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Analysis of Indicator Frameworks for Commonality

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Introduction

As part of the research being undertaken by the Sustainable Pathways 2 project (MAUX0906) ten indicator frameworks were analysed to determine whether or not there is a core set of indicators commonly used to measure well-being/progress. The frameworks are all well-being related though are referred to by a range of names e.g. well-being, better living, genuine progress, sustainability etc.

The indicator sets selected for analysis were produced by a range of different public and private organisations. Seven are for New Zealand, or regional New Zealand, and three are international. The Canadian framework is included as this 'Index of Wellbeing' is a model national project in the OECD's 'Measuring the Progress of Societies'. The Sustainable Australia report was included as this is a recently released comprehensive report reflecting important measures across the Tasman. The OECD Better Life Index reflects the work of the leading international agency working in the well-being space.

The following lists the well-being/progress indicator frameworks analysed, the organisation that produced the well-being measure, when it was produced, the number of indicators used and the data range covered:

- NZ GPI (EERNZ, Data from 1970-2006, 20 indicators)
- Working Towards Higher Living Standards for New Zealanders: May 2011 (New Zealand Treasury, 2011). 44 indicators, 4 main stocks: financial/physical/human/social/natural. (Data varies within the 1970 to 2010 range)
- Measuring New Zealand's Progress Using a Sustainable Development Approach:2008 Statistics New Zealand (Data varies within the 1987 to 2010 range 85 indicators on 15 topics)
- MARCO (Environment Waikato, Data from 2000-2011, 5 topics , 43 sub-categories, 117 indicators)
- NZ Institute "nzahead" Sept 2010. (thenewzealandinstitute, 2010) 16 measures, 60 indicators
- Wellington Region Genuine Progress Index (Data from 2001-2010, 9 themes, 86 indicators)
- Quality of Life Survey Six Councils Report (2012) 28 indicators (Quality of Life in Big Cities 2007 56 indicators in 11 domains[1])
- Canadian Index of Wellbeing (Michalos et al., 2011) (Data from 1994-2008 Waterloo University, 64 indicators (or headliners) in 8 domains)
- OECD Better Life Index (11 themes, 24 indicators). Outputs have been produced for, 2011, 2012, 2013 and 2014 but there is no trend data.
- Sustainable Australia Report (2013) (National Sustainability Council, 2013) 48 indicators + 8 contextual indicators

The 10 indicator frameworks were analysed as per the following steps:

[1] The 'topics' or 'themes' for measurement are also referred to as 'domains'

1. The first step undertaken was to look at the number and commonality of indicator 'subject spheres' used in the different frameworks. How indicators are collated for reporting purposes varies from framework to framework. At the top level these subject spheres are referred to by titles such as: Topics; Themes; Domains; and Stocks. Trends for aggregated indices are generally reported at this level.
2. Step 2 was to see if there was any consistency in the number of indicators used by each framework to measure well-being/progress.
3. Step 3 sorted indicators by 'subject sphere' (See Appendix A). How indicators are grouped varies from framework to framework depending on the format used for top level reporting. This step involved putting like indicators together.
4. The indicators used by each of the 10 indicator frameworks were then summed as a way to identify a 'core' indicator set.

Commonality of indicator subject sphere

Figure 1 lists the top level 'titles' employed to describe the topics/themes/domains/stocks used by the various indicator frameworks.

The number of topics/themes/domains/stocks level classifications ranges from five for MARCO (which has a three tier breakdown) to 20 for the Genuine Progress Indicator (which has one level for indicator reporting). Sustainable Australia has both 'indicators' for measuring well-being/progress and 'contextual' indicators to show the changes taking place in society.

At this top level "Environment" has the most detailed breakdown as can be seen from the number of green squares. Economic measures ranks second.

Figure 2 gives the legend for the colour coding used in Figure 1 and lists out the frequency of the 'subject sphere' occurrence in each of the 10 indicator frameworks.

The subject spheres 'Economic Measures', 'Environment' and' Health/Suicide' are in 9 out of the 10 frameworks. The indicator framework that omits these 'subject spheres' is the recent 'Quality of Life' survey. Earlier versions of this survey covered these areas but recent surveys have been pruned back by councils involved to reduce costs.

Voluntary/Unpaid work, Housing, Inequality and Democracy/Civic Engagement were subject spheres that were only used by one or two of the indicator frameworks.

Indicator Framework	No.	Top Level Description Used for Indicator Grouping Classified by Subject Sphere																
NZ Institute **"nzahead"** Sept (2010) 60 indicators (Data varies 1990-2008)	16	Household wealth x4	Economic measures GDP per capita x4	Unemployment x4	Innovation and business sophistication x4	Labour productivity x4	Educational achievement x4	Life expectancy x4	Suicide x4	Assault mortality x4	Inequality x5	Net migration of citizens x4	Agriculture and forestry land per capita x4	Water quality x4	CO2 concentration in atmosphere x1	CO2 emissions per capita x2	Invasive species x4	
Wellington Region Genuine Progress Index (2011) 86 indicators (Data 2001-2010)	9	Prosperous community x8	Entrepreneurial & Innovative community x4	Healthy community x11	Quality lifestyle x13	Regional foundations x5	Strong & tolerant community x12	Sense of place x6	Connected community x10				Healthy environment x17					
Treasury- Working towards higher living standards (2011) 44 indicators (Data varies 1970-2010)	10	Income x8	Wealth x4	Employment x4	Education /Skills x4	Health x4	Subjective well-being x4	Leisure x4	Security x4	Trust x4			Environment x4					
Stats NZ - Measuring NZ's Progress Using a Sustainable Development Approach (2008) 85 indicators (Data varies 1987-2010)	15	Economic resilience x6	Innovation x4	Health x7	Work, knowledge & skills x8	Culture & identity x4	Social connection & governance x6	Energy x6	Living conditions x6	Transport x5	Population x5		Waste x3	Biodiversity x5	Air and atmosphere x6	Water x7	Land use x6	
MARCO - Waikato Regional Council, 43 sub-topics 117 indicators (Data 2000-2011)	5	Sustainable economy x8 (19)	Quality of Life x8 (24)	Participation & equity x2 (5)	Culture & identity x5 (10)								water quality and biodiversity x14 (29)	Other environment x6 (30)				
The Canadian Index of Wellbeing (2011) - 64 indicators (Data 1994-2008)	8	Living standards x8	Education x8	Healthy Populations x8	Community vitality x8	Democratic engagement x8	Leisure & culture x8	Time use x8					Environment x8					
Quality of Life Survey Six Councils Report (2012) 28 indicators	8	Health and Wellbeing x7	Quality of Life x2	Crime and Safety x3	Community Culture and Social Networks x6	Council Processes x1	Built and Natural Environment x4	Public Transport x2	Lifestyle x3	(Quality of Life in Big Cities 2007 56 indicators in 11 topics)								
OECD Better Life Index (2014) 24 indicators	11	Income x2	Work availability x4	Educational attainment x3	Health standards x2	Life Satisfaction x1	Community Support x1	Sense of Safety x2	Housing x3	Work-Life Balance x2	Civic engagement x2		Environment x2					
Genuine Progress Indicator for NZ, AC,WRC 20 indicators (Data 1970-2006)	20	Services of public capital and consumption x2	Under/unemployment x2	Health (private) x1	Consumption adjusted for inequality	Overwork x1	Commuting x1	Household/ community work x1	Property related crime x1				Environment x10					
Sustainable Australia (2013) 48 indicators + 8 contextual indicators (Data varies 1880-2012)	15 + 4	Wealth and Income x3	Employment x4	Productivity and Innovation x2	Skills and Education x4	Health x5	Security x3	Housing x2	Transport and Communications x4	Community Engagement x5			Climate Change x4	Atmosphere x1	Land, Ecosystems and Biodiversity x3	Water x3	Waste x2	Natural Resources x3
															Population x3	Cultural Diversity x3	Regional migration x2	Land Use Change x1

Figure 1: Classification by Subject Sphere

Coding	Subject Sphere	Frequency
Yellow	Economic Measures	9
Green	Environment	9
Red	Health	9
Pale orange	Safety	6
Marine green	Education	6
Purple	Life satisfaction/Quality of Life	6
Grey	Transport	5
Pale yellow	Jobs & Employment	5
Evergreen	Community	5
Karki	Worklife Balance/Leisure	5
Pale blue	Culture	4
Taupe Brown	Entrepreneurial activity/productivity/innovation	4
Pink	Population	3
Dark blue	Infrastructure/ Council services	3
Light green	Inequality	2
Fawn	Democracy/Civic engagement	2
Brown	Housing	2
Aqua	Voluntary/Unpaid Work	1

Figure 2: Coding for Subject Sphere and Frequency Across the 10 Indicator Frameworks

Range in the number of indicators used to measure well-being/progress

The number of indicators used to measure well-being/progress ranged from 20 (Genuine Progress Indicator) to 117 (Marco)

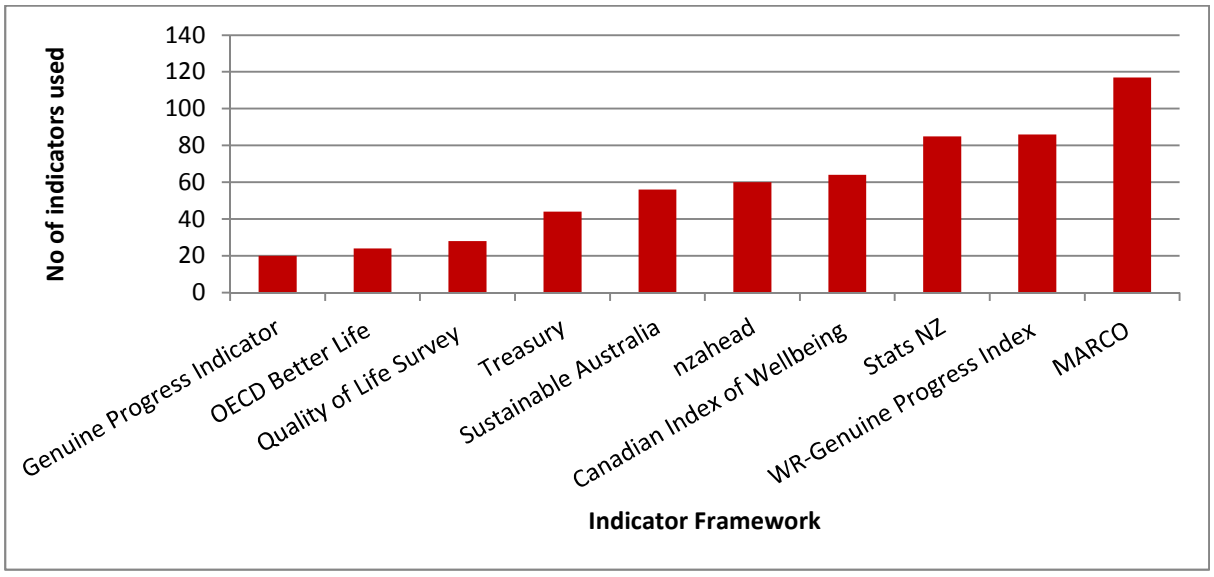

Figure 3: The Number of Indicators Used to Measure Well-being

There is no consistent pattern to the number of indicators used. There were 3 indicator frameworks that used less than 30 indicators; 3 indicator frameworks that used 31 to 60 indicators; and 3 indicator frameworks that used 61 to 90 indicators. Only one framework (MARCO) had more than 100 indicators.

Indicators most commonly used

Indicators were sorted into the 18 different 'subject spheres' listed in Figure 2. The indicators in each subject sphere are set out in Appendix A. The frequently occurring indicators were then counted to provide a means of establishing what a 'core indicator' set might look like. This data set is provided in Table 1.

Table 1: Summary of the Most Used Indicators in the 10 Frameworks

Environment	**Economic measures**	**Health**
1. Water quality/quantity x9 2. GHG emissions/Climate Change x8 3. Soil quality/quantity x7 4. Biodiversity x7 5. Air quality x6 6. Waste/contaminated sites/recycling x5 7. Energy related x4 8. Fish stocks x3 9. Composite measure (EF, GPI, Living planet) x3 10. Ozone x3 11. Non-renewables x3	1. Household disposable income. Per capita personal consumption x8 2. Household wealth x6	1. Life expectancy x7 (Measured by ethnicity, gender, healthy life expectancy, health expenditure) 2. Self-reported health x5 3. Mental health (stress, suicide) x4 4. Obesity x3 5. GP visits/availability x3
Safety	**Education**	**Life satisfaction/Quality of Life**
1. Assault, violent crime, victimisation x8 2. Sense/perception of safety x7 3. Crime against property x4	1. Educational attainment (preschool/primary/secondary/tertiary/adult) x8	1. Satisfaction with life survey x4 2. Quality of life assessment x3
Transport	**Jobs and Employment**	**Community**
1. Transport to work (travel time, cost, mode) x3 2. Public transport (boardings, perception, access) x3	1. Unemployment rate (also expressed as employment rate. Measured by youth, age cohort) x9 2. Labour force participation rate x3	1. Perception of social support x5 2. Sense of community x3 3. Pride in city/town and a great place to live x3

Worklife Balance/Leisure 1. Time devoted to leisure and personal care/exercise (includes arts and cultural activities. Measured by % of day, by age, income, ethnicity, gender) x3 2. Satisfaction with worklife balance x3	**Culture** 1. Ethnic/Cultural diversity x5 2. Cultural activities and facilities x4 3. Speakers of te reo/Learning te reo x3 4. Participation in sport/organised activity x3 5. Heritage places x3	**Entrepreneurial activity /productivity/innovation** 1. Research and development expenditure x4 2. Business innovation x4 3. Labour productivity x3
Population 1. Size, age profile, growth x2 2. Migration x2	**Infrastructure/Council services** 1. Internet/Broadband access x2	**Inequality** 1. Income inequality measures x 7
Democracy/Civic Engagement 1. Voter turnout x5 2. Influence and involvement in council decision-making x4 3. Trust in government x3 4. Representation of women x3	**Housing** 1. Housing affordability x6 2. Household crowding x3	**Volunteer and unpaid work** 1. Unpaid work outside home (covers value of and hours) x5 2. Volunteering rates x3

General Finding from the Analysis

The different indicator frameworks used vary depending on the 'value base' that the indicator framework has been designed to reflect. For example, the OECD Better Living Index reports on the well-being of the population in a country at a specific point in time. Other indicators such as the Genuine Progress Indicator are more concerned about sustained well-being over time so trends are important. To gauge sustained well-being we need to be concerned with, among other things, (1) maintaining or increasing stocks of natural, built, human and social capital; (2) the distribution of resources and pollutants across present and future generations; (3) the rights of other species; and (4) whether the long term trend are logistic S-curves rather than exponential curves (as all exponential growth curves level off at some point this avoids overshoot and collapse).

When the value base differs communities/agencies require different indicators to measure well-being/progress. There is also a need for specific indicators to reflect varying responsibilities, interests and locations of the communities/agencies. While there is no single formula or framework that fits all, this analysis has identified a core group of indicators consistently used to measure well-being.

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Appendix A