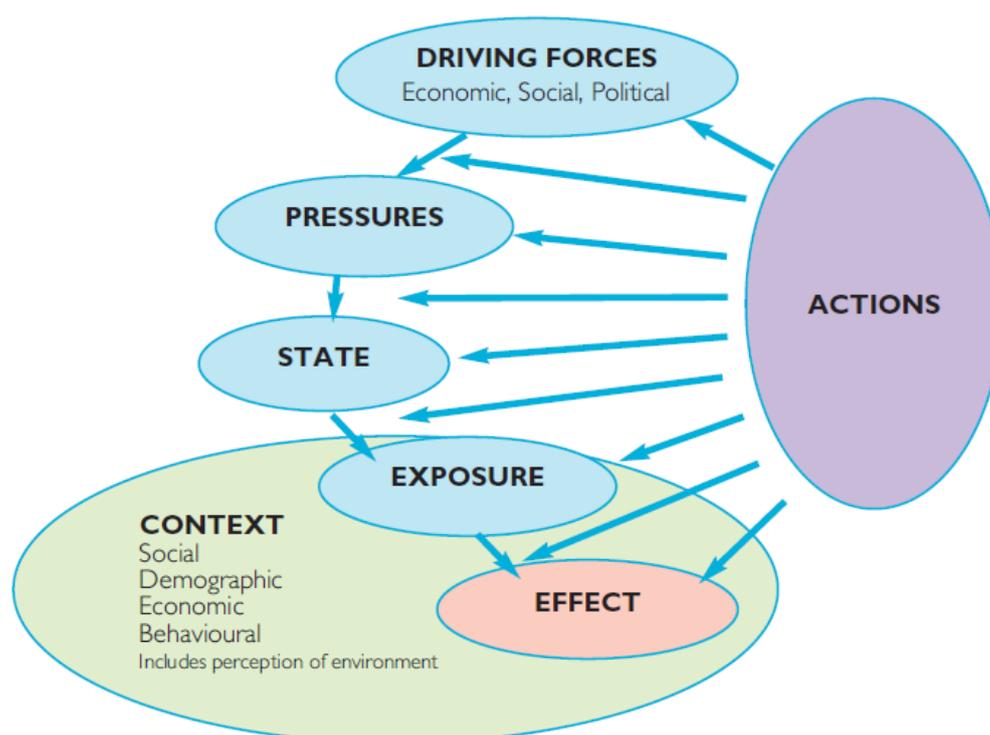
This method can also distinguish between long and short term drivers and disturbances through questioning such as:

- *How do long term press disturbances and short term pulse disturbances interact to alter ecosystem structure and function?*

> *How can biotic structure be both a cause and consequence of ecological fluxes of energy and matter?*

> *How do altered ecosystem dynamics affect ecosystem services?*

> *How do changes in vital ecosystems services alter human outcomes?*

> *How do perceptions and outcomes affect human behaviours?*

> *Which human actions influence the frequency, magnitude, or form of press and pulse disturbance regimes across ecosystem, and what determines these human actions?*

It is considered that these questions can be modified to be appropriate for our current social housing context.

Following on from this the author's present *The Valuing Nature Network* framework (

Figure 11).

Figure 11: Conceptual framework of the valuing nature network (http://www.valuing-nature.net) (Reis et al., 2012)
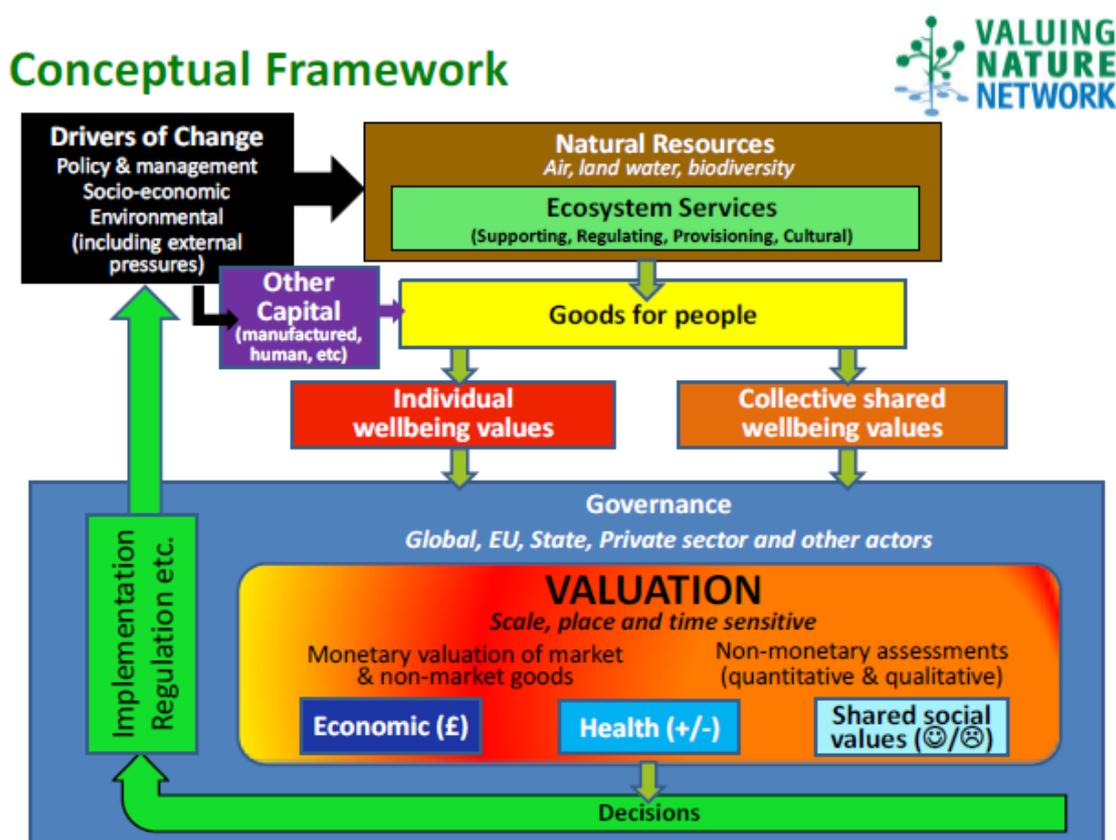
In 2007 the UK Department of Environment, Food, and Rural Affairs outlined the key steps for valuing eco-service systems including:

- Establish the environmental baseline

- Identify and provide quantitative assessment of the potential impacts of policy options on eco-service systems

- Quantify the impacts on policy options on specific ecosystem services

- Assess the effects on human welfare

- Value marginal changes in ecosystem services

Reis, Steinle et al. (2012) proposed the following framework **(Figure 12)**. Consider this *substitute social housing need for human activity,* and re-contextualise accordingly.

Figure 12: Eco-system enriched DPSEEA (eDPSEEA) – a conceptual framework for an integrated assessment of human and eco-system health and eco-system service provision (Reis et al., 2013)
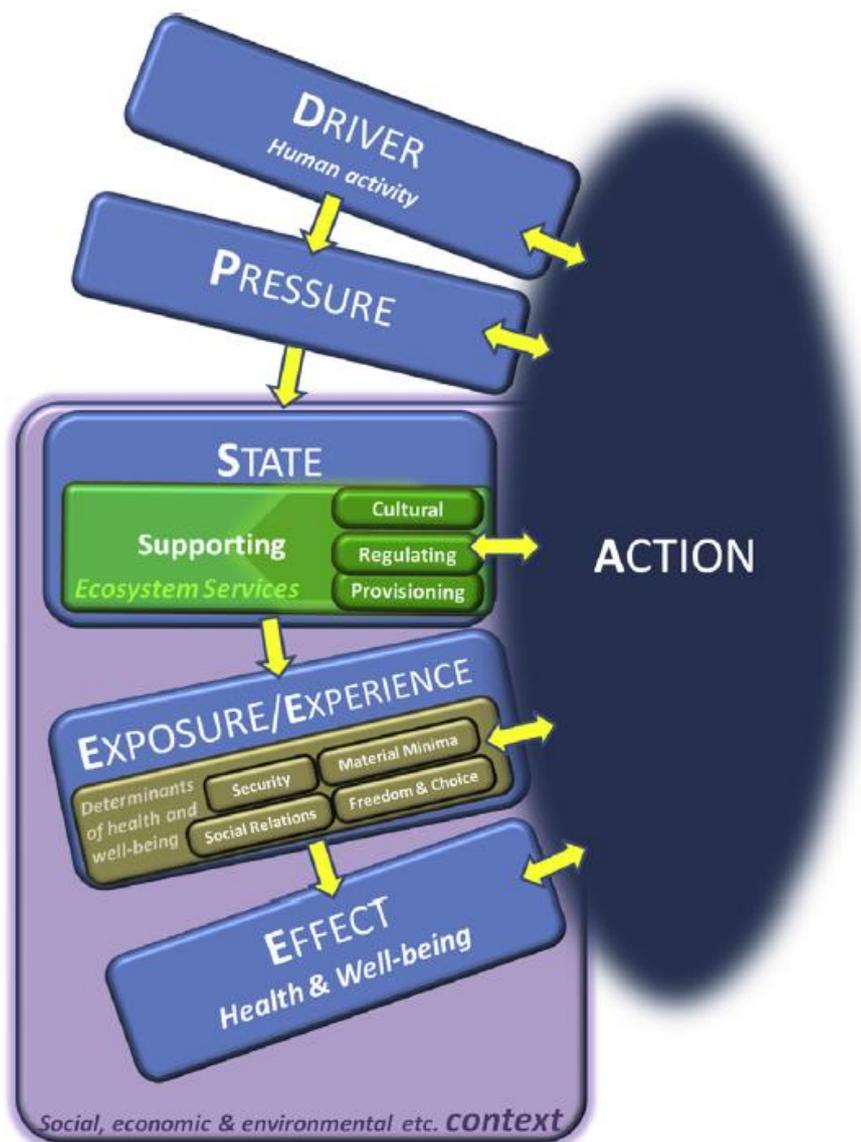
The authors also highlight the challenge of accounting for complexity with regards to feedback loops across the whole system, or individual components of it. This is the complexity that our proposed ARC Linkage account seeks to address through the development of a system dynamic model.

5.5 Establishing causal chains with sector specialists

The practical application of this approach is through stakeholder engagement, as undertaken by Reis et al. and the Scottish Government (NHS Health Scotland, 2014; The Scottish Government, 2008).

Figure **13** illustrates 'the potential for feedback loops between Pressure, State and Exposure/Experience which is manifest when considering relationships between ecosystem services and determinants of human health and well-being. Feedbacks are depicted by two-directional arrows, but it should be noted that both positive and negative feedback effects may occur between a wide range of components of the eDPSEEA model'.

Figure 13: Illustrating the potential feedback loops between pressure, state and exposure/experience (Reis et al., 2013)
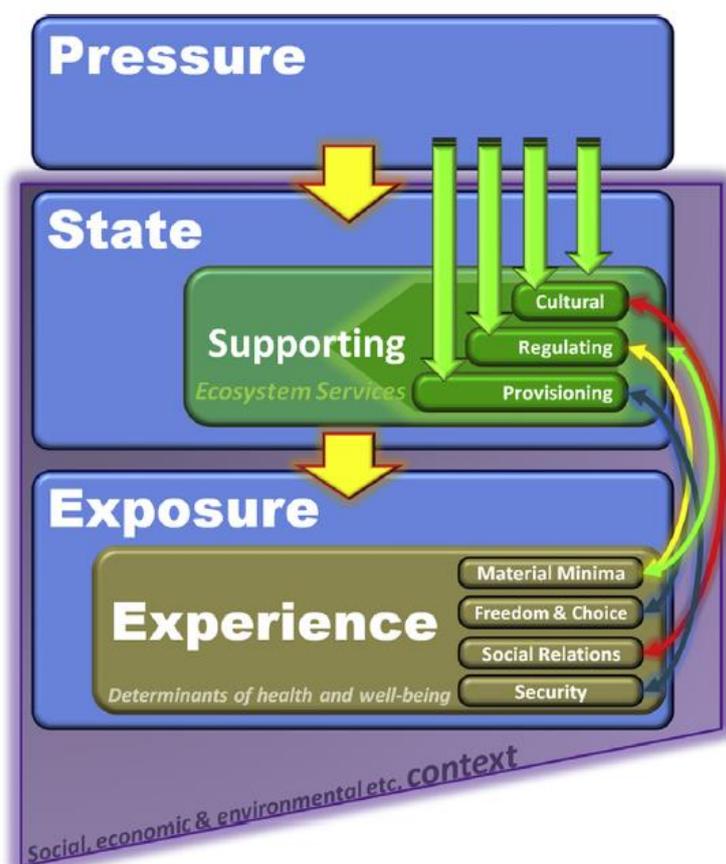
Such engagement is thus proposed for future research activity, drawing together a team of sector-based specialists from both Griffith and Curtin universities initially.

5.6   Established associations and causal links

The team will initially seek to gather data regarding known causal links. The initial review undertaken of literature revealed some sources:

➢ Links between housing, labour markets, education and health, from a systematic review of literature (Bridge, Flatau et al. 2007 in ref)

> ➢ Community housing impact map developed through consultation with housing providers (Ravi and Reinhardt 2011)

A search of AHURI research papers and other literature will investigate other sources of known links.

Buzzelli (2009) explores these in the Canadian context, considering links at household, neighbourhood, and the broader macro-economic levels (Buzzelli, 2009). These will be explored further.

5.6.1 Associations and causal links at the household level

Buzzelli (2009) identifies several examples of established links at the household level, which will be followed up by the research team:

Acevedo-Garcia (2000) - new concept for understanding housing and health linkage
Briggs et al. (2008) - educational outcomes
Centre for Housing Policy - 2007 a& b - health and educational outcomes of affordable housing
Thompson et al. (2003) - household benefits of refurbishment
Curtis et al. (2002) - household benefits of urban regeneration
Fauth et al. (2004) - violence, health, abuse and dependence of social assistance
Hills (2001) participation in social housing reinforcing social polarisation and deprivation
Olsen et al. (2005) - impact on labour earnings and employment
Gagner and Ferrer (2006) - range of longitudinal outcomes in children.
Oreopoulos (2003) - links tax administrative data of Canadians to labour market outcomes
Smith and Sylvestre (2008) - analyze outcomes of movers to different apartment residences.
Bryant et al. (2004) and CMHC (2007) - qualitative studies.
Social Housing and Mental Health Study (Dunn, 2009) - longitudinal community-based research
Tucker et al. - Positive Spaces Healthy Places - intersections of housing and persons with HIV and AIDS
CMHC, 1997; McClure, 1998; Anderson et al., 2003 - examining differences between alternative types of social housing/assistance
CMHC, 2001; Fertig and Reingold, 2006 - differences between those in social housing (cases) and comparators in market housing (controls)
Mueller and Tighe, 2007 - effect of mobility
CMHC, 2001; Galster and Zobel, 1998 - impact of social mixing
Feinstein et al, 2008 - conclude that long-term residence in social housing can stall residents' outcomes and reduce life chances
References to be followed up from Buzzelli (2009). See original for full details.

Another great source of information is an Australian study by Berry, Chamberlain, Dalton, Horn and Berman (2003). This report focused on the costs of homelessness, arguing that interest has grown because of its persistence in Australian society, its impact on housing-related and non-housing services and spending, and growing public discontent and sense of social justice. The authors then set their analysis in the context of debates about how to quantify/evaluate homelessness, such as debates between cost-benefit versus cost-effectiveness (of housing and/or support services) studies. Though the focus is on homelessness, this review is useful because it is indicative of research in Australia (and elsewhere) and adopts the "Cochrane" review protocol that could be used in a full review of the literature on the economic value of social housing.

5.6.2 Associations and causal links at the neighbourhood level

Buzzelli (2009) noted that there was less evidence to be found for impacts at the local area, with the most notable evidence being related to property value impacts and 'spatial externalities', including other urban form and health issues relating to sprawl and walkability and the absence of nutritional food outlets. He provides the following:

Frumkin et al., 2004 - sprawl and walkability recent example of ongoing interest in the mutual interdependence of physical space and social

Wrigley, 2002; Smoyer-Tomic et al., 2006; Cummins and Macintyre, 2002 - urban "food deserts" and impact of the absence of nutritious food outlets on poor urban households

Cervero and

Duncan, 2002; Vadali and Sohn, 2001; Adair et al, 2000; Baum-Snow and Kahn (2000); Falcke (1978, in Goldberg, 1990); McMillen and McDonald's (2004); Damm et al. (1980) - property value impacts associate with spatial externalities

Mueller and Tighe's (2007) - conceptual linkages between housing and neighbourhoods, on the one hand, and health and educational outcomes, on the other, are not yet well developed.

Curtis et al. (2002) - impacts of urban regeneration on residents,

Zielenbach (2003) - urban regeneration and neighbourhoods' relative standing.

CMHC (1994a) - incumbent residents' and business's perceptions of social housing in their neighbourhoods.

Nguyen's (2005) - mixed evidence of a property value impact, depending on design and management, land use mix and the degree of concentration/segregation of housing projects.

References to be followed up from Buzzelli (2009). See original for full details.

5.6.3 Associations and causal links at the wider/macro-economic level

Buzzelli (2009) notes that there is indirect evidence to support the position that value of social housing can be witnessed in reduced spending on health and educational outcomes (Buzzelli, 2009). Again Buzzelli provides the following for further follow-up:

AOCDO (2003) study - some direct evidence of the ROI in cost-shared (20% subsidy for initial capital outlay and ongoing cost sharing of carrying costs) social housing in Oregon showing: an internal (State) annual rate of return of 25.5%, whereas the accepted rate of return in the literature is roughly 10% to 15%; and aggregate rent savings of $24 million and 833 jobs supported by rent savings, all based on $94 million in investment (over 10 years).

Patterson et al.'s (2008) study of adults in British Columbia with severe mental illness - authors estimate the average homeless person to cost British Columbia approximately $55,000 a year, a sum reduced to $37,000 a year with adequate supportive housing - resulting in total social "cost avoidance" of $211 million; and if capital and ongoing costs of adequate and supportive housing provision are accounted for, provincial savings of $33 million on an annualized basis.

Pomeroy's studies (2007, 1998 [with Dunning]) - aimed primarily at municipalities, for proactive social housing and supportive housing for the homeless - arguing that supportive housing can significantly offset the costs of emergency and institutional services such that the housing, along with support services, in effect "pays for itself." Call 'for interagency and intergovernmental/jurisdictional policy and program coordination so that the costs and benefits of proactive supportive housing can be fully realized'.

Rose (1992) - discussion of the large population health effects of small changes in income/wealth distribution,

Sanmartin et al. (2003) - benefits of social welfare transfers in improving population health

Berry et al. (2003) - Australian experience of cost avoidance in housing the homeless.

References from Buzzelli (2009). See original for full details.

5.7 Next steps in establishing and identifying associations and causal links

Defining a methodology for identifying associations and causal links, which builds on both the ecosystems and health literature highlighted here, and the work of HACT UK is a key next step.

This method needs to sit within the overarching *E6 conceptual framework*, and be applicable from strategic through to operational levels (**Figure 14**).

Figure 14: Stages in E6 framework development. Adapted from (Knol et al., 2010)

Adapted from Knol, Briggs & Lebret 2010
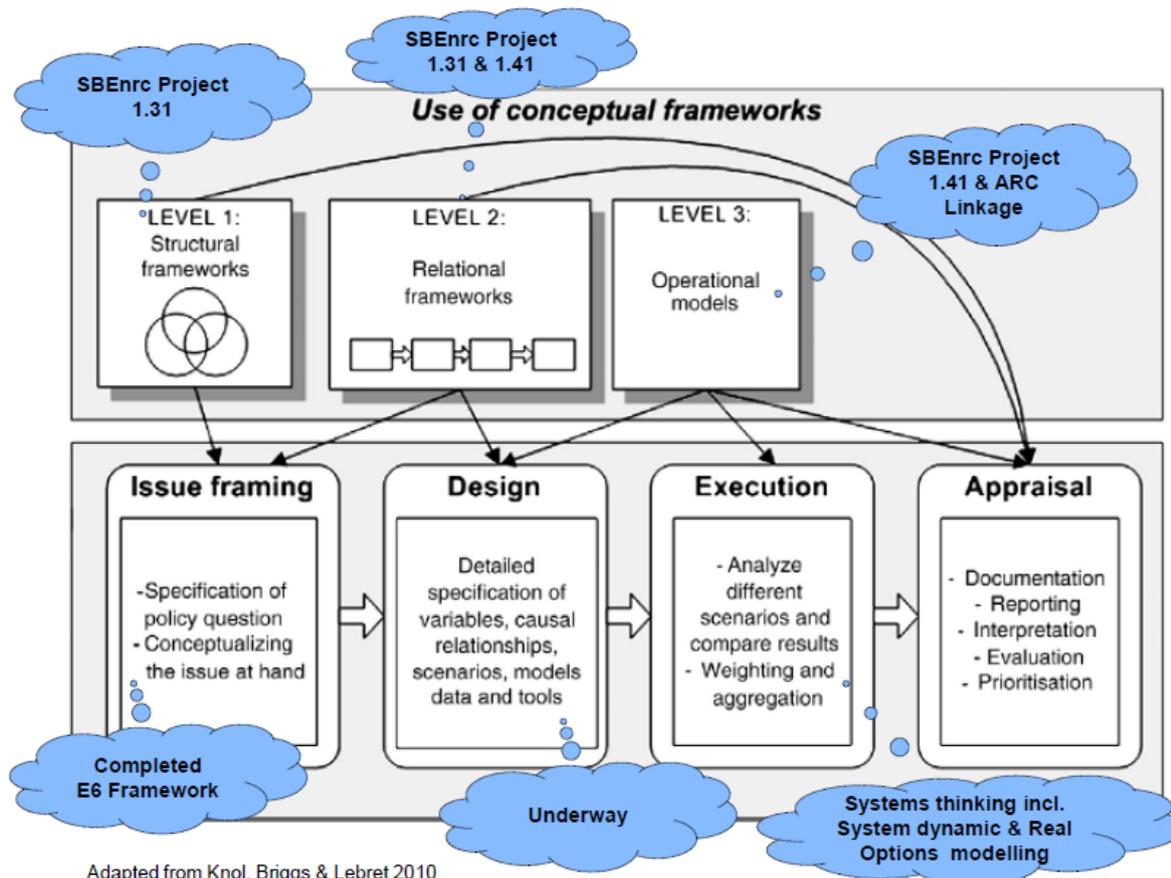
It is also important to consider both the time scale and locality related issues in the course of framework development (

Figure 15).

Figure 15: Contextualising the E6 Framework (variant of Waltner-Toews & Kay, 2005)
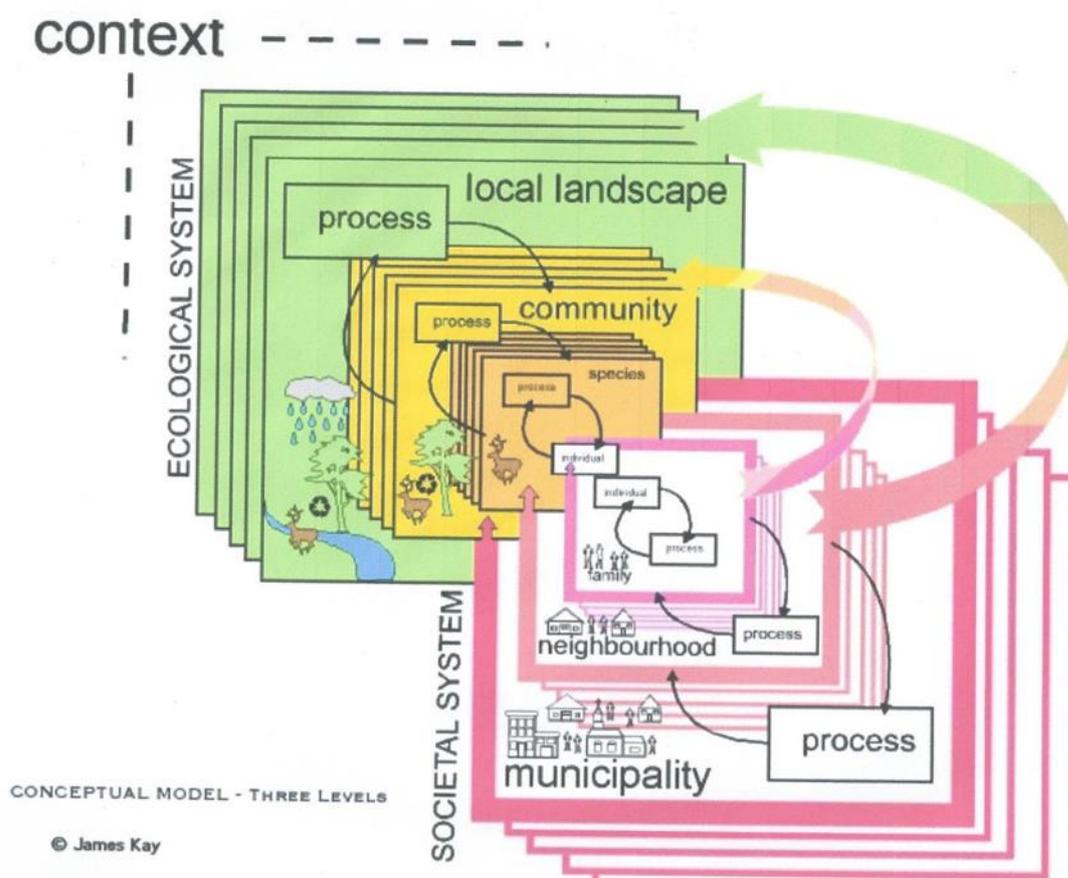
5.7.1 Expert panels and establishing associations

The ability to identify established links for the indicators will be limited. It is proposed that in the SBEnrc extension project *Valuing Social Housing* additional associations critical to the *E6 Framework* are consolidated.

To do this it is proposed we establish expert panels of key stakeholders and others with specific expertise in each of the nine domains, to work through the process established by Health Scotland (NHS Health Scotland, 2014). **Figure 16** is an example of one of the resources they have developed. The outcomes and indicators matrices will then reflect this information.

Figure 16: Blank mind map for community consultation using DPSEEA manual to establish causal links between environment and health (NHS Health Scotland, 2014)
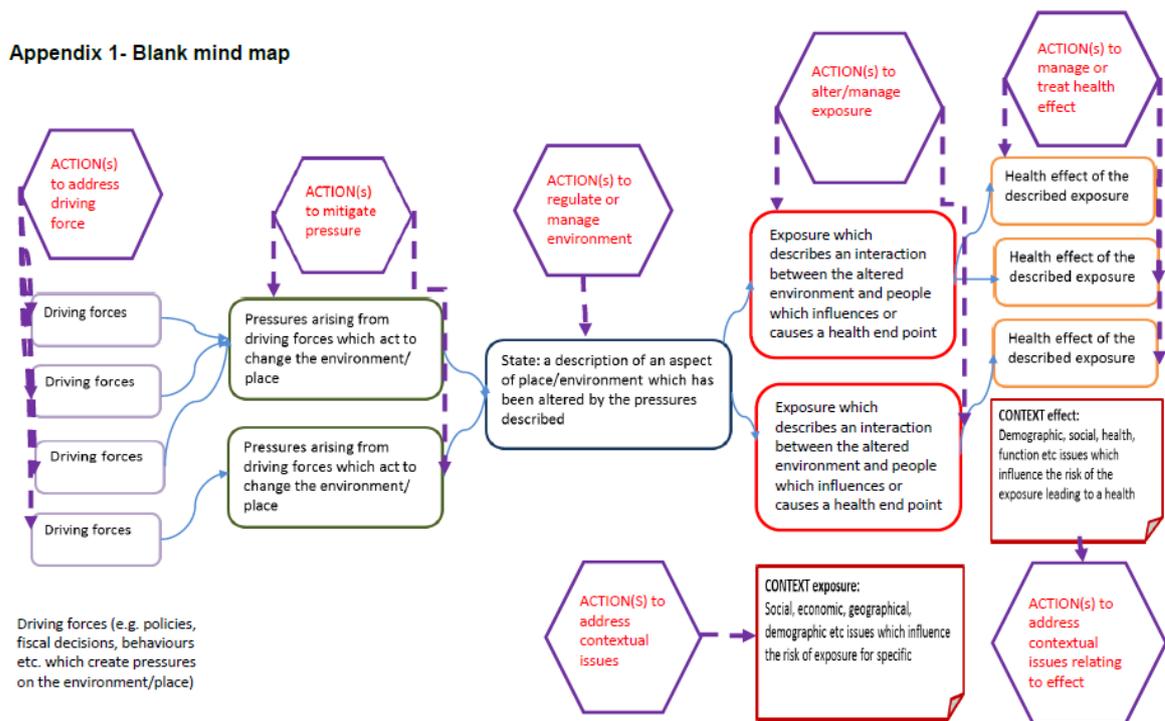
6.   EXPLORING RETURN ON INVESTMENT

Following on from the Stage 1 review of literature, this report considers three methods for measuring outcomes and potentially determining return on investment: Social Return on Investment (SROI); Social Cost Benefit Analysis (SCBA); and Well-being Valuation Analysis (WVA).

In addition, current research by Professor Eduardo Roco and Dr Benjamin Liu at Griffith University is presented. Roco and Liu are currently undertaking parallel research, *Financing Social Housing*, as an additional (separately funded) component to the *Rethinking Social Housing* project. In this research they are seeking to develop a *Real Options Model for the Delivery of Social Housing*. This model would complement the development of the systems dynamic model which is proposed as a part of the ARC Linkage bid currently under development, and due for submission in 2015.

6.1   Identifying return on investment: outcomes measurement

Identifying the ROI associated with social housing is driven by the need to better articulate the social and economic returns to the community of investment in social housing. To effectively do this, we are developing outcomes and indicators which go beyond the traditional specific housing indicators to embrace externalities not typically measured in relation to the investment in social housing itself.

This is driven by our conceptual framework in which the broader productivity benefits of providing secure housing are being identified and potentially measured. This is important in the current context of social impact measurement being pursued by governments across Australia and internationally. Dunn (2014) defines social impact investing as 'investing in efforts that not only provide a return on investment, but also target specific social needs' (Dunn, 2014a). Such measurement is also important in order to attract institutional investment to the delivery of social housing through establishing the expectation (supported by evidence) that 'you'll get your money back and potentially an income stream from the investment' (Knowles in Dunn 2014).

Dunn (2014b) highlight SROI as 'an approach that seeks to measure the impact of a project, program, social enterprise, non-profit organisation or policy by analysing the value created from the social outcomes and comparing these with the investment needed to generate these benefits' (Dunn, 2014b). An SROI analysis of Food Connect Brisbane 'estimated that for every $1 invested in Food Connect Brisbane, $16.83 is created in social value' (Dunn, 2014b). This included items such as 'farmers benefiting from increased revenue, consumers

eating healthy food, an increased sense of community, reduced welfare payments and higher taxes through the employment of people previously excluded from the labour market' (Dunn 2014b).

In a recent report, *Measuring Outcomes for Impact in the Community Sector in Western Australia*, Flatau et al. (2015) highlight, among others, the need: (i) to provide evidence that a program is achieving its desired impact; and (ii) to explicitly identify trade-off when deciding which programs to fund (Flatau, Zaretzky, Adams, Horton, & Smith, 2015). They identify 3 tools for such measurement including SROI; social accounting and audit (SAA); and Results Based Accountability (RBA).

The NSW government has recently established the Office of Social Impact Investment, and acknowledge 'a lack of quality data to measure and quantify many outcomes, and diverse views on how to measure outcomes, for example cash savings versus avoided costs' (The Office of Social Impact Investment, 2015).

Based on the previous review of literature following three methods for measurement outcomes and potentially determining the financial return on investment for the various indicators have been considered, as assessed in **Table 4**:

(i)   Social Return on Investment (SROI) ;

(ii)   Social Cost Benefit Analysis (SCBA); and

(iii)   Well-being Valuation Analysis (WVA).

Table 4: Comparative assessment of three ROI methods

	SOCIAL RETURN ON INVESTMENT (SROI) (Social Ventures Australia Consulting, 2012)	SOCIAL COST BENEFIT ANALYSIS (SCBA) (Fujiwara & Campbell, 2011; HM Treasury, 2011)	WELL-BEING EVALUATION ANALYSIS (WVA) (Fujiwara, 2014; Trotter & Vine, 2014; Trotter, Vine, Leach, & Fujiwara, 2014)
Aim	Provide ratio of inputs to impacts. Calculate $ value of social impact compared to cost of benefits	Attaching a *monetary value to non-market goods by looking at the impact that these things have on utility*	Developed specifically for measuring the social value of housing associations in the UK, the method emerged in response to the perceived lack of appropriate tools for quantifying social value on a large (i.e. sector-wide) scale.
Usage	Assess performance against social impact	How to go about valuing social costs and benefits for which there is no market price	Housing associations; arts organisations
How to implement	*Accredited practitioners using SROI Guide 7 Steps* Training - http://socialventures.com.au/sroi-training/	Various market-based approaches : *Stated preference* - questionnaires on willingness to: pay for a particular outcome, & accept a particular outcome. *Revealed preference* - inferred from examining consumer's behaviour in a like market. *Subjective well-being approach* - see Fujiwara and Campbell 2011 *Direct assessment* - of the benefit/cost through specific study.	Draws on UK databases: British Household Panel Survey; Understanding Society; Crime Survey for England and Wales; & Taking Part. Understanding causal relationships is a key part.
Resources	http://socialvalueuk.org/	The Green Book - especially Annex 2 Valuing Non-Market Impacts https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent	Survey templates - (Trotter et al., 2014) Calculation Tool - http://www.hact.org.uk/value-calculator
Based on	CBA + stakeholder driven evaluation	Cost Benefit Analysis	Draws on the Green Book & supplementary guidance on valuation methodology - Fujiwara & Campbell, 2013. Values are fully consistent with economic theory & principles underlying CBA & SROI & use statistical methods at the forefront of valuation methodology.
Logic	*Inputs are applied to service activities to produce outputs, from which outcomes are derived, which result in impacts. In those terms, the purpose of SROI is to examine the*	Can impacts be measured and quantified? Can prices be determined from the market? If not determine: *willingness to pay* or *Willingness to accept.*	Self-reported well-being - estimates impact of a good/service on subjective well-being - then uses this to calculate the exact amount of money that would produce equivalent impact

	relationship between inputs and impact.		
Development Timeline	2000 - Roberts Enterprise Development Fund USA 2005/06 - First used in Australia 2010 - Productivity Commission - *endorsed SROI as a useful approach which fits with the Performance Measurement Framework it proposed*.	2003 - First edition of The Green Book 2011 - Release of Fujiwara and Campbell, Valuation Techniques for Social Cost- Benefit Analysis 2011 - addition of Annex 2 Valuing Non-Market Impacts	2013/14 - Developed for measuring the social value of housing associations in UK - emerged in response to the perceived lack of appropriate tools for quantifying social value on a sector-wide scale
Examples	*Australia*: Food Connect Brisbane, Livingin Constructions and others http://socialventures.com.au/assets/SROI-Lessons-learned-in-Australia.pdf See working example p.8 SVAC 2012 *International*: http://www.thesroinetwork.org/publications/case-studies	UK Department for Transport - valuing time in the appraisal of road schemes UK DWP - economic and social impacts of work into cost-benefit analysis of employment programmes - https://www.gov.uk/government/publications/the-dwp-social-cost-benefit-analysis-framework-wp86	Impact of adult learning for decision making at local and national level - Fujiwara 2012 http://socialvalueint.org/ Arts for all Queenslanders Strategy: Our research at SImetrica has found, for example, that the social value of (i) participating in sports is about £1,127 (GBP) per year per person; (ii) being a regular audience member to the arts is about £935 per person per year; (iii) visiting libraries regularly is about £1,359 per person per year; and (iv) regular dance is about £1,671 per person per year(Fujiwara, 2014c). http://www.arts.qld.gov.au/blog/index.php/measuring-social-value-in-the-arts/
Website	http://www.thesroinetwork.org/ & http://www.thesroinetwork.org/australia	https://www.gov.uk/government/publications/the-green-book-appraisal-and-evaluation-in-central-governent	http://eprints.lse.ac.uk/51577/ http://www.siaassociation.org/topics/well-being-valuation-wv/ http://www.simetrica.co.uk/#!wwwsimetricacouk-resources/cs

6.1.1 Social return on investment method (SROI)

This method has been developed in order to determine and quantify social impact. It captures the value added via organisational or departmental investment, allowing social, environmental and other non-economic benefits and costs to be articulated in financial terms. These values are then compared to the investment made, and the cost-effectiveness of a program or organisation can be determined. SROI then generates a cost benefit ratio. For example, an organisation might be found to have generated $5 of social (or environmental) value for every $1 of total investment. While SROI articulates value in financial terms, the social value calculated should not be understood as a financial *return* on investment, but rather as a financial representation of value added. In addition to providing a ratio of value added versus investment, the method also provides a valuable mechanism for tracking organisational change and can assist organisations to maximise their social value creation. In this way, SROI represents a useful strategy for ongoing value measurement and program or organisational evolution.

The SROI Network publish a guide which includes the seven steps (Social Ventures Australia Consulting, 2012).

1. Involve stakeholders. Stakeholders should inform what gets measured and how this is measured and valued.
2. Understand what changes. Articulate how change is created and evaluate this through evidence gathered, recognising positive and negative changes as well as those that are intended and unintended.
3. Value the things that matter. Use financial proxies in order that the value of the outcomes can be recognised.
4. Only include what is material. Determine what information and evidence must be included in the accounts to give a true and fair picture, such that stakeholders can draw reasonable conclusions about impact.
5. Do not over claim. Organisations should only claim the value that they are responsible for creating.
6. Be transparent. Demonstrate the basis on which the analysis may be considered accurate and honest, and show that it will be reported to and discussed with stakeholders.
7. Verify the result. Ensure appropriate independent verification of the account.

SROI has been adopted in the UK to ensure that the potential (non- economic) value added is adequately assessed when determining the placement of funds and choice of service providers (Harlock 2012). In 2012 the *Public Contracts (Social Value) Act* was introduced, which necessitates the analysis of social value when determining contract allocation. It is essentially a policy tool that levels the playing field between third sector organisations and commercial operators, by placing value on the less tangible, but important outcomes that third sector organisations can bring about.

Two Australian based examples include the *The Social Value of Community Housing in Australia* study (Ravi & Reinhardt, 2011), and that for the Victorian Women's Housing Association (Kliger, Large, Martin, & Standish, 2011; Social Ventures Australia, 2010).

Kliger, Large et al. adopted the SROI approach to discuss the premise 'that investment in affordable housing for low-income women provides both micro and macro-economic benefits for cities and communities' (Kliger et al., 2011). This study researched 'the value produced by the volunteer and philanthropic group known as the Victorian Women's Housing Association (VWHA). This paper draws on the Social Ventures Australia study reported in 2010 (Social Ventures Australia, 2010). The majority of the savings highlighted are calculated over a 20 year period (**Table 5**, **Table 6**).

Table 5: Contributing Stakeholders Savings and Benefits (Social Ventures Australia, 2010)

Stakeholder group	Value
State, federal and local governments benefit from savings resulting from avoided costs of homelessness, incarceration and through decreased welfare expenditure. They also benefit through increased taxes paid by tenants.	$9,006,922
Investors in VWHA whose investment is returned through rental income and increases in the market value of properties.	$16,108,875
Community Organisations provide support services for the women in the houses, e.g. Melbourne Citymission provides support and life skills programs for the women.	$429,975
Total value (over 20 years)*	**$25,545,772***

'A key macroeconomic outcome is the significant saving to government through the avoided costs of welfare and re-entry into correctional institutions' (Kliger et al., 2011).

Table 6: SROI Macroeconomic Impacts (Social Ventures Australia, 2010)

Outcomes – Indicators	Value
Total for Government	**$9,006,922**
Avoided costs of corrections *Cost of prison stay for 3 months*	$1,781,250
Increased tax income due to tenants employed *Increased taxes and reduced welfare payments*	$987,012
Increased taxes due to increased education *Additional salary earned as a result of increased education*	$29,847
Avoided costs due to reduced drug/alcohol use *Reduced or eliminated need for drug treatment/counselling and rehabilitation*	$760,000
Savings on future welfare expense for children i.e. secure safe housing prevents intergenerational poverty *Positive increase in children's confidence, academic performance, physical and mental health and family relationships*	$1,398,267
Avoided costs of transitional housing *Prior to VWHA, women and their families had been reliant on emergency or transitional housing services average four times over 20 year period*	$3,650,546
Levering off government funding *Debt and philanthropic funding to development and ongoing activities*	$400,000
Investors through VWHA	**$16,108,875**
Rental income on 17 houses *Rental income*	$2,520,000
Income from sale of property at the end of the 20 year period *Estimated market value of properties*	$13,588,875
Positive outcomes for women and their children *Captured in women and children outcomes*	*$16,108,875*
Community Partners	**$429,975**
Improved physical and mental health of women and their children *Reduced reliance on social workers through time*	$429,975
Housing Developers	
Improved profile within community and increased employee morale *Increase in employee engagement*	Unable to be monetised because it was difficult to measure

6.1.2 Undertaking an SROI

Considerable resources exist to assist with this, along with agencies which can undertake these for an organisation.

Some of the available resources, which will be of value in the next project phase, include:

- Social Value UK (formerly the SROI Network) http://socialvalueuk.org/ - (Nicholls, Lawlor, Neitzert, & Goodspeed, 2012; Social Value UK)

- Social Impact Scotland http://www.socialimpactscotland.org.uk/ - (NHS Health Scotland, 2014)

- The UK SROI Network 2012 Guide is a useful resource for understanding and implementing SROI (Nicholls et al., 2012)

- Impact map template from the Transformational Business Network (Transformational Business Network).

Table 7: Social Return on Investment – The Impact Map (Transformational Business Network)

Social Return on Investment - The Impact Map

SROI Network Spreadsheet for developing SROI analysis. Only to by used as part of SROI Network training. The spreadsheet does not include any guidance

Stage 1 ➡ **Stage 2** ➡ **Stage 3** ➡ **Stage 4** ➡ **Stage 5** ➡

Stakeholders	Intended/unintended changes	Inputs	Value £	Outputs	The Outcomes (what changes)								Deadweight %	Displacement %	Attribution %	Drop off %	Impact	Calculating Social Return				
					Description	Indicator	Source	Quantity	Duration	Financial Proxy	Value £	Source						Discount rate		0.0%		
Who will we have an effect on? Who will have an effect on us?	What do we think will change for them?	What will they invest?	Value £	Summary of activity in numbers	How would we describe the change?	How would we measure it?	Where did we get the information from?	How much change will there be?	How long will it last?	What proxy did we use to value the change?	What is the value of the change?	Where did we get the information from?	What would have happened without the activity?	What activity would we displace?	Who else would contribute to the change?	Will the outcome drop off in future years?	Quantity times financial proxy, less deadweight, displacement and attribution	Year 1 (after activity)	Year 2	Year 3	Year 4	Year 5
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
													0%	0%	0%	0%	£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
Total			£0.00														£0.00	£0.00	£0.00	£0.00	£0.00	£0.00
																	Present value of each year (after dsicounting)	£0.00	£0.00	£0.00	£0.00	£0.00
																	Total Present Value (PV)					£0.00
																	Net Present Value (PV minus the investment)					£0.00
																	Social Return £ per £					#DIV/0!

6.1.3 Social Cost-Benefit Analysis (SCBA)

The UK government introduced a guide to policy appraisal which promoted the use of social cost benefit analysis. *The Green Book: Appraisal and evaluation in Central Government* aims to promote policy efficiency and optimise the use of public funds (HM Treasury, 2011). A key contribution of this document is its details around how to go about valuing social costs and benefits for which there is no market price (

6.1.3 Social Cost-Benefit Analysis (SCBA)

Figure 17).

SCBA is a way to 'assess the net value of a policy or project to society as a whole through the context of 'utility', that is, through attaching a 'monetary value to non-market goods by looking at the impact that these things have on utility' (HM Treasury, 2011). This is considered through various market based approaches including stated preference, revealed preference, subjective well-being approach, and direct assessment (

Figure 17).

Importantly, the UK government policy appraisal guide is also a useful tool for dealing with issues such as: *distribution of benefits*, in which the impact of a program or policy varies depending on factors such as income level, age or education level; optimism bias; risk factors, and uncertainty.

Figure 17: Valuation Techniques (HM Treasury, 2011)
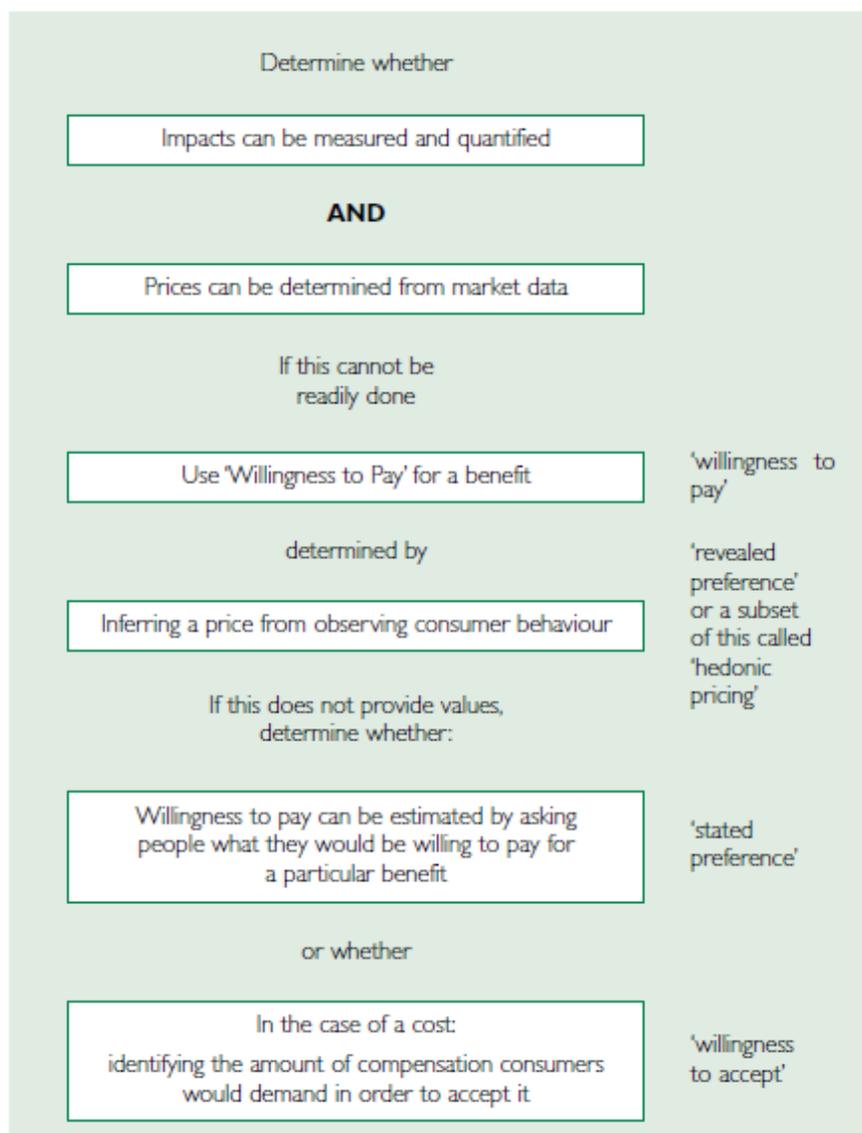
6.1.4 Well-Being Valuation Analysis (WVA)

The Well-Being Valuation Analysis (WVA) approach draws upon both the SROI method and traditional cost benefit analysis (Fujiwara, 2014; Fujiwara & Campbell, 2011). Developed specifically for measuring the social value of housing associations in the UK, the method emerged in response to the perceived lack of appropriate tools for quantifying social value on a large (i.e. sector-wide) scale.

This approach considers life satisfaction, and other housing and non-housing values. The methodology used is now well developed, and is explored in three key papers (Fujiwara, 2013; Fujiwara, 2014, Trotter and Vine, 2014). The approach estimates the impact of a good or service on people's subjective well-being, and then uses these estimates to calculate the exact amount of money that would produce the equivalent impact (Fujiwara 2014). The analysis draws on four UK datasets including: the *British Household Panel Survey*, a longitudinal survey of 10-15,000 people in the UK; *Understanding Society,* which

incorporated and replaced the previous, adding 60,000 new participants and a new set of variables; *Crime Survey for England and Wales,* survey of all aspects of crime by the Office of National Statistics; and *Taking Part*, which collects data in leisure, culture and sport.

Critically, this work provides a detailed investment decision-making framework for housing associations (**Figure 18**).

Figure 18: Investment decision framework for housing associations (Fujiwara 2013)
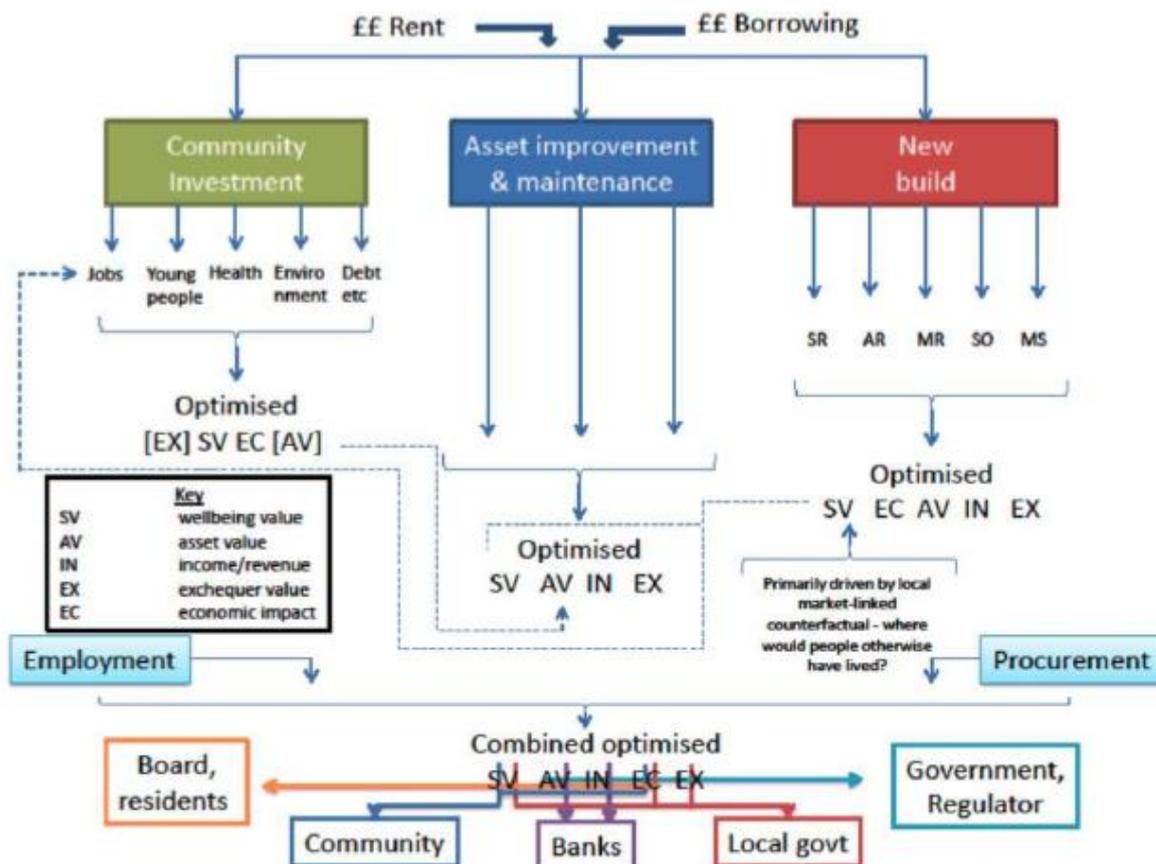
Building on the Fujiwara research, the *Social Impact Value Calculator* (Campbell Collaboration 2014) has been developed to assist in the estimation of value produced (Trotter & Vine, 2014). The excel-based tool supports housing organisations in applying the WVA method. The tool includes: a value calculator sheet (enter data for calculations); results sheets providing a summary of impacts; a description and evidence tab which explains each of the values and the evidence needed to apply them; and a relationships tab that identifies which values to apply together. It provides an extremely useful and tangible tool for estimating social value on a sector-wide scale.

6.2   Rethinking cost benefit - a Real Options approach

Professor Eduardo Roco and Dr Benjamin Liu are undertaking parallel research, *Financing Social Housing*, at Griffith University as an additional (separately funded) component to the

Rethinking Social Housing project. In order to compliment this current research they are addressing three key research questions (Liu & Roco, 2015a):

- *How is social housing financed in the short-term so it becomes sustainable in the long-term?*
- *How are funds used so that there is effectiveness as well as efficiency in the usage of funds in consideration of cost/benefit or effectiveness in terms of risk/returns in Australia?*
- *What is therefore the optimal mix or portfolio of source of funds as well as usage of funds that would result in effectiveness, efficiency and sustainability of social housing?*

6.2.1 The need for rethinking financing models

The Green Book (HM Treasury, 2011) outlines the use of options in appraisal and evaluation as well as procedures for policy or project decision making process and provides a guidance on valuing costs and benefits of options and some basic techniques of capital budgeting, as well as valuing techniques of valuing non-market Impacts of a project or policy, e.g., utility (Liu & Roco, 2015a). Further to this, the Magenta Book (Fujiwara & Campbell, 2011) *provides technical guidelines on the statistical techniques to be used for inferring the impacts of policy interventions and also presents life satisfaction approach papers*. Liu and Roco consider the contribution of these papers as *interesting and useful in valuing cost-benefits of social housing in general*, but neither provide Australian specific and/or detail information for our current purposes.

Liu and Roco *contend that traditional methods alone may be too simple and do not accurately capture value (benefits) and risk (costs) associated with social housing and thus, an embedded real option approach is being proposed to value and evaluate programs and schemes for social housing (Liu and Roco 2015b). For example, Ravi and Reinhardt (2011) and Ravi (2012) attempt to measure and quantify the total returns on investment [Social Return on Investment (SROI)] of social housing covering four types of benefits relating to economic, educational, health and community inclusion, but their methods may suffer from simplicity through simple calculations of net present value (NPV). Without considering risk, costs and dynamics of market conditions, private investors may shy away from investments into the social housing sector, which is the Australian current situation and could be the reason why there is little involvement by private sectors in social housing.*

Liu and Roco (2015a) then provide analysis of current methods for finding profitable investment projects which is the key objective of capital budgeting (Brennan and Schwartz 1985a). The methods to be followed up and further explored include:

- ➢ **Discounted cash flow**
- ➢ **Option pricing model**

6.2.2   Building on traditional finance theory

Finance theories which inform this model development include: option pricing theory; risk and return theory; portfolio optimisation theory; theory of the cost of capital and capital budgeting; and others such as public-private sector theory and public goods theory (Liu & Roco, 2015a). In order to identify cost/benefit, the authors will perform dynamic and sensitivity analysis in the context of financing social housing. The key innovation is in applying 'finance theories to the evaluation of the private risk and returns of social projects or public goods with a focus on social housing' in order to develop a new model for financing social housing delivery, especially the application of option pricing theory.

Liu and Roco (2015b) identify *four techniques for valuing investment opportunities or project investment in terms of capital budgeting: payback rules, accounting rates of return, net present values (NPV) and real options (see Walters and Giles, 2000). NPV* (discussed previously) *is static calculation that fails to consider the many options that managers may have during the life of a project to expand, contrast, abandon or delay, or develop a new product or consider a new policy.* ***A real options approach to investment decision provides managerial flexibility by viewing the act of the exercise of a real option - an option on a real asset or project or strategic decision making. An embedded option is an option within another option.***

Real options *can include opportunities to expand and cease projects if certain conditions arise, amongst other options. They are referred to as "real" because they usually pertain to tangible assets such as capital equipment, rather than financial instruments.*

Taking into account real options can greatly affect the valuation of potential investments. Traditional valuation methods, such as NPV, do not include the benefits that real options provide. For example, in Smith's PhD thesis at Griffith University (Smith, 2012), Smith comprehensively analyses and demonstrates how real options can be used in three areas (real options): 1. Open, delay and abandon a coal mine in Australia; 2. Plantation of corns by farmers (real options: start to plant, wait or abandon) in the US; 3. Adaptation of renewable energy (real options): Start, delay and abandon of adoption of renewable energy in Australia. Traditional valuation methods do not work in such valuations. We will employ a similar numerical methodology in valuing social housing in consideration of social benefits and costs of social housing projects/schemes (Liu & Roco, 2015b).

Liu and Roco ask "how can we incorporate social costs and benefits into real options?" To this end they are proposing to modify existing real option formulae, following on from Ravi and Reinhardt (2011) and Ravi (2012), to measure the social costs and benefits in financial terms (dollars, may be called the social premium) and then incorporate them into real option valuation.

Figure 19 presents a graphical overview of likely development, for discussion.

Figure 19: Building a Real Options Model for Social Housing Delivery (adapted from Liu and Roco 2015b)
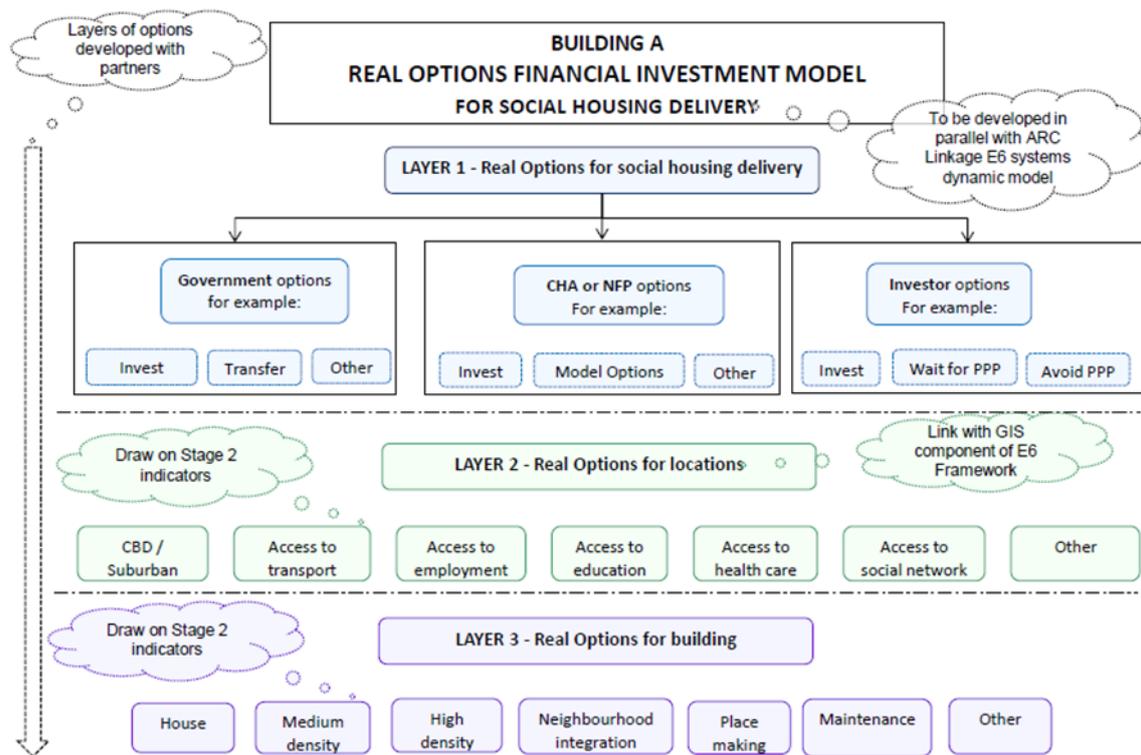
7. CONCLUSION

Key deliverables of this research include:

- Outcomes and indicators spreadsheets across the nine domains[3] have been finalised. Discussions with project partners in WA and Queensland will occur throughout August to prioritise these, in the context of their potential application in their organisations. This constitutes the extent of the case study activity at this time. This will inform the pilot case study activity to be undertaken in the extension project *Valuing Social Housing*.

- *Associations and Causality* paper drafted for dissemination to PSG members for consideration. Consultations taken place with A/Prof. Anne Roiko (Griffith School of Medicine).

- *Exploring Return on Investment* paper drafted for dissemination to PSG members. *Real Options* working paper distributed for comment, based on consultations with Prof Eduardo Roco and Dr Benjamin Liu (Griffith School of Business).

- Paper submitted to the Australian Journal of Social Issues - *The Economic and Social Benefit of Social Housing: Valuing Social Housing.*

- Abstract accepted for the National Housing Conference to be held in Perth on 26-28 October 2015.

- YouTube video developed. Draft to be provided to PSG on 26 August 2015. Qld footage includes Judy Kraatz (Project Leader) and Mike Myers (NAHC CEO). WA footage will include Keith Hampson (SBEnrc CEO), Sarah Mewett (WA Housing), Lyn Brun (Access Housing), Annie Matan (Deputy Leader) and Peter Newman (Program Leader).

- Media statement distributed and published:
  - HOUSINGWORKS, 10/12, 32-33
  - NTSHELTER E-NEWSLETTER – JUNE 15.
  - ENHR E-NEWSLETTER – MAY 15.
  - CHFA E-NEWSLETTER – EDITION 208, MONDAY 18 MAY 2015.
  - IMPACT@ GRIFFITH SCIENCES - 27 MAY 2015[4]

- SBEnrc extension project *Valuing Social Housing* proposal submitted to SBEnrc for consideration.

Leveraged investment for this current period includes:

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[3] Community, economy, education, employment, environment, health & well-being, housing, social, urban amenity
[4] http://app.griffith.edu.au/sciencesimpact/rethinking-social-housing/

- Brisbane Housing Company have confirmed their in-kind contribution to this and the extension project. Discussions are underway regarding an additional financial commitment to the ARC Linkage.

- NAHC and Griffith University confirmed funding of 2 PhD scholarships per year for 3 years as part of Sustainable Living Infrastructure Consortium. Discussions being held for two PhDs related to our current *Rethinking Social Housing* research to be included i.e. *Urban ecosystems, health and well-being* and *Financing Social Housing*.

- ARC Linkage Notice of Intent submitted to Griffith University on 24 July. Qld Stakeholder Workshop held on 20 July.

7.1 Next steps

Initial funding has now been approved by the SBEnrc Board for our project extension to the *Valuing Social Housing* project. This will include:

- Consolidate priorities for outcomes and indicators
- Finalising methodologies for both attribution and return on investment. Expert panels and stakeholder workshops will be convened throughout 2016 to assist with this.
- Three pilot case studies will be undertaken in each of: Western Australia (to maximise benefits of using the longitudinal data which they have access to from across many of the nine domains); Queensland (working in conjunction with one of their regional delivery agencies to prioritise the indictors, and develop an approach to how this framework can be operationalised in the context of QDHPW); and New South Wales along with NAHC to follow a potential pilot of personalised housing plans for social housing residents in that state).

7.2 Continuity of research effort

The table provides an overview of the activities associated with each of the three key projects through which the E6 Framework is being developed.

E^6 - Social Housing Strategic Evaluation Framework Key Development Activities	SBEnrc 1.31	SBEnrc 1.41	ARC Linkage
Outcomes and Indicators (O&I) Matrix			
Consolidate outcomes & indicators from review of literature, and discussions with partners	√		
Develop narrative for each indicator	√		
Prioritise indicators with partners (test cases in Qld & WA)	√		
Finalise comprehensive list of outcomes and indicators		√	
Identify key outcomes & indicators for system dynamic model			√

E[6] - Social Housing Strategic Evaluation Framework Key Development Activities	SBEnrc 1.31	SBEnrc 1.41	ARC Linkage
Causal Links (Association)			
Identify where these links are current 'proven'	√		
Develop draft methodology for establishing association based on existing theory, e.g. ecosystem science & health	√		
Establish expert panels for stakeholder consultation		√	√
Finalise methodology for establishing causal links		√	
Stakeholder & expert panel w'shops - identify associations		√	√
Return on Investment			
Identify relevant methodology, e.g. SCBA, SROI, WVA	√		
Consolidate established values into O&I matrix	√		
Identify gaps for future research	√	√	√
Refine methodology		√	
Work with associates to consolidate Australian-based ROIs		√	√
Data Gathering			
Identifying relevant datasets/existing surveys	√		
Identify gaps and how these may be filled	√		
Interrogate existing databases (e.g. ABS, HILDA) for relevant data		√	√
Negotiate additional questions in existing surveys		√	√
System Dynamic Model Development (GIS-based)			
Details being development			√
Case Studies			
Test case studies - test approach and methods - WA and QLD	√		
Pilot case studies - WA Housing, QDHPW & NSW with NAHC		√	√
Knowledge dissemination & skills development			
Work with core and affiliate partners to disseminate knowledge in their organisations	√	√	√
Work with industry associations to disseminate knowledge		√	√
Academic publications both Australia and internationally	√	√	√

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