

Australian national LCI database – plans and progress

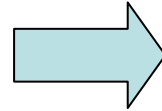
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- Brief history of inventory in Australia
- Structure of Inventory Project
- Data development guidelines
- Current and future activities

- **1997/99 - Australian LCA Inventory Data Project: CfD/UNSW, V/NSW-EPA et al.**



- 10 material groups
- Electricity and Transport
- Very little industry involvement
- Local and international data used

- **LCA Roundtable IMAS proposal (2001)**
- **LCI Data Inventory Group**
- **National LCA Data Resource Protocol (2002)**
- **700 datasets: used extensively in projects where CfD has collaborated (such as the alternative fuel comparison and waste management LCAs and water servicing projects)**
- **Public works New South Wales (LCAid tool)**
- **LCADesign building materials data**



Issues with current LCI development

- Isolated & uncoordinated data development within projects
- Inconsistent data across projects
- Private (confidential) and not accessible by public
- Not transparent and of untested quality
- Hard to communicate
- Embedded within databases of SW tools
- No updates (project LC)
- Partnership with the region and exporting nations on common data development and sharing of benefits become difficult

Current status: ALCAS LCI data inventory group made up of a small group of volunteers



Drivers for LCI development

- Green building movement is the main driving force for construction materials supply chain
- Driven by municipal government building projects
- Australian Green Building Council
- Quasi government land development organisation (VicUrban)



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Council House 2

City of Melbourne



Reservoir Civic Centre





VicUrban Eco-Selector for Aurora residential development



Floor structure – 20 points



Framing – 10 points



Wall cladding – 20 points



Roof cladding – 15 points



Fittings and finishes – 10 points



Landscaping – 5 points.

Floor structure (20 Points)



Application	Product Type	Category	Score	Tick if Specified	List your Suppliers	Tick if Invoice attached
Slab on Ground	Concrete with fly ash/slag content cement: 80%	✓ A	18	<input type="checkbox"/>		<input type="checkbox"/>
	Concrete with fly ash/slag content cement: 60%	✓ A	15	<input type="checkbox"/>		<input type="checkbox"/>
	Concrete with fly ash/slag content cement: 50%	✓ A	14	<input type="checkbox"/>		<input type="checkbox"/>
	Concrete with fly ash/slag content cement: 40%	✓ A	12	<input type="checkbox"/>		<input type="checkbox"/>
	Concrete with fly ash/slag content cement: 30%	✓ A	10	<input type="checkbox"/>		<input type="checkbox"/>
	Recycled aggregate in slab	✓ A	10	<input type="checkbox"/>		<input type="checkbox"/>
	Reinforcing steel – recycled content	✓ A	5	<input type="checkbox"/>		<input type="checkbox"/>
	Reo chairs - recycled	✓ A	1	<input type="checkbox"/>		<input type="checkbox"/>
	Membrane - recycled	✓ A	1	<input type="checkbox"/>		<input type="checkbox"/>
	Formwork – approved timbers	✓ A	5	<input type="checkbox"/>		<input type="checkbox"/>
	Waffle pods - polystyrene	✓ B	2	<input type="checkbox"/>		<input type="checkbox"/>
	Waffle pods – recycled tyres	✓ A	5	<input type="checkbox"/>		<input type="checkbox"/>
Full Waffle pod system	✓ A	5	<input type="checkbox"/>		<input type="checkbox"/>	

Category **A** ✓ – strongly recommended **B** ✓ – recommended **C** X – to be avoided if possible

Optimum:

- Concrete with fly ash/slag content cement
- Recycled aggregate
- Recycled reinforcing
- Waffle pods

Examples of slab system achieving 20 points:

1. Concrete with fly ash/slag content cement: 30% + Recycled aggregate in slab
2. Concrete with fly ash/slag content cement: 60% + Reinforcing steel – recycled content
3. Recycled aggregate in slab + Formwork – approved

Floor Structure

Framing

Wall Cladding

Roofing

Fittings

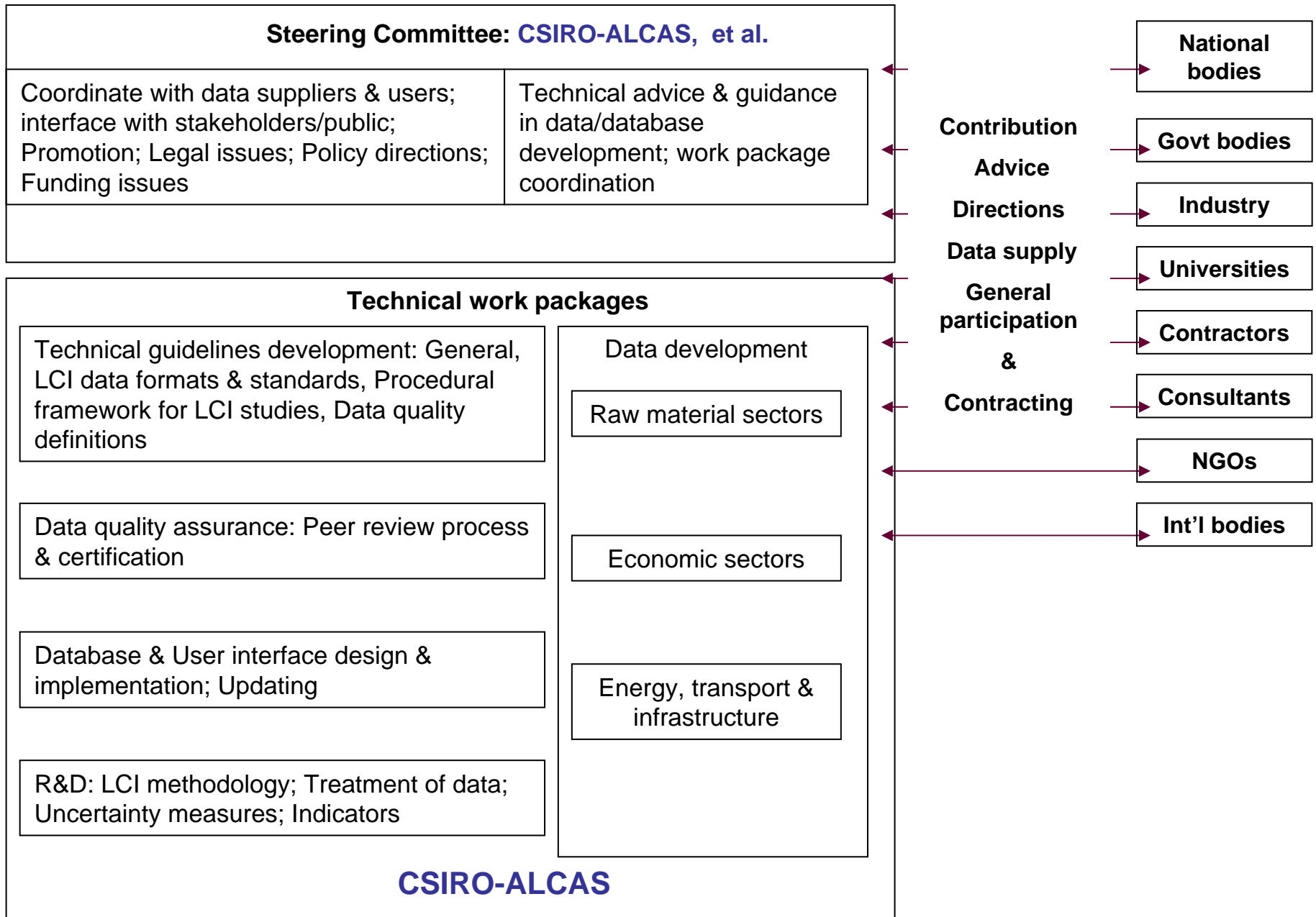
caping

New LCA Data Inventory project

- Commonwealth Scientific and Industrial Research Organisation (CSIRO) have recognised the importance of LCA – taking a leadership role in database development
- Joined with the Australian LCA Society (ALCAS) to develop LCA database proposal.
 - National coverage
 - Scientific reputation
 - Independence
 - Some internal resources

- Australian LCA Society made up of LCA professionals, companies and government agencies. ALCAS brings
 - LCA expertise
 - LCA consensus building
 - Representation of LCA users, developers and clients

Proposed NLCI Organisational Structure



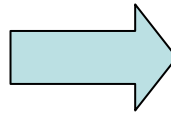


Roles of different players

- **CSIRO**
 - Key role in developing & initially maintaining database
 - Coordinate, integrate & manage contributions from stakeholders
 - Seed fund to kick-off NLCI DB
- **ALCAS**
 - Datasets from members
 - Development of Guideline for Data Development
 - Connection with industry and LCA practitioners
 - Convening working groups on inventory datasets were needed
- **INDUSTRY**
 - Supply of data and participation in working groups
 - Funding in whole or part of data development in their sector
 - Assistance in development of guidelines
 - End users of datasets developed
- **GOVERNMENT**
 - Financial support
 - Support through development of Sustainability Covenants and industry interactions
 - Support through development of Eco lable (greenhouse friendly, etc)

NLCI Organisation

- Establish NLCI Organisation
- Plan work packages
- Select steering committee
- Stakeholder engagement & involvement
- Other organisational & management issues



Planing & guidelines development

- Quality assurance
- Peer review

Database development

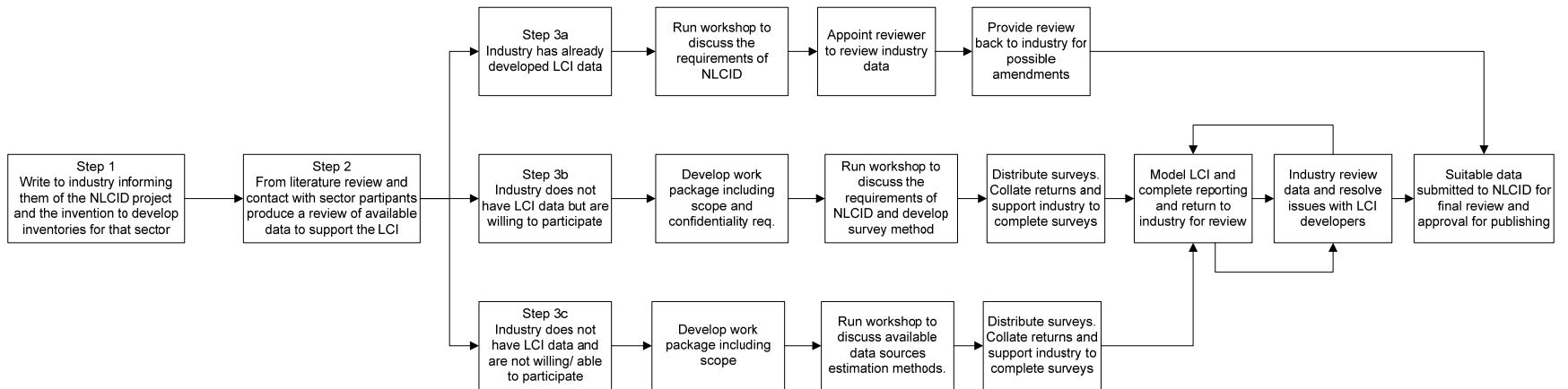
Set up data format

- Develop tool/software
- Develop database, user interfaces & user guide

Data development

- Review existing datasets (CfD et al)
- Identify data gaps
- Develop data guidelines
- Populate database
- Coordinate with data suppliers & users

- Data guidelines based on US LCI project and ecoinvent methodology report.
- Of particular interest to Australia are:
 - Land use categorisation
 - Sub compartment specification – low population, high- population, indoor etc.
 - Carbon accounting approaches
 - Allocation approach



- Data guidelines second draft out for comment
- Project plan and business plan currently in draft
- Planning for official launch at 5th Australian LCA Conference
- Confcentre
- seep

- Software delivery platform at early design stage
- Data development underway via in kind projects
 - Wood products (timber, MDF, Particleboard, Plywood, laminated timber products)
 - Electricity and transport being developed as part of CSIRO research programs
- In negotiation
 - Plastic sector case study
 - Plasterboard

User requirements

- Conformance: ISO/Aus
- Data criteria: transparency, screening, quality, peer review
- System boundary consistency: materials and products
- Regional differentiation
- Full accessibility: formats, SW platforms
- Coverage: sectors & user priorities

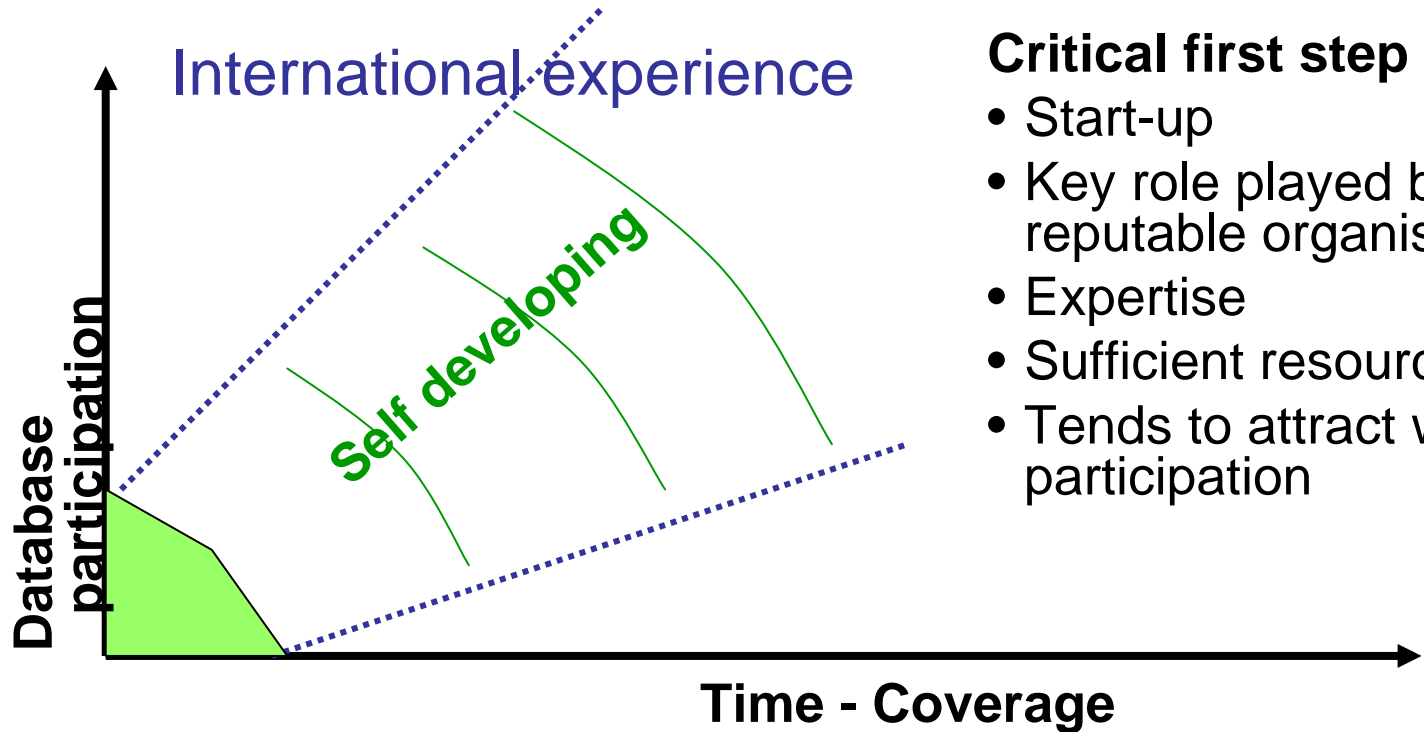
Technical/database

- Coverage & priority
- Accuracy & appropriateness (time, space, technology)
- Collection, collation, verification & peer review
- Documentation: meta information
- Database: formats, implementation, hosting & update

Organisational

- Structure
- Status/image building
- Stakeholder participation/involvement
- Capacity building
- Promotion & adoption
- Resources & funding

Moving forward: Critical first step

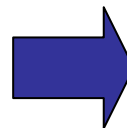


Critical first step

- Start-up
- Key role played by a reputable organisation
- Expertise
- Sufficient resources
- Tends to attract wider participation

Initial start-up

- Implement & host database
- Support of key stakeholders
- Populate database
- Encourage participation & contribution
- Improve political image



- **CSIRO-ALCAS** joint initiative
- CSIRO to commit seed funds to start off
- Participation by other key stakeholders essential



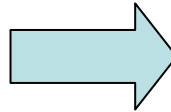
Next steps

- Australia is lagging behind in establishing a NLCI database
- Initial setting up & hosting the database is critical to move forward
- CSIRO & ALCAS committed to establish NLCI database
- Stakeholder involvement & commitment is essential to succeed
- Next steps to establish an organisational entity & work-packages as a means for moving the development of NLCI forward

Moving forward: Initial phase

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