The SDG Roadmap aims to demonstrate how the zinc industry, particularly at the sector level, as well as through individual member company activities, can maximize contribution to the SDGs. This can be done through leveraging Impact Opportunities to support realization of the SDGs either through minimizing activities that have negative impacts, or through scaling up activities that have a positive impact.
Background
The Sustainable Development Goals (SDGs) outline a plan of action to address the world’s greatest environment, social, and economic challenges by 2030. In order to achieve these 17 Goals, ambitious and concerted efforts from across public and private sectors, wider society, and individuals are imperative.

The private sector in particular can look to the SDGs as a framework for progressive action and leadership towards sustainable development and delivering the 2030 Agenda. The SDGs present the private sector with a new framework that enhances license to operate, opens up new growth markets and helps to manage risks.

Purpose
The purpose of this Roadmap was to convene representatives from across the zinc sector to bring a combined perspective on where the greatest potential lies for the sector to contribute to the SDGs.

This Roadmap aims to demonstrate how the zinc sector, particularly at the sector level, as well as through individual member company activities, can maximize contribution to the SDGs. This can be done through leveraging Impact Opportunities to support realization of the SDGs either through minimizing activities that have negative impacts, or through scaling up activities that have positive impact.

By detailing Impact Pathways, this Roadmap aims to inspire collaboration, innovation and action throughout the sector and among peers.

Methodology
In this Roadmap, the zinc sector has employed the three-step framework outlined in the World Business Council for Sustainable Development (WBCSD) SDG Sector Roadmap Guidelines. In keeping with this framework, participating companies convened to form a shared understanding and agree sector alignment around several key factors including:

- the sector’s current SDG alignment and priority SDGs throughout the zinc value chain;
- the areas in which the sector has the greatest SDG Impact Opportunity; and
- tangible actions or Impact Pathways that the sector can take forward to achieve significant SDG impact.

SDG Sector Roadmap Methodology

1. Establish current position
   - Map SDG impacts across the sector value chain
   - Prioritize SDGs for the sector

2. Identify key impact opportunities
   - Identify key opportunities to impact the SDGs
   - Assess sector apportionment

3. Call to action
   - Identify barriers, potential solutions and impact accelerators
   - Identify short-, medium- and longer-term actions to advance SDG impact opportunities
   - Monitor, measure and report progress

An in-depth review and assessment of all 17 SDGs was undertaken with the International Zinc Association (IZA) Stewardship Working Group to identify the priority SDGs and Impact Opportunities. Publicly available information and company insights gathered through a series of webinars and questionnaires were reviewed and analyzed to understand current engagement with the SDGs and potential for improvement.

Taking into account the information reviewed and the diversity and complexity of the zinc sector’s value chain, ten SDGs were chosen as priority SDGs for the sector. The sector recognizes the interlinkages between, and importance of, all 17 SDGs and that the ‘priority’ SDGs described in this Roadmap can also have indirect impacts on other SDGs. Due to the complexity of these interlinkages, this Roadmap does not attempt to map, or explore in detail, all potential indirect impacts on all SDGs. SDG 17 was highlighted as a crucial goal but one which can be seen as ‘cross cutting’ across all themes.

Priority SDGs for the Global Zinc Sector

2. Zero hunger
3. Good health and well-being
7. Affordable and clean energy
8. Decent work and economic growth
9. Industry innovation and infrastructure
11. Sustainable cities and communities
12. Responsible consumption and production
13. Climate action
15. Life on land
17. Partnerships for the goal

Existing and Previous Sustainability Activities

IZA members have contributed to a variety of sustainability initiatives such as the IZA’s Zinc-for-Life program in 2008-2010. This program aimed to focus and strengthen the Association’s sustainability activities and strived to establish relationships with zinc users to understand their informational needs. The global zinc mining and smelting life cycle assessment (LCA) and stocks and flows (STAF) analysis were initiated as part of this program, both of which are updated regularly and are the basis for informed decisions in material choices in design and technological developments (e.g. for recycling).

The program also involved an association-wide agreement on a Sustainability Charter, which outlines comprehensive guiding principles for member companies.

Another association-wide sustainability initiative was IZA’s founding of the Zinc Nutrient Initiative (ZNI) in 2013, which seeks to address the complex challenge of zinc deficiency in crops, soils and humans. ZNI provides zinc-fortified fertilizers to improve food and nutrition security, contributing to human health and well-being.

In 2018, IZA outlined how the zinc sector can support each of the SDGs with member and IZA activities – see https://sustainability.zinc.org/ for more case studies on contributions to each SDG to date.
The Sustainability Circle

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The Zinc Sector and the SDGs – Current Position

Approximately 50% of the 14 million tons of Special High Grade (SHG) zinc produced each year go to protecting steel from rust and corrosion through galvanizing. A further 17% of annual zinc smelter production goes into zinc-alloying for example to be used for zinc die casting, and another 17% is used in brass and bronze. The remainder goes to other manufacturing uses, such as zinc sheet for use in buildings and construction, and into chemical compounds such as zinc oxide, that are used in almost everything from sunscreens to solar cells, as well as towards use in zinc additives for food or fertilizers.
Impact Opportunities and Actions

This Roadmap highlights ten SDG Impact Opportunities through which the zinc sector can maximize contribution to the ten priority SDGs. A series of corresponding tangible actions – or Impact Pathways – to help the zinc sector to achieve the Impact Opportunities are outlined in the Roadmap alongside an estimation as to the level of impact that can be achieved and the level of effort which is needed to do so. The SDG Impact Opportunities have been grouped into four themes which align with the priority SDGs:
1. Health and Wellbeing;
2. Energy Efficiency and Climate Resilience;
3. Operational Impacts to People and the Environment;
4. Sustainable Cities and Circular Economy.

Impact Pathways have been identified to provide tangible ways that the sector can realize the SDG Impact Opportunities through a series of actions. The following pages outline these Impact Pathways, which highlight potential actions to minimize current negative impact and scale positive impact.

SDG Impact Opportunities for the Global Zinc Sector

Theme 1. Health and Wellbeing

Theme 2. Energy Efficiency and Climate Resilience

Theme 3. Operational Impacts to People and the Environment

Theme 4. Sustainable Cities and Circular Economy

Cross-cutting SDG
### Health and Wellbeing

**SDG Impact Opportunity 1**
Eliminate zinc deficiency globally

#### Areas of contribution for priority SDGs

<table>
<thead>
<tr>
<th>Area</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.1</td>
<td>By 2030, end hunger and ensure access by all people, in particular the poor and people in vulnerable situations, including infants, to safe, nutritious and sufficient food all year round.</td>
</tr>
<tr>
<td>2.2</td>
<td>By 2030, end all forms of malnutrition, including achieving, by 2025, the internationally agreed targets on stunting and wasting in children under 5 years of age, and address the nutritional needs of adolescent girls, pregnant and lactating women and older persons.</td>
</tr>
<tr>
<td>2.3</td>
<td>By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment.</td>
</tr>
<tr>
<td>3.2</td>
<td>By 2030, end preventable deaths of newborns and children under 5 years of age, with all countries aiming to reduce neonatal mortality to at least as low as 12 per 1,000 live births and under-5 mortality to at least as low as 25 per 1,000 live births.</td>
</tr>
</tbody>
</table>

#### ACTIONS: Opportunity 1

- Scale up projects that deliver zinc (in food or fertilizers) to all those with zinc deficiency.
- Target education on the positive effects of zinc for diet.
Energy Efficiency and Climate Resilience

SDG Impact Opportunity 2
Increase use of renewable energy and improve energy efficiency along whole zinc value chain in context of alignment with Paris Climate Agreement targets

SDG Impact Opportunity 3
Increase uptake of products that contribute sustainably to societal needs

SDG Impact Opportunity 4
Contribute to planning for climate resilience

Areas of contribution for priority SDGs

<table>
<thead>
<tr>
<th>SDG</th>
<th>Target</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1</td>
<td>By 2030, ensure universal access to affordable, reliable and modern energy services</td>
</tr>
<tr>
<td>7.2</td>
<td>By 2030, increase substantially the share of renewable energy in the global energy mix</td>
</tr>
<tr>
<td>7.3</td>
<td>By 2030, double the global rate of improvement in energy efficiency</td>
</tr>
<tr>
<td>7b</td>
<td>By 2030, expand infrastructure and upgrade technology for supplying modern and sustainable energy for all in developing countries, in particular least developed countries, small island developing States, and land-locked developing countries, in accordance with their respective programs of support</td>
</tr>
<tr>
<td>13.1</td>
<td>Strengthen resilience and adaptive capacity to climate-related hazards and natural disasters in all countries</td>
</tr>
</tbody>
</table>

ACTIONS: Opportunity 2
- Increase use of renewable energy in the zinc value chain.
- Scale efforts to improve energy efficiency of technology and processes related to the zinc value chain.
- Improve transparency in the sector through open reporting on energy and climate performance, achievements and shortcomings, sharing best practice with peers and working with others to tackle barriers.

ACTIONS: Opportunity 3
- Expand the use of energy efficient batteries through:
  - building on existing partnerships and research to enhance Zn-C and alkaline traditional batteries; and
  - further development of ZN-air/Zn-Ag “button cell” batteries.
- Increase availability of batteries for renewables in particular in developing countries.

ACTIONS: Opportunity 4
- Scale up the use of galvanized products in critical infrastructure and clean energy production.
Operational Impacts to People and the Environment

**SDG Impact Opportunity 5**
Reduce environmental footprint of mining operations

**SDG Impact Opportunity 6**
Embed best practice employment principles and make a positive contribution to local communities

**SDG Impact Opportunity 7**
Enhance gender diversity in zinc related employment at all stages in value chain

**SDG Impact Opportunity 8**
Follow responsible sourcing principles throughout zinc value chain

**Areas of contribution for priority SDGs**

8.4 Improve progressively, through 2030, global resource efficiency in consumption and production and endeavor to decouple economic growth from environmental degradation, in accordance with the 10-year framework of programs on sustainable consumption and production, with developed countries taking the lead

8.5 By 2030, achieve full and productive employment and decent work for all women and men, including for young people and persons with disabilities, and equal pay for work of equal value

8.7 Take immediate and effective measures to eradicate forced labor, end modern slavery and human trafficking and secure the prohibition and elimination of the work forms of child labor, including recruitment and use of child soldiers, and by 2025 end child labor in all its forms

8.8 Protect labor rights and promote safe and secure working environments for all workers, including migrant workers, in particular women migrants and those in precarious employment

15.1 By 2020, ensure the conservation, restoration and sustainable use of terrestrial and inland freshwater ecosystems and their services, in particular forests, wetlands, mountains and drylands, in line with obligations under international agreements

15.5 Take urgent and significant action to reduce the degradation of natural habitats, halt the loss of biodiversity and, by 2020, protect and prevent the extinction of threatened species

**ACTIONS Opportunity 5**
- Develop mining site selection planning technologies to reduce impacts on terrestrial and inland freshwater ecosystems and their services.
- Strengthen watershed level management and develop technologies to reduce water requirements in mining.

**ACTIONS Opportunity 6**
- Scale shared value business models that bring employment and other benefits to communities.
- Strengthen processes to ensure continuous improvements in health, safety (including tailings safety) and wellbeing for employees, contractors and communities.

**ACTIONS Opportunity 7**
- Increase numbers of women in the workforce at entry, management and board level through strengthening of policies that support workforce diversity and inclusion.

**ACTIONS Opportunity 8**
- Implement responsible sourcing program including due diligence across businesses that are part of the zinc value chain.
Sustainable Cities and Circular Economy

SDG Impact Opportunity 9
Prolong the life of steel structures through galvanization in developing countries

SDG Impact Opportunity 10
Accelerate and maximize the recycling potential of zinc containing materials (‘close the loop for zinc’)

Areas of contribution for priority SDGs

9.1 Develop quality, reliable, sustainable and resilient infrastructure, including regional and trans-border infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all

9.4 By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities

9a Facilitate sustainable and resilient infrastructure development in developing countries through enhanced financial, technological and technical support to African countries, least developed countries, landlocked developing countries and small island developing States

11.1 By 2030, ensure access for all to adequate, safe, and affordable housing and basic services and upgrade slums

11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management

12.2 By 2030, achieve the sustainable management and efficient use of natural resources

12.6 Encourage companies, especially large and transnational companies, to adopt sustainable practices and to integrate sustainability information into their reporting cycle

12a Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production

ACTIONS: Opportunity 9

- Identify regional and / or infrastructure-specific opportunities to scale use of galvanization to improve climate resilience.
- Maximize use of zinc products in potential high impact applications.

ACTIONS: Opportunity 10

- Identify more categories of zinc-containing materials that can be recycled.
- Increase rates of zinc recycling.
- Facilitate zinc reaching maximum potential in the circular economy.
Next Steps

This Roadmap articulates the significant potential of the zinc sector to play a role in achieving the 2030 Agenda. Strong partnerships and collaborative efforts are essential to the sector achieving the actions laid out in this Roadmap and the overall achievement of the SDGs. Thus, this Roadmap invites sector peers and stakeholders to draw on the Impact Pathways to help steer strategic decision-making.

The IZA is committed to promoting and furthering the actions detailed in this Roadmap through work programs, identifying metrics and indicators to track sector progress, and encouraging peers to leverage this Roadmap to drive action and enhance engagement with stakeholders.