

# Materials Stewardship

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Examples of from the Mining & Metals Industry

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Five Winds International

SDIMI 2007  
Milos, June 18<sup>th</sup>, 2007



Five Winds INTERNATIONAL

[www.fivewinds.com](http://www.fivewinds.com)

# Content

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- Introduction
- Sustainability and materials – trends
- ICMM – Materials Stewardship
- IZA – Zinc for Life
- CCBDA – Copper Stewardship (in paper)
- Conclusion



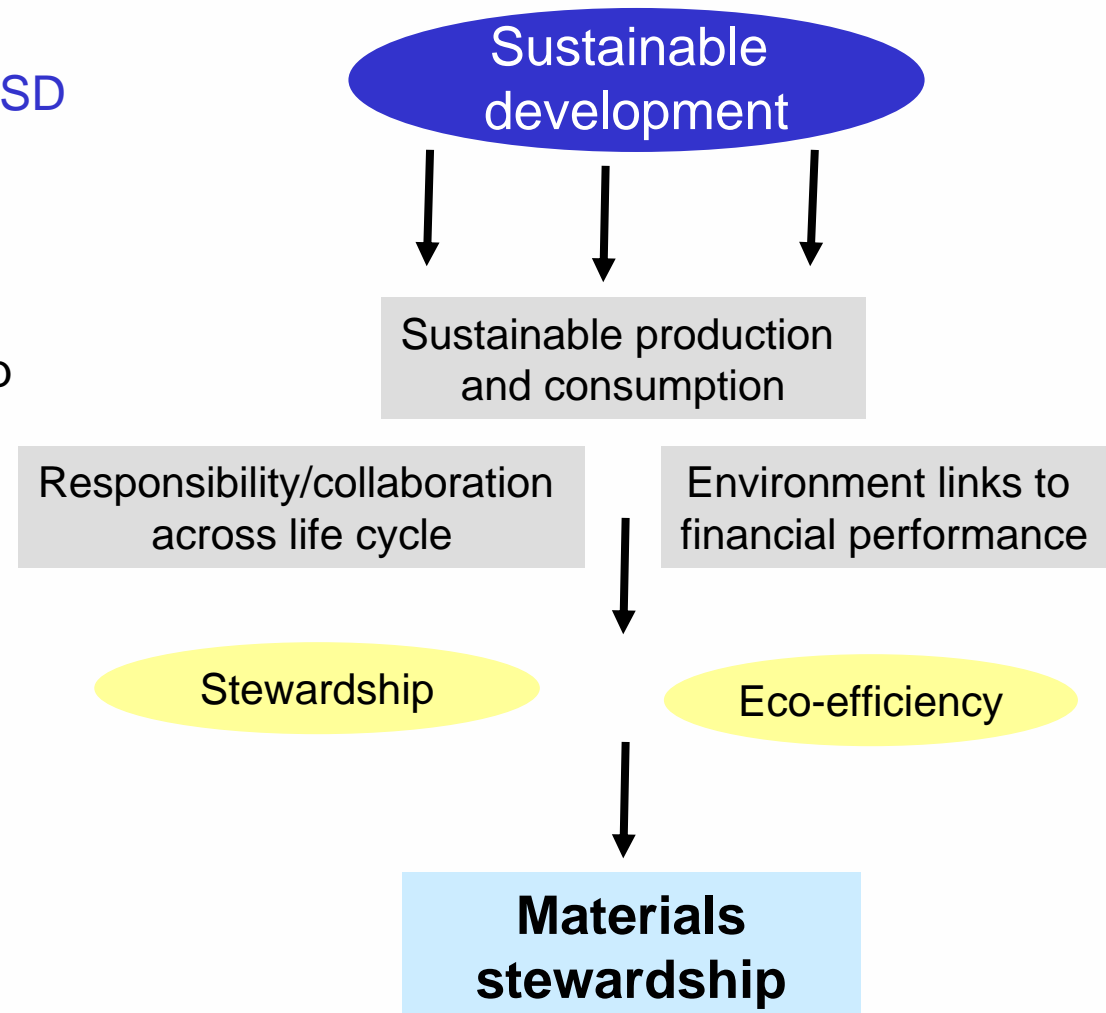
# Sustainability trends affecting material suppliers

- Development of **sustainability strategies by key downstream customers** and regulatory authorities;
- The availability of **tools and data** to support evaluation of materials e.g. utilization of life cycle assessment to evaluate environmental performance of materials by leading companies, governments and academics;
- Shift in focus from industrial facilities and processes to **product systems**
- **Competition amongst materials** to demonstrate their environmental “value” and competitive advantages (e.g., aluminium vs. steel, vs. plastics, vs. biopolymers in automotive applications);
- Integration of **systems perspective** into standards and guidelines (e.g., GHG Protocol, labelling and green building certification schemes);
- Proliferation of **GHG** emission trading schemes and mandatory reporting requirements.
- **Carbon footprint** analysis – regulatory and retail drivers



# Material Stewardship – Origin

- WCED – UNCED - WSSD
- Global Mining Initiative
- MMSD
- ICMM SD principles
- Canberra MS workshop
- IMM/MSWG
- Consultation Sessions
- Maximizing Value
- ICMM MS Policy
- Roll-out/Application



# What is Materials Stewardship?

- **Materials stewardship** means responsibly providing materials and supervising material flows to create maximum societal value and minimum impact on humans and the environment.
- Encompasses both **process stewardship** and **product stewardship**
- 4 Key Themes »»»

1. **Take a Systems Perspective**
  - Understanding material flows and life cycle benefits/risks
2. **Build new and strengthen existing relationships**
  - Interacting with other players in the value chain
3. **Optimize the production and application** of minerals & metals
  - Implementing Eco-efficiency
4. **Contribute to a robust, accessible base of information** to support decision making
  - Transparent sharing and reporting of data and information



# Maximizing Value – MS Guidance

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- Maximizing Value was created in 2006 to help ICMM and its members understand materials stewardship and its application. It supports a number of ICMM's SD Principles in particular:

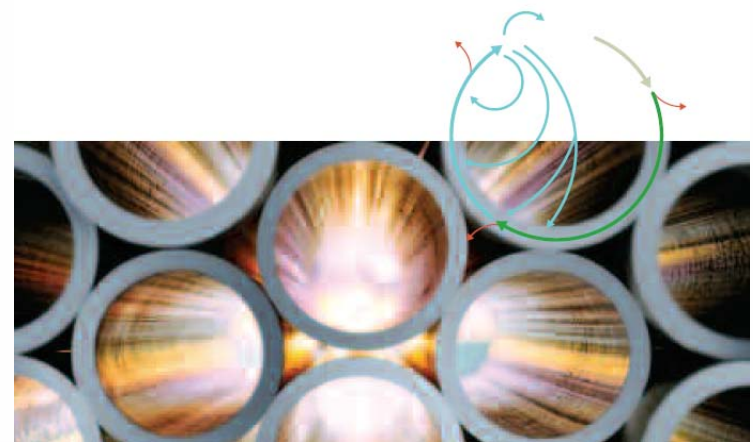
*# 8 “facilitate and encourage responsible product design, use, re-use and recycling and disposal of our products” and...*

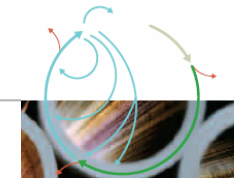
*# 5 “seek continual improvement in our health and safety performance”*

*# 6 “continually seek ways to improve environmental performance”*

## Maximizing Value

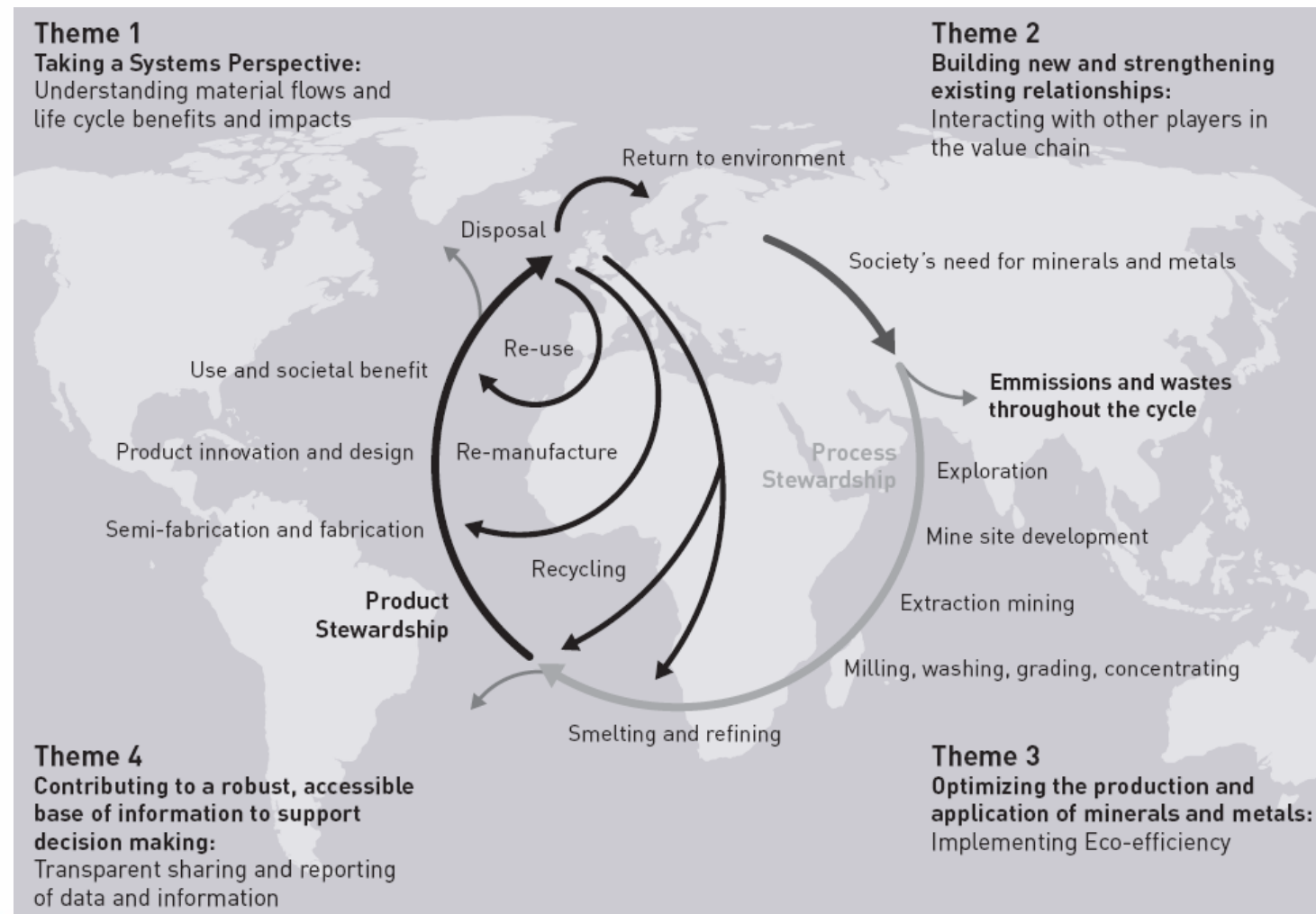
Guidance on implementing materials stewardship in the minerals and metals value chain





# Scope of Material Stewardship

## Maximizing Value



# Example of activities

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## Theme 1 – Systems View

- **Map** your key materials flows, applications and responsibilities.
- **Look downstream** to understand the social, environmental, health and safety issues and benefits for the key application for your material.
- **Look upstream** to learn about the firms supplying your operations with material, water, electricity, equipment, transportation and other inputs.

## Theme 2 – Relationships

- Consult with **co-workers** regarding stewardship opportunities
- Invite **colleagues** from outside your organization to speak about their materials stewardship activities.
- Meet with a **product design engineers, material specifiers** or **purchasing manager** from one of your key product or application markets





# Drivers and Business Value

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## Public commitments

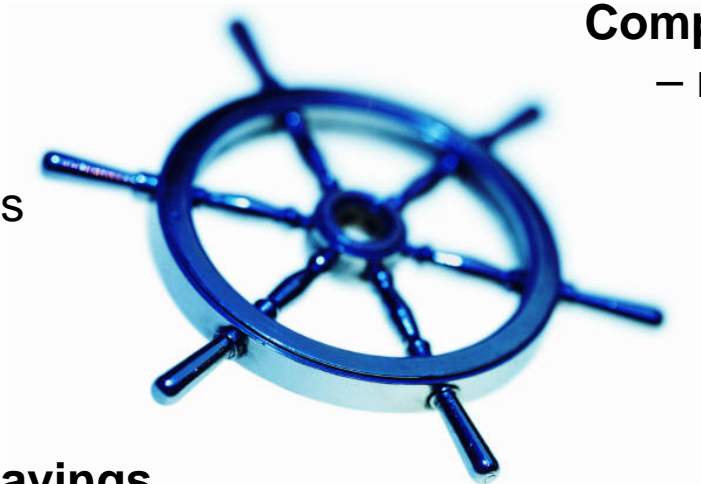
ICMM - SD framework

## Competition and market access

– materials of choice

## Market Development

- sustainable materials



## Reputation –

Maintaining license to operate

## Cost Savings

- eco-efficiency

## Regulatory

**Compliance** – stay in front of trends



## Other Activity

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- ICMM Materials stewardship policy
- Eco-efficiency action plan
- MS training/awareness building
- Communicate - link to IPP,  
Sustainable material management,
- Show action



# IZA – Zinc for Life


**International Zinc Association**  
*Zinc for Life Program*

- ✚ Zinc is Natural
- ✚ Zinc is Essential
- ✚ Zinc is Durable
- ✚ Zinc is Sustainable
- ✚ Zinc is Vital




Search

- [The Zinc for Life Project](#)
- [Zinc & Sustainability](#)
- [Zinc's Sustainable Attributes](#)
- [Life Cycle Information](#)
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### Zinc for Life

'Zinc for Life' is a program of the International Zinc Association, launched in 2006. It's main goal is to position zinc as a material of environmental choice for engineers, architects and other specifiers, by providing sound scientific information about the sustainability performance attributes of zinc products. The two complementary components of 'Zinc for Life' are:

**Outreach & Communication**  
This part of the program analyzes sector-specific requirements in zinc consuming industries and other key stakeholders, and establishes appropriate outreach and communication strategies to address these needs.

**Methodology & Data Generation**  
This part of the program examines the life cycle assessment (LCA) methodology with respect to zinc interests, contributes to the methodology development, and provides scientifically sound cycle data on zinc and zinc products for a variety of uses.

This 'Zinc for Life' website will be a vehicle to communicate the progress and outcomes of the program.

**Exploring the role of zinc in a sustainable society**



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**ZINC**  
for Life

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- **Purpose**

- Position zinc as a material of choice through information about sustainability performance attributes

- **Aims:**

- Balance between protection of current markets & expansion of existing / development of new markets

- **2 complementary parts:**

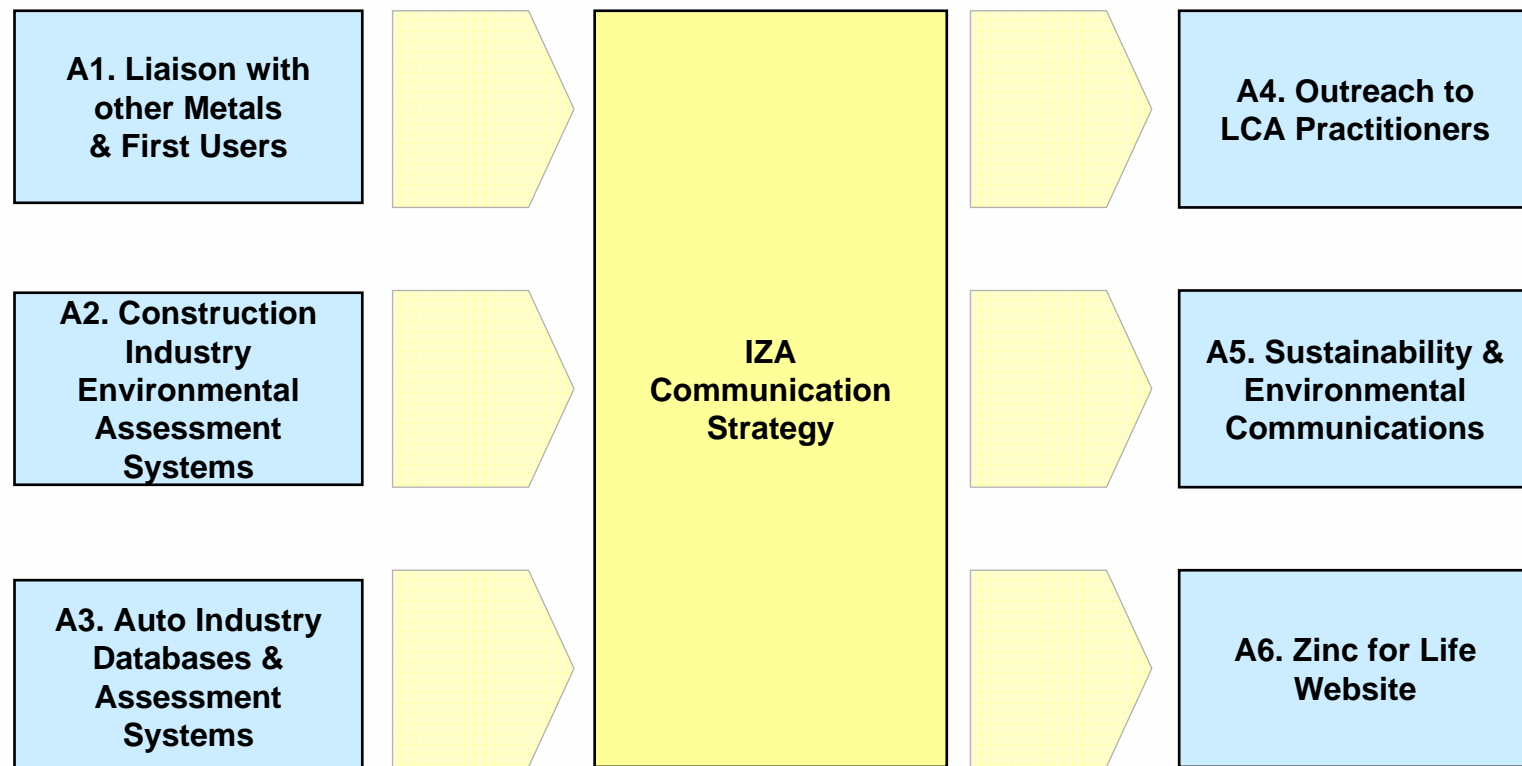
- Part A: Outreach & Communication
- Part B: Life Cycle Assessment Methodology & Data generation



# IZA – Zinc for Life

## Part A: Outreach & Communication

- Stakeholder engagement
- Reporting website: [www.zincforlife.org](http://www.zincforlife.org)



## A2: B&C Industry Env. Assessment Systems

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- **Goals**

- Monitor and contribute to Green Building schemes.
- Position Zn as material of choice with specifier

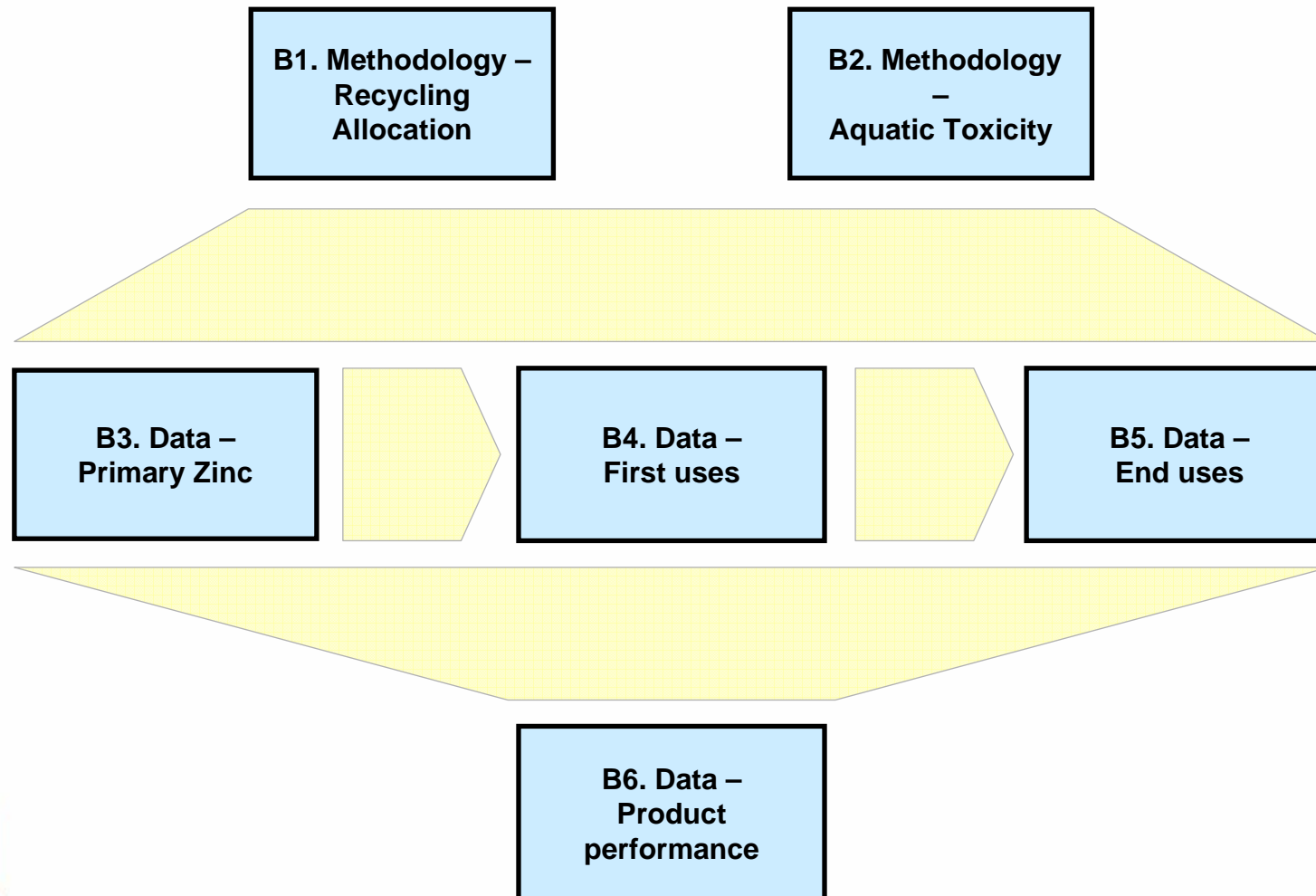
- **Activities**

- Key messages: durability — recyclability — cost-effectiveness (eco-efficiency)
- Opportunities – Asian markets (tropical, marine, corrosive environments), support trend toward steel frame construction
- List of relevant programs → prioritised: CEN, LEED (USA), BRE (UK)
  - Participation: CEN TC350 (EPDs) and TC351 (test methods)
  - Participation: USGBC, LEED Working Group B on »LCA-into-LEED«
  - Position zinc products: entries in BRE Green Guide
- Interviews: members, first-tier users
- Publications: Product case studies



# IZA – Zinc for Life

## Part B: Methodology & Data Generation



## B6: Data – Product Performance

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- **Goals**
  - Use Environmental Product Declarations (EPD) for LCI/LCA communication in applications where
    - marketing efforts can be strengthened and/or
    - opportunities/need for action due to regulation/standardization
  - Develop consistent, informative *Zinc for Life* external communication
- **Activities**
  - Priorities & template for Fact-sheet/EPD
  - Consult Environment Committee
  - Prepare Fact-sheets on key issues:
    - Recycling
    - Aquatic Eco-toxicity
    - LCA Gutters
  - Prepare IZA EPD program





# Conclusion

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- **Materials Stewardship** – key to implementation concepts:
  - Shared responsibility
  - Stewardship
  - Eco-efficiency
  - System perspective
- **Success factors:**
  - Development of cooperative partnerships
  - Sharing of environmental performance & risk information
  - Developing a greater understanding of how minerals & metals can support sustainable production & consumption



## Living Our Values

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Five Winds follows a Sustainable Purchasing Policy and offsets the climate impact of all our business travel, office energy use and computer use

