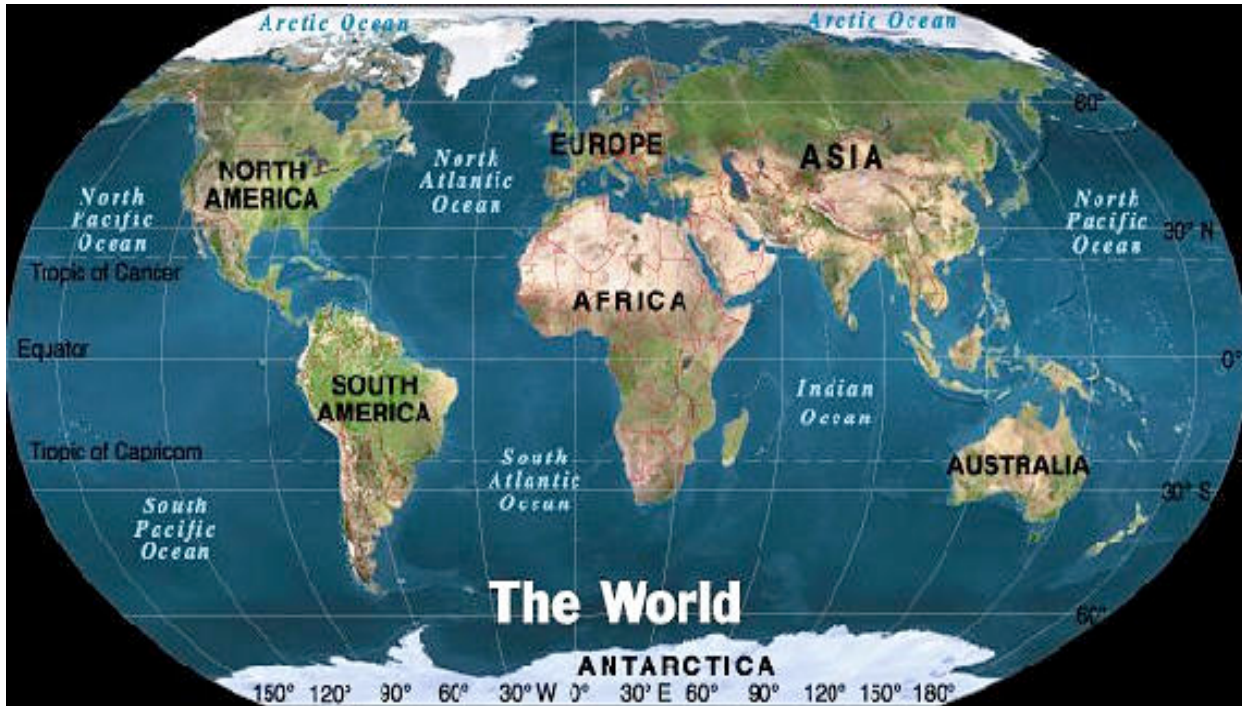# Beranghi Cooperative Ltd
Carbon Footprint report
2007

We're all in this world together

Please note that this report has been prepared using an Australian software tool containing Australian economic data. Input is from financial accounts only. No onsite impacts have been recorded. The results should NOT be used for reporting purposes.

Integrated Sustainability Analysis

Contents

Prepared for Beranghi Cooperative Ltd from data provided in the profit and loss statement, 30 June 2008 using the 2007 figures from the Beranghi Cooperative Newsletter #47, September, 2008 page 14; and using the Balancing Act Indicator Suite in the Australian BL3 software tool developed by Dipolar Pty Ltd and the University of Sydney

Note that a wide range of indicators is available including climate change and ecological footprint (see ISA Information sheet 6). To access other indicator suites there is no need to re-enter any data. Simply change your chosen indicators and request *calculate* and the software tool will do the rest.

Total Expenditure


Expenditure Graph for Beranghi Cooperative Ltd
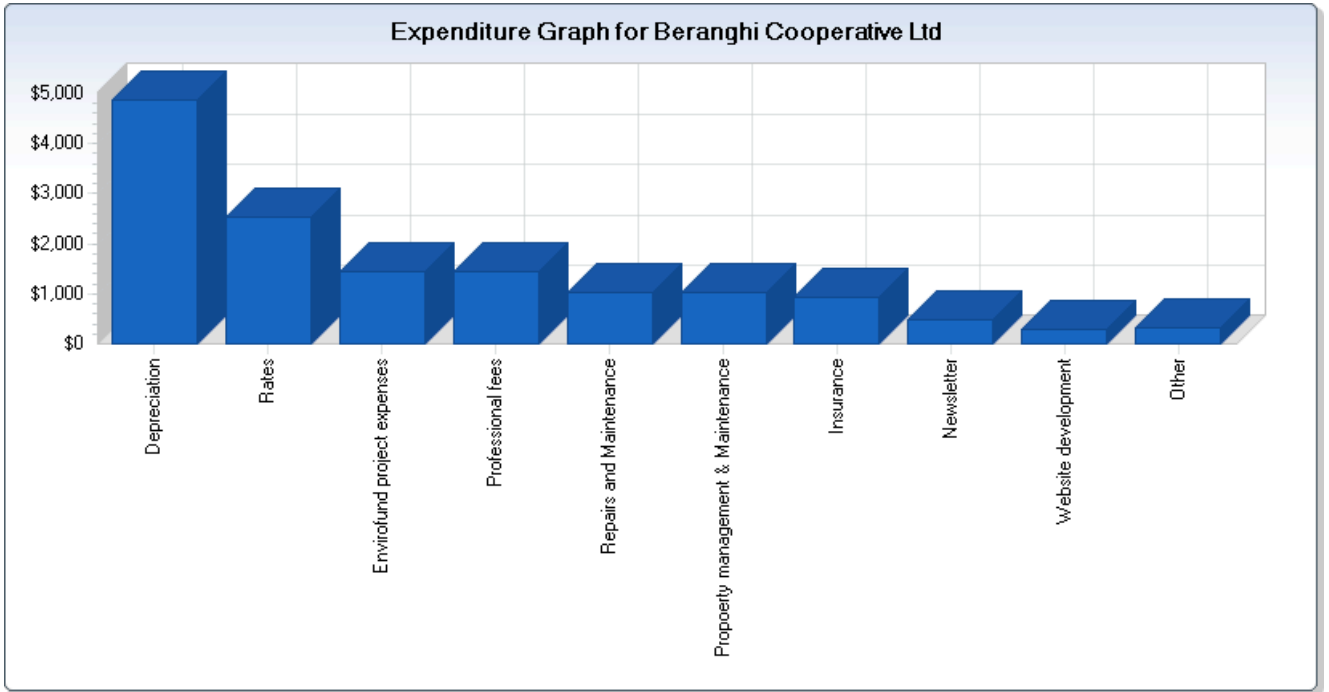
Expenditure

An organization's expenditure accounts can be complex when they are presented as tables of numbers. This first output from the software allows you to address the question: *How can I get a better overview of what my organization spends its money on?*

Note that the graph doesn't show items that are less than 1% of your total turnover, simply because the bars would be too small to read. From the expenditure graph it can readily be seen that depreciation and rates are the outgoings and that envirofund project expenses were reasonably high in 2007.

Total Revenue
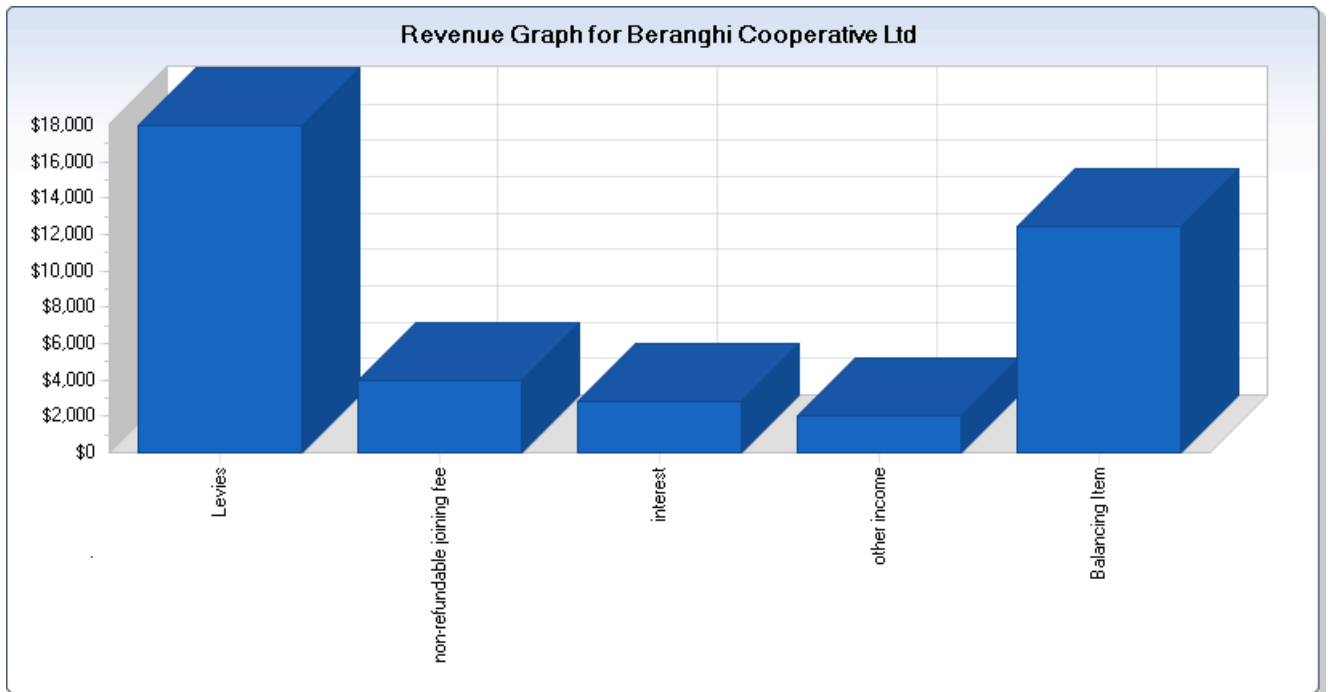
Revenue

This chart allows you to see your revenue accounts so that you can address the question:
How can I get a better overview of my organization's revenue and its sources?

Beranghi's income is almost exclusively from levies.

You will notice an item labelled *Balancing item* on the right. If the revenue and expense totals are not equal the *Balancing item* is automatically created to show the difference between them. In the case of Beranghi the software treats the balancing item as revenue.

Total Impacts

The *Total impact table* shows the organisation's total impacts for your chosen indicators, which is in this case the Balancing Act suite which includes your greenhouse gas footprint. This is the macro or most coarse form of results presentation.

Indicator	User Impact	Uncertainty Range	Total Sector Impact	Uncertainty Range	Percentage	Uncertainty Range
Family income	997 $	(877 - 1,134 $)	1,153,474,609 $	(1,144,351,402 – 1,162,670,550 $)	0.00009 %	(0.00008 – 0.00010 %)
Gross operating surplus	506 $	(429 - 598 $)	328,338,115 $	(326,220,943 - 330,469,026 $)	0.00015 %	(0.00013 – 0.00018 %)
Government revenue	118 $	(95.9 - 146 $)	79,045,509 $	(78,504,594 - 79,590,150 $)	0.00015 %	(0.00012 – 0.00019 %)
Greenhouse gas emissions	0.36 t CO2-e	(0.20 - 0.64 t CO2-e)	239,668 t CO2-e	(237,773 - 241,579 t CO2-e)	0.00015 %	(0.00008 – 0.00027 %)
Land disturbance	30.0 ha	(30.0 - 30.0 ha)	21,826 ha	(21,404 - 22,257 ha)	0.14 %	(0.13 - 0.14 %)
Water use	0.04 ML	(0.017 - 0.09 ML)	18,945 ML	(18,795 - 19,096 ML)	0.00021 %	(0.00009 - 0.0005 %)
Energy consumption	4.31 GJ	(3.84 - 4.84 GJ)	2,442,183 GJ	(2,422,867 - 2,461,653 GJ)	0.00018 %	(0.00016 – 0.00020 %)
Employment	0.022 emp-y	(0.013 - 0.04 emp-y)	27,306 emp-y	(27,000 - 27,615 emp-y)	0.00008 %	(0.00005 – 0.00014 %)
Imports	234 $	(192 - 284 $)	119,562,027 $	(118,616,372 - 120,515,221 $)	0.00020 %	(0.00016 – 0.00024 %)
Exports	134 $	(87.0 - 206 $)	24,503,853 $	(24,229,604 - 24,781,206 $)	0.0005 %	(0.0004 – 0.0008 %)

User Impacts

The sheet shows Beranghi Cooperative Ltd's total greenhouse gas emissions (0.36 t CO2-e). This is the first stage in a sequence, or hierarchy, of detail. It shows the macro level of detail; further tables show more detail (i.e. the meso level, see Commodity Breakdown results) followed by even greater detail at the micro level (see Structural Path Analysis).

Total means that impacts include an infinite number of upstream supply chains covering the entire economy and imports. The ISA method does not require you to nominate a boundary or cut-off point in order to perform its calculations, it includes the entire supply chain. The *Total impact table* deals in absolute numbers. For each indicator there is one number expressed in the appropriate unit. For example, the sheet shows total greenhouse gas emissions, including all of Beranghi's upstream supply chains. Absolute numbers do not indicate performance and can be deceptive.

Total Sector Impacts

The fourth column shows the total impact of the whole sector to which your organization belongs, in this case Beranghi Cooperative Ltd is being treated as though it were part of the Australian sector: *Interest Groups and Community Organisations*. User impacts and the total sector impacts thus reveal how significant the organization is nationally (also shown by the percentages given in the sixth column).

Uncertainty Ranges

The third and fifth columns show estimates of the uncertainties of the total impacts, based on realistic uncertainties in the economy-wide model on which BL[3] is based. It is assumed that there are no errors in the on-site data[1]. So for example, there is a 67% chance (representing one standard deviation) that Beranghi Cooperative Ltd ' greenhouse gas emissions are within 0.20 - 0.64 t CO2-e.

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[1] Onsite data was unavailable at the time of analysis therefore it is not included in these calculations. As soon as it becomes available it can be incorporated into the results.

Total Impact Shared Responsibility

The issue

When traditional Life-Cycle Assessment (LCA) looks at the upstream emissions embodied in, for example, a workshop or meeting held by *Beranghi Cooperative Ltd,* it adds up the emissions within *Beranghi Cooperative Ltd* , plus the emissions caused in resources and services that *Beranghi Cooperative Ltd* buys, in the office equipment, in telecommunications, in the meeting venue and catering. Now imagine *Beranghi Cooperative Ltd* plus the office equipment shop, plus the telecommunications operator, plus the meeting venue and catering all use traditional LCA to calculate and publicise their 'emissions responsibility'. The emissions caused by materials bought from the office equipment shop by *Beranghi Cooperative Ltd* appear in the office equipment shop's own emissions report, plus they appear in *Beranghi Cooperative Ltd* 's report. So they're double-counted. And it goes on. The emissions caused by say, energy use by the telecommunications operator appear in their emissions report (as an on-site impact), and also in *Beranghi Cooperative Ltd* 's report (as an upstream impact). If every business in the economy used traditional LCA to calculate and report their emissions, the sum of all their emissions would be much greater than the emissions of the whole of economy and the National Emissions Accounts would not balance

Full consumer responsibility

In life-cycle philosophy the individual consumer who attends a workshop organized by *Beranghi Cooperative Ltd*, is placed at the very end of the supply chain and assumes full *consumer responsibility*[2]. All impacts incurred during 'production' of the conference are heaped onto – or embodied in – the final 'product' (which is in this case a workshop or meeting but for a different organisation it could be a meat pie or garment) making the final consumer ultimately responsible for them. This is not a responsibility that the consumer feels should be entirely his/hers. However when s/he complains, the supplier could absolve him/herself of responsibility by saying 'if you don't like it don't come' (or 'don't buy'). It is then left to the consumer to investigate the product or service in order to be able to make a good decision. Information on which to make a good purchasing decision is often difficult to find. So often the knowledge rests with the supplier but the responsibility rests with the consumer.

Full producer responsibility

Other approaches assume full *producer responsibility*. For example, every country has to report its greenhouse gas emissions to the Intergovernmental Panel for Climate Change (IPCC). Some countries like Australia emit a lot during the production of goods that are exported. However the IPCC asks that these emissions appear in Australia's report, not in the report of the country that imports and consumes these goods. Which approach is better[3]?

Shared responsibility

Let's assume you as a shareholder of *Beranghi Cooperative Ltd* read a brochure about wind energy that says that wind farming is good because it creates employment. Even though it is more expensive, you convince the group to buy wind power from the WindyHills company in order to help create jobs. Your organisation wants to take the credit for this painful purchasing decision so you look up some figures in an LCA book, and calculate your positive impact on employment. In your annual report you write that you have created so-and-so-many jobs by the group's decision to purchase wind power. A while later you read the WindyHills report celebrating how much employment they have created. From the WindyHills

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[2] In 1774, Adam Smith remarked that "consumption is the sole end and purpose of all production" (In: An Inquiry into the Nature and Causes of the Wealth of Nations, ed. E.Cannan, Vol.II, Bk.IV, 179. Methuen and Co, Strand, 1904.)

[3] For further reading: J Munksgaard and K A Pedersen, CO_2 accounts for open economies: producer or consumer responsibility? *Energy Policy* **29**, 327-334, (2000).

perspective they sell wind energy; wind farming creates employment; so *they* have created the jobs and are entitled to celebrate this in *their* annual report.

Now those individual citizens who buy this more expensive energy directly from WindyHills, feel that they too should take some of the credit. They read both reports and recognise that it doesn't add up. You can't all claim to have created these jobs!

Really, Beranghi Cooperative Ltd WindyHills and the citizen/consumer all play a role in creating more jobs: WindyHills shoulders all the investment, development and risk that goes into wind farming, while Beranghi Cooperative Ltd and the consumer decide to spend their money on wind power even if it's dearer. And this role-sharing probably holds for many more situations in business and in life. ISA recognises that there are always two parties, and two perspectives involved in every transaction: the supplier and the recipient. *Within ISA, responsibility for impacts is fairly shared between them.* This applies to both burdens and benefits. It's like in our private life: it takes two to form a relationship, and we share the good times and the bad times[4].

Because each impact is shared between the supplier and the recipient, ISA's shared responsibility is not only a realistic and fair concept, it also gets rid of the double-counting problem. You decide that it will be much better for the good name of *Beranghi Cooperative Ltd* if you report on shared responsibility. You also realise that if you share out the kudos for job creation then it would also be fair to share out the responsibility for say, your ecological footprint or noise pollution. We are all in this world together.

In a world without shared responsibility everyone 'looks after their own backyard'. In a world of shared responsibility supply chain relationships become important. Organisations must communicate; decision makers must query their suppliers and communicate with their buyers about environmental, social and economic repercussions. Thus changes can be made not only to onsite production but throughout the whole economic web of supply and demand. This leads to new and fruitful discussions; a larger range of opportunities for action can be identified and targeted.

Shared responsibility: tabular results

As the table below shows, there are three agents who each bear some responsibility for the impacts calculated: Beranghi Cooperative Ltd other business supplied with services by Beranghi Cooperative Ltd[5], and individuals (in this case members) supplied with services by Beranghi Cooperative Ltd. The splitting between these agents is made on the basis of 50:50 sharing between consumer and producer. For more information on these calculations see ISA information sheets 2 & 13. All the total impacts reported here are according to this sharing of responsibility.

For completeness, the graphs and other columns in the table show the breakdowns of responsibility allocated to the other agents. Typically, Beranghi Cooperative Ltd is responsible for approximately 50% of the impacts, and the remaining impacts are split between other business and final consumers.

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[4] The idea of shared responsibility is not new. For example the New South Wales Environmental Protection Authority (EPA) has suggested extended producer responsibility schemes. However shared responsibility has only recently been consistently conceptualised by B Gallego and M Lenzen, A consistent input-output formulation of shared producer and consumer responsibility, *Economic Systems Research*, **17**(4) pp 365-391 (2005).

[5] 'Customers' or 'consumers' – either individuals or other businesses – usually provide an organization with its revenue and the organization in return provides a good or service to the consumer. In the case of interest groups and community organizations where funding often comes from donations, it is the donating organizations and individuals who are the 'customers' (or 'consumers'). They provide the organization with its revenue and in return they receive whatever tax and goodwill advantages that may accrue from their giving as well as any newsletters, information services, discussion forums etc that the organization provides in return for donations (or membership).

Indicator	Responsibility retained by Beranghi Cooperative Ltd	Responsibility passed on to other businesses	Responsibility passed on to final consumer
Family income	997 $	394 $	604 $
Gross operating surplus	506 $	200 $	306 $
Government revenue	118 $	46.8 $	71.7 $
Greenhouse gas emissions	0.36 t CO2-e	0.14 t CO2-e	0.22 t CO2-e
Land disturbance	30.0 ha	11.9 ha	18.2 ha
Water use	0.04 ML	0.016 ML	0.024 ML
Energy consumption	4.31 GJ	1.70 GJ	2.61 GJ
Employment	0.022 emp-y	0.009 emp-y	0.013 emp-y
Imports	234 $	92.4 $	142 $

According to the table above Beranghi Cooperative Ltd retains responsibility for the creation of 0.36 t CO2-e (i.e. 50% of the total) while other organisations that support Beranghi Cooperative Ltd through grants for example accept responsibility for 0.14 t CO2-e and individuals accept responsibility for 0.22 t CO2-e.

When Beranghi Cooperative Ltd looks at its Triple Bottom Line account it can see that it is responsible for creating 0.044 employment years in its supply chain; 0.022 employment years can be claimed by Beranghi Cooperative Ltd and 0.022 emp-y are passed on to the businesses and individuals that support its work.

Total Intensities

Apparently a grasshopper can jump 7.6 metres but a flea can only jump 1.1 metres. Since you can't make flea and grasshopper the same size and pit them against each other to see which is really the better jumper you might instead compare their jumping capacity by measuring number of body lengths of jumper per meter jumped. You would find that a grasshopper jumps only 20 times its body length while a flea jumps 350 times its body length - that's like a human jumping the length of a football field. So if you want to compare the jumping capacity of human, flea and grasshopper you have to first level the football field.

In a similar way the calculation of *total intensities* levels the football field for your organisation. It enables your organisation to make comparisons with others in your sector independent of the size of the organisation or the sector. This means that an organisation can be compared with competitors in its industry sector regardless of their comparative sizes. *Intensities* are therefore an appropriate measure of performance. *Total intensities* provide a macro level of detail. *Total Intensities* answers the question: *How well are we are doing compared to the rest of our sector? Where are our strengths and weaknesses?* and *Where do we concentrate our efforts?*

The *total intensities table* shows total impacts per dollar ($)'s worth of output. They're labeled 'total' because they cover all upstream supply chain impacts - just like the total impacts table. The units are expressed in, for example, g per $ (g/$) or employment-years per $ (emp-y/$). The units can be adjusted to ensure that they are easily readable

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Indicator	Beranghi Cooperative Ltd	Uncertainty range	Total Sector Intensity	Uncertainty Range
Family income	9.14 ¢/$	(8.04 - 10.4 ¢/$)	55.6 ¢/$	(55.4 - 55.9 ¢/$)
Gross operating surplus	4.64 ¢/$	(3.93 - 5.48 ¢/$)	15.8 ¢/$	(15.8 - 15.8 ¢/$)
Government revenue	1.09 ¢/$	(0.88 - 1.34 ¢/$)	3.81 ¢/$	(3.80 - 3.82 ¢/$)
Greenhouse gas emissions	32.9 g CO2-e/$	(18.5 - 58.3 g CO2-e/$)	116 g CO2-e/$	(115 - 116 g CO2-e/$)
Land disturbance	27.5 m2/$	(27.5 - 27.5 m2/$)	0.11 m2/$	(0.10 - 0.11 m2/$)
Water use	3.65 L/$	(1.53 - 8.68 L/$)	9.13 L/$	(9.09 - 9.18 L/$)
Energy consumption	395 kJ/$	(352 - 444 kJ/$)	1,177 kJ/$	(1,172 - 1,183 kJ/$)
Employment	0.23 emp-min/$	(0.14 - 0.39 emp-min/$)	1.52 emp-min/$	(1.50 - 1.53 emp-min/$)
Imports	2.14 ¢/$	(1.76 - 2.61 ¢/$)	5.76 ¢/$	(5.74 - 5.79 ¢/$)

The *total intensities table* shows that Beranghi Cooperative Ltd's greenhouse gas emissions per dollar's worth of service provided are 32.9g while the sector average is 116 g per dollar's worth of service. Water use is 3.65 litres per dollar's worth of service provided compared to a sector average of 9.13 litres. However Beranghi's activities only create 0.23 employment minutes per dollar's worth of service compared with a sector average of 1.52 employment minutes per dollar.

Total Intensities - Benchmark Spider

Benchmark Spider for Beranghi Cooperative Ltd against benchmark: Interest groups and community organisations
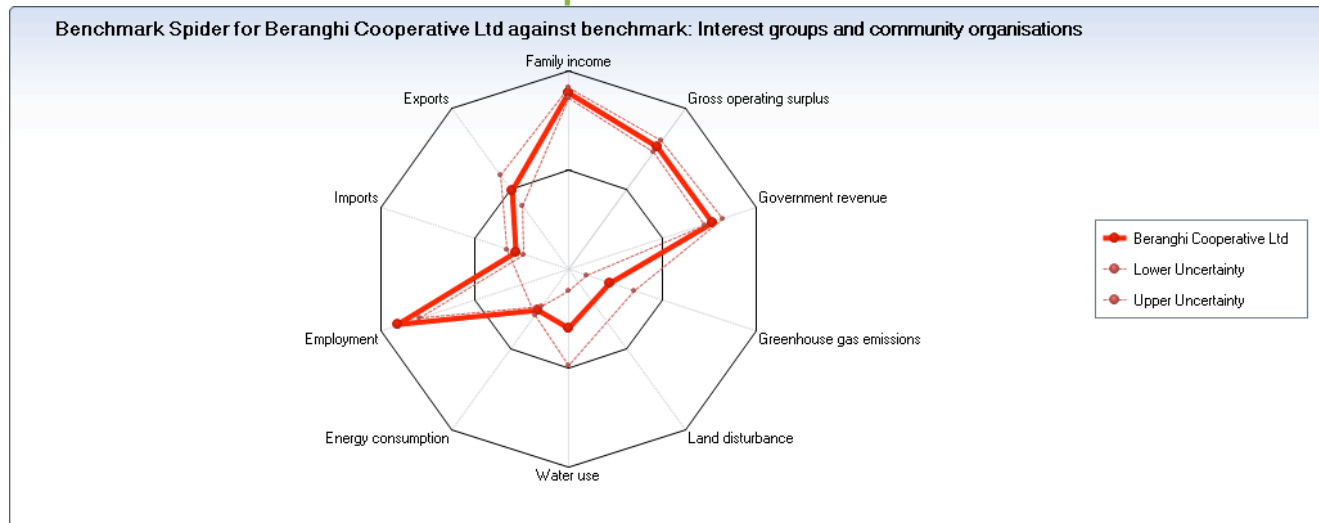
The spider diagram depicts the relative performance on all indicators in one integrated way. The consistency in boundary setting and the impact calculation of the ISA methodology guarantees that the TBL indicators shown in the Benchmark Spider can be compared, and that trade-off analyses are valid. The fact that each indicator is calculated in the same way allows them to be shown in the same diagram. If they were calculated differently it would not be possible to show them in the same diagram and any comparisons between impact of indicators would be meaningless.

The *Benchmark spider* shows how the intensities of *Beranghi Cooperative Ltd* measure up against the industry sector benchmark, *interest groups and community organisations*. The **bold polygon** (*performance polygon*) represents the TBL performance of *Beranghi Cooperative Ltd.* If points of the *performance polygon* fall on the inner black benchmark polygon *Beranghi Cooperative Ltd* ' performance equals that of the benchmark (or sector average). In other words *Beranghi Cooperative Ltd* would be performing as well as others in the sector (e.g. exports).

If the points of the *performance polygon* fall inside the benchmark polygon (or sector average) then *Beranghi Cooperative Ltd* is performing better than the sector average.

In the spider graph above *Beranghi Cooperative Ltd* ' performance on greenhouse gas emissions, water use, energy consumption and imports is better than that of the rest of the sector.

In the area of employment Beranghi Cooperative Ltd does not do as well as the sector average. This is mainly because Beranghi itself does not have any direct employees. On family income Beranghi is also below the sector average. This is also likely to be because Beranghi itself does not directly pay wages.

Note that there is an underlying assumption that, for example, more employment or less water use per dollar of output is 'good' and more Exports and Gross operating surplus per dollar of output is 'good'. Note also that the diagram has been drawn so that a performance that is better than average for that sector falls inside the inner benchmark polygon and a performance that is worse than average for that sector falls outside the inner polygon. For example if *Beranghi Cooperative Ltd* ' *employment* were to be better than the industry sector average then the point would be placed inside the inner benchmark polygon of the spider diagram. This would make *Beranghi Cooperative Ltd* ' polygon contract to enclose a smaller space, closer to the centre of the web.

Remember: The Smaller the Better! Dips are good and spikes probably need attention!

The scale of the spider diagram is logarithmic, which means that if a point of the *performance polygon* lies on the outer black polygon your performance is ten times worse than its competitors in the rest of the sector. If it lies in the spider diagram's centre the performance is ten times better. Looking at the spider diagram at a glance the smaller the area enclosed by the *performance polygon* the better is your performance. Spikes in the *performance polygon* indicate where an organisation is not doing so well and dips show its strengths.

The two dashed polygons on either side of the bold polygon show you the range of your TBL performance, due to data uncertainty. For example, even though the water use point lies inside the benchmark polygon, there is a chance that *Beranghi Cooperative Ltd* is actually performing the same as the average. This is because the point on the dashed lines sits on the benchmark polygon.

Commodity Breakdown

| Rank	Commodity	Impact
1	Agricultural machinery and parts	0.06 t CO2-e
2	Motor vehicle and lawn mower repairs	0.05 t CO2-e
3	Local government	0.05 t CO2-e
4	Accounting services	0.04 t CO2-e
5	Wholesale trade	0.04 t CO2-e
6	Non-building construction	0.03 t CO2-e
7	Construction machinery	0.020 t CO2-e
8	Plant nurseries	0.019 t CO2-e
9	Road freight	0.013 t CO2-e
10	Property services	0.012 t CO2-e
11	Typing, copying and mailing	0.010 t CO2-e
12	Advertising services	0.006 t CO2-e
13	Insurance	0.0027 t CO2-e
14	Postal services	0.0005 t CO2-e
15	Banking	0.00008 t CO2-e

Commodity Breakdown

In this more detailed breakdown, these listings rank the sectors in terms of their contribution to the total impact of your organisation. In general, the rankings can vary a lot for different indicators.
Only the top 15 ranked items are shown, but these generally cover virtually all of the organsation's impacts. A commodity breakdown down tells you where in the economy in a general sense your impacts occur.

For example, in the commodity breakdown for CO2-e shown above, the top ranked item is 0.06 t of CO2-e involved in agricultural machinery and parts purchased directly or indirectly (i.e. hidden somewhere in the supply chain) by Beranghi Cooperative Ltd. This is most likely to be linked to repairs and depreciation of assets.

Commodity Breakdown Graphs

The commodity breakdown graphs follow on from the data presented in the Commodity Breakdown tables.
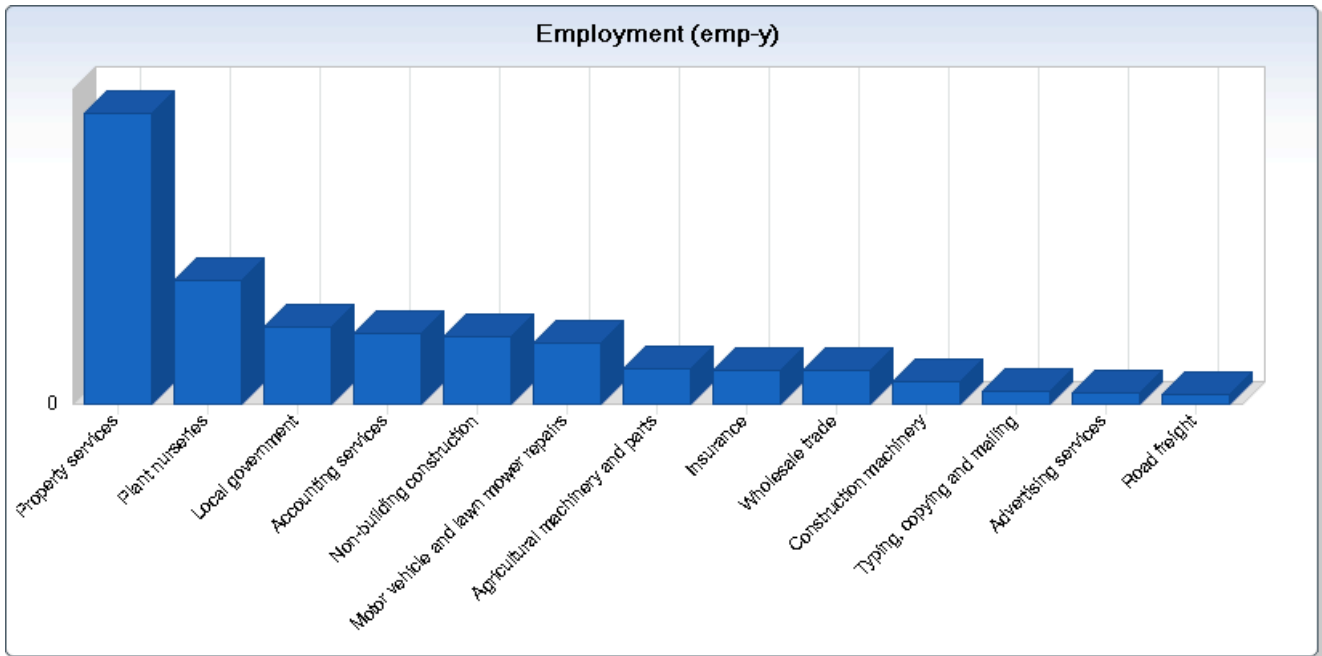
Contributions of less than 1% of the total impact are not plotted. The graph for employment is shown above. This is employment created in the supply chain by Beranghi's activities. Everything that Beranghi spends money on creates employment for someone along the entire supply chain.

Impact by Layer

The impact by layer tables are similar to the intensity results that are depicted in the Total Intensities by Layer graphs. In an Incremental way this shows the contributions to the total impacts from each production layer. Layer 1 means an onsite impacts. In Beranghi's case the only onsite impact recorded is for land disturbance. This is because Beranghi's land area was entered into the onsite impacts section of the software, however onsite impacts for water and energy use were not recorded. Layer 2 is the immediate suppliers of Beranghi Cooperative Ltd . Layer 3 is the suppliers of Beranghi Cooperative Ltd's suppliers, and so on throughout the entire supply chain.

Indicator	Layer 1	Layer 2	Layer 3	Layer 4	Layer 5	Layer 6	Layer 7	Layer 8
Family income	0.0 $	802 $	153 $	32.6 $	7.18 $	1.60 $	0.36 $	0.08 $
Gross operating surplus	0.0 $	381 $	94.6 $	23.8 $	5.50 $	1.24 $	0.28 $	0.06 $
Government revenue	0.0 $	94.4 $	18.6 $	4.18 $	0.94 $	0.21 $	0.05 $	0.010 $
Greenhouse gas emissions	0.0 t CO2-e	0.10 t CO2-e	0.17 t CO2-e	0.06 t CO2-e	0.022 t CO2-e	0.005 t CO2-e	0.0011 t CO2-e	0.00022 t CO2-e
Land disturbance	30.0 ha	0.0030 ha	0.004 ha	0.0016 ha	0.003 ha	0.0008 ha	0.00018 ha	0.00004 ha
Water use	0.0 ML	0.03 ML	0.0031 ML	0.0020 ML	0.0004 ML	0.00011 ML	0.000024 ML	0.000005 ML
Energy consumption	0.0 GJ	1.37 GJ	2.11 GJ	0.64 GJ	0.15 GJ	0.03 GJ	0.008 GJ	0.0016 GJ
Employment	0.0 emp-y	0.017 emp-y	0.004 emp-y	0.0009 emp-y	0.00021 emp-y	0.00005 emp-y	0.000010 emp-y	0.0000022 emp-y
Imports	0.0 $	179 $	42.3 $	9.77 $	2.18 $	0.49 $	0.11 $	0.023 $

In the table above it can be seen that most of Beranghi Cooperative Ltd ' greenhouse gas emissions occur in Layers 1 (0.10 t) and Layer 2 (0.17 t). That is, they are incurred by the suppliers of Beranghi Cooperative Ltd and the suppliers of the suppliers of Beranghi Cooperative Ltd.

Impact by Layer - Area Graphs are in essence a combination of the commodity breakdown and impact by layer. They show in a graphical way in which categories of the economy (groups of sectors) the impacts in the supply chain occur.
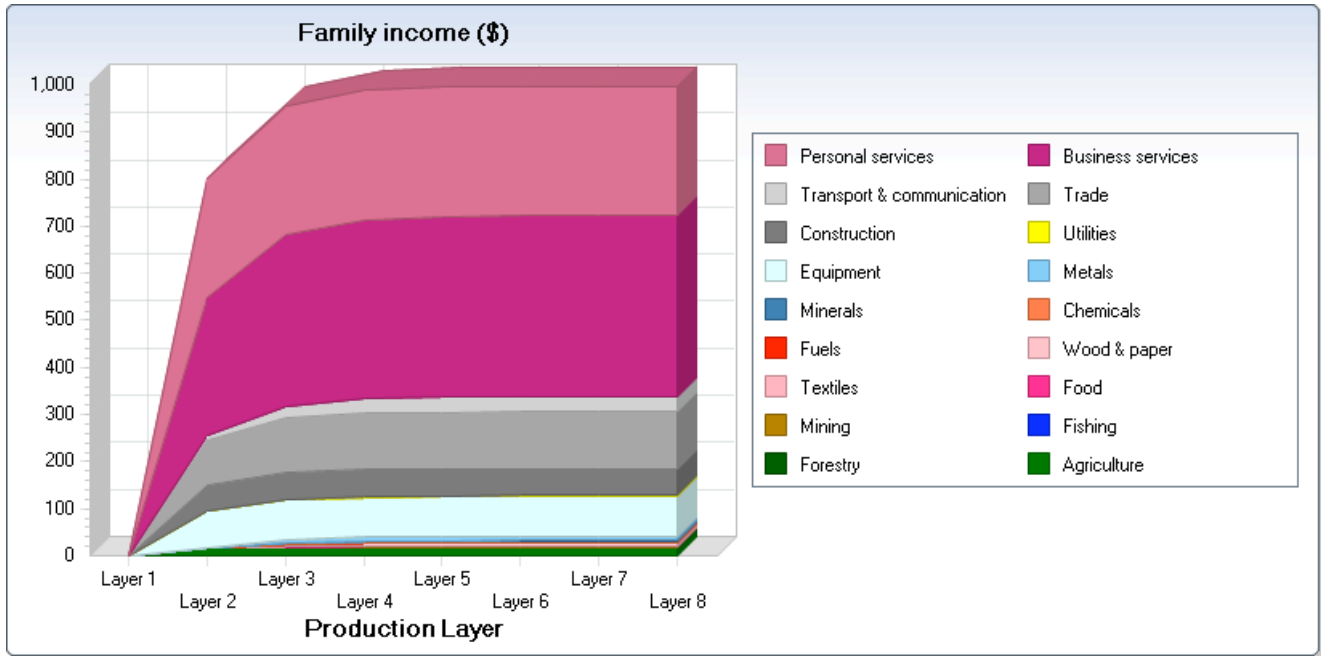
For example, in terms of the total family income for which Beranghi Cooperative Ltd claims responsibility the family income indicator shows that the majority of the impact is in business services and personal services occurring mainly in the 2nd and 3rd layer impacts.

Ranked Structural Paths

Structural paths are the most highly detailed or micro result. In addition to the Layer results, structural paths show individual sector contributions in the supply chain.

Rank	Path Description	Path Value	Path Order	Percentage in total impact
1	Motor vehicle and lawn mower repairs > Beranghi Cooperative Ltd	0.03 t CO2-e	2	9.06 %
2	Iron and steel semi-manufactures > Agricultural machinery and parts > Beranghi Cooperative Ltd	0.027 t CO2-e	3	7.62 %
3	Wholesale trade > Beranghi Cooperative Ltd	0.024 t CO2-e	2	6.67 %
4	Electricity supply > Local government > Beranghi Cooperative Ltd	0.022 t CO2-e	3	6.22 %
5	Electricity supply > Accounting services > Beranghi Cooperative Ltd	0.020 t CO2-e	3	5.45 %
6	Road freight > Beranghi Cooperative Ltd	0.012 t CO2-e	2	3.28 %
7	Electricity supply > Motor vehicle and lawn mower repairs > Beranghi Cooperative Ltd	0.011 t CO2-e	3	3.21 %
8	Electricity supply > Agricultural machinery and parts > Beranghi Cooperative Ltd	0.011 t CO2-e	3	3.19 %
9	Plant nurseries > Beranghi Cooperative Ltd	0.011 t CO2-e	2	2.99 %
10	Non-building construction > Beranghi Cooperative Ltd	0.009 t CO2-e	2	2.61 %
11	Iron and steel semi-manufactures > Construction machinery > Beranghi Cooperative Ltd	0.009 t CO2-e	3	2.43 %
12	Electricity supply > Typing, copying and mailing > Beranghi Cooperative Ltd	0.006 t CO2-e	3	1.56 %
13	Electricity supply > Property services > Beranghi Cooperative Ltd	0.005 t CO2-e	3	1.36 %
14	Electricity supply > Construction machinery > Beranghi Cooperative Ltd	0.004 t CO2-e	3	1.02 %
15	Softwoods > Pulp, paper and paperboard > Local government > Beranghi Cooperative Ltd	0.004 t CO2-e	4	0.98 %
16	Agricultural machinery and parts > Beranghi Cooperative Ltd	0.0031 t CO2-e	2	0.87 %
17	Electricity supply > Advertising services > Beranghi Cooperative Ltd	0.0031 t CO2-e	3	0.86 %
18	Iron and steel semi-manufactures > Iron and steel semi-manufactures > Agricultural machinery and parts > Beranghi Cooperative Ltd	0.0030 t CO2-e	4	0.84 %
19	Electricity supply > Wholesale trade > Beranghi Cooperative Ltd	0.0029 t CO2-e	3	0.80 %
20	Electricity supply > Iron and steel semi-manufactures > Agricultural machinery and parts > Beranghi Cooperative Ltd	0.0027 t CO2-e	4	0.75 %

For example, the greenhouse gas emissions structural path analysis shows that the layer 2 (2nd order) motor vehicle repairs accessed by Beranghi Cooperative Ltd embodies 0.03 t of CO2-e, representing 9.06% of the total greenhouse gas emissions impact of Beranghi Cooperative Ltd .

An example of a Layer 4 path (4th order) is shown as the following 15th ranked ghg emissions path:

Softwoods > Pulp, paper and paperboard > Local government > Beranghi Cooperative Ltd

representing the ghg contribution from the original softwoods plantation that is embodied in the pulp, paper and paperboard sector's supply to the local government sector that provides services such as vehicle registration to Beranghi Cooperative Ltd. This ghg path is 0.004 tonnes, representing 0.98 % of the total ghg emissions impact.

Stuctural path analysis thus provides detailed information for choosing either different suppliers in your supply chain or using different products altogether.

Rank	Path Description	Path Value	Path Order	Percentage in total impact
1	Property services > Beranghi Cooperative Ltd	0.007 emp-y	2	32.1 %
2	Plant nurseries > Beranghi Cooperative Ltd	0.0030 emp-y	2	13.9 %
3	Non-building construction > Beranghi Cooperative Ltd	0.0013 emp-y	2	6.12 %
4	Motor vehicle and lawn mower repairs > Beranghi Cooperative Ltd	0.0013 emp-y	2	5.92 %
5	Local government > Beranghi Cooperative Ltd	0.0010 emp-y	2	4.54 %
6	Insurance > Beranghi Cooperative Ltd	0.0006 emp-y	2	2.78 %
7	Accounting services > Beranghi Cooperative Ltd	0.0006 emp-y	2	2.77 %
8	Wholesale trade > Beranghi Cooperative Ltd	0.0005 emp-y	2	2.22 %
9	Construction machinery > Beranghi Cooperative Ltd	0.0005 emp-y	2	2.07 %
10	Agricultural machinery and parts > Beranghi Cooperative Ltd	0.0004 emp-y	2	2.04 %
11	Cleaning > Accounting services > Beranghi Cooperative Ltd	0.00023 emp-y	3	1.04 %
12	Road freight > Beranghi Cooperative Ltd	0.00021 emp-y	2	0.95 %
13	Business services > Accounting services > Beranghi Cooperative Ltd	0.00011 emp-y	3	0.53 %
14	Market research and other business management services > Accounting services > Beranghi Cooperative Ltd	0.00011 emp-y	3	0.49 %
15	Services to insurance > Insurance > Beranghi Cooperative Ltd	0.00010 emp-y	3	0.47 %
16	Hotels, clubs, restaurants and cafes > Accounting services > Beranghi Cooperative Ltd	0.00010 emp-y	3	0.47 %
17	Cleaning > Local government > Beranghi Cooperative Ltd	0.00009 emp-y	3	0.40 %
18	Advertising services > Beranghi Cooperative Ltd	0.00008 emp-y	2	0.38 %
19	Cleaning > Property services > Beranghi Cooperative Ltd	0.00008 emp-y	3	0.37 %
20	Motor vehicle parts > Motor vehicle and lawn mower repairs > Beranghi Cooperative Ltd	0.00008 emp-y	3	0.36 %

The Structural Path Analysis above shows where the employment is created in Beranghi's supply chain. Most of this is created in Property Services which includes property management fees identified in Beranghi's Profit and Loss statement for 2007. Item number 16 shows:

Hotels, clubs, restaurants and cafes > Accounting services > Beranghi Cooperative Ltd

This is the employment created in hotels, clubs, restaurants and cafes when the Accounting Services sector that provides accounting services to Beranghi spends money on catering.