SUSTAINABLE RETURN ON INVESTMENT

SROI

HDR
Sustainable Return on Investment (SROI) Can Help Get Projects Funded

This is a time like no other. Decision-makers at all levels are challenged to respond to stimulus funding opportunities and sort through a thicket of project requests, community dreams and national needs. There is no lack of worthy projects and real needs.

HDR is helping clients sort and prioritize projects based on long-term sustainability and funding eligibility. To help make these tough decisions and determine the “best case” for project success, we have developed proven tools that are part of HDR’s Sustainable Return on Investment (SROI) process. Using this approach, organizations are positioning themselves to develop projects and programs that provide economic, social and environmental value, backed by business cases that are “green,” transparent and accountable.

By combining economic assessment with probability analysis, HDR can quickly capture all of the costs and benefits associated with a specific initiative. At the same time, we can demonstrate the likelihood of achieving the benefits related to given alternatives.

What is SROI?
SROI is a methodology that identifies projects that will best accomplish your goals of 1) optimizing the total value of your project, and 2) positioning your project with the best possible case for funding.

SROI determines the full value of a project by assigning monetary values to all costs and benefits—economic, social and environmental. The process provides decision support to increase the likelihood of project funding by prioritizing sustainable initiative benefits that also meet the requirements of stimulus funding in the American Recovery and Reinvestment Act (ARRA). SROI will help communicate the full value of your sustainable initiative including direct, indirect/non-cash costs and benefits as well as the values of externalities that are generally overlooked in economic assessment and not revealed to stakeholders.

Optimize Total Project Value and Funding Potential

Optimize triple-bottom-line benefits: demonstrate the impact of jobs created, greenhouse gases reduced, energy saved, water conserved, etc.

Increasing Funding Potential

Requirements of the American Recovery & Reinvestment Act (ARRA)
- Rapid Implementation
- Green Industry Creation
- Community & Infrastructure Transformation
- Energy Efficiency & Security
- Greenhouse Gas Reduction
- Job Creation
- Return on Investment

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SROI Methodology Guides Your Decision Making Process

- Community Values
- Buildings
- Energy
- Ecology
- Site Development
- Mobility
- Water
- Waste
- Economic Data
- Corporate Responsibility

Data Inputs SROI Process Cost & Benefit Output

Potential Projects

Increasing Value

Increasing Funding Potential
How does SROI work?
Sustainable project decisions require more inclusive forecasting of future costs and benefits. These elements are subject to uncertainty and are not typically captured in conventional return on investment methods. These additional factors (direct, non-cash and externalities) are relevant to responsible decision making as well as ARRA funding requirements. SROI uses evidence-based business case/cost-benefit analysis to demonstrate functional, economic, social and environmental value. It assigns monetary values to stimulus priority requirements to highlight best and highest value projects.

HDR’s SROI process involves four distinct steps:

1. Develop the Structure and Logic
2. Quantify Input Data Assumptions
3. Risk Analysis Session
4. Quantify Benefits

“SROI reveals the hidden value in projects.”

David Lewis, PhD
HDR National Director, Economics & Finance

HDR SROI Example Projects
HDR provides leadership for sustainable initiatives and context sensitive expertise to many clients. The following chart provides recent examples where we have applied our SROI methodology.

<table>
<thead>
<tr>
<th>Client</th>
<th>Project</th>
</tr>
</thead>
<tbody>
<tr>
<td>BNSF Railway - Bakersfield to Mojave, CA</td>
<td>Cost-Benefit Analysis of Tehachapi Trade Corridor Capacity Expansion</td>
</tr>
<tr>
<td>Enbridge Gas Distribution - Toronto, Ontario</td>
<td>Analysis of Carbon Emissions Trading</td>
</tr>
<tr>
<td>Johns Hopkins University - Baltimore, MD</td>
<td>Analysis to Optimize Operations and Maintenance on Four Campus Buildings</td>
</tr>
<tr>
<td>King County, Seattle, WA</td>
<td>Assessment of Costs, Benefits and Cost-Sharing Opportunities through Water Source Exchange Projects in Puget Sound</td>
</tr>
<tr>
<td>Michigan Department of Transportation</td>
<td>Economic and Community Benefits of Local Bus Transit Service</td>
</tr>
<tr>
<td>Public Health Agency of Canada - Ottawa, Ontario</td>
<td>Analysis of Proposed National Lung Health Framework</td>
</tr>
<tr>
<td>Metropolitan Transportation Authority Blue Ribbon Commission on Sustainability - New York City, NY</td>
<td>Recommendations for Capital Project Decisions Related to Transit</td>
</tr>
<tr>
<td>California Prison Receivenship - Sacramento, CA</td>
<td>Analysis of Seven New California Prison Hospitals</td>
</tr>
<tr>
<td>US Army - Fort Belvoir, VA</td>
<td>Analysis of new Community Hospital at Fort Belvoir</td>
</tr>
<tr>
<td>Dept. of Rail &amp; Public Transportation - Richmond, VA</td>
<td>Cost-Benefit Analysis of Dullies Corridor Metro Extension</td>
</tr>
<tr>
<td>Metropolitan Council of Governments - Washington, D.C.</td>
<td>Framework for a Cost-Benefit Analysis for a Regional Transportation Plan</td>
</tr>
</tbody>
</table>
What You Get: SROI Outputs

Agencies are looking for specific evidence of benefits presented in a transparent “green” business case. HDR’s SROI process provides decision makers with two sets of data: Financial Return on Investment (i.e., traditional life-cycle costing) and Sustainable Return on Investment (i.e., monetized non-cash costs and benefits).

Output Examples Include:
1. Probability Distribution—illustrates the risk associated with the key inputs and outputs of the model.
2. Financial/Sustainable ROI Summary—quantifies financial metrics and provides a comparison between traditional Return on Investment and Sustainable Return on Investment.
3. Split of Benefits—provides a clear distribution of benefits associated with a project solution. This is useful for demonstrating alignment with ARRA requirements.
4. Non-cash Metrics—Data, such as tons of CO2 emissions avoided, gallons of fresh water saved and green jobs created, is useful for setting goals and reporting results.
5. Sustainability “S” Curve—Demonstrates the spread between FROI and SROI. Identifies the value of benefits gained and projects the probability of success.

1. Probability Distribution - Value of a Ton of CO2

2. Financial/Sustainable ROI Summary

<table>
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<tr>
<th>Non-resource Metrics</th>
<th>Average</th>
<th>Total</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green jobs created</td>
<td>(158)</td>
<td>(1,178)</td>
<td>Number of incremental annual “green” jobs created (total figure in cumulative FTE)</td>
</tr>
<tr>
<td>Value of Operational Resilience</td>
<td>(121M)</td>
<td>(727M)</td>
<td>Calculated by multiplying the potential events mitigated by probability of occurrence</td>
</tr>
<tr>
<td>Number of Lives Saved</td>
<td>(16)</td>
<td>(214)</td>
<td>Number of potential fatalities avoided due to the project</td>
</tr>
<tr>
<td>Number of Lives Saved Would</td>
<td>(31)</td>
<td>(514)</td>
<td>Number of potential fatalities avoided due to the project</td>
</tr>
</tbody>
</table>

3. Split of Benefits

| Economic Value of Water Saved | \(369,591\) | \(449,537\) | Total value of benefits in one year |
| Energy Bill Savings | \(80,039\) | \(80,039\) | Total value of benefits in first year |
| Non-resource Metrics | Average | Total | Explanation |
| Economic Value of Water Saved | \(16\) | \(230\) | Calculated by multiplying the potential energy savings by the price of a ton of fresh water saved |
| Value of a Ton of CO2 | \(374,844\) | \(374,844\) | Total value of benefits in one year |

4. Non-cash Metrics

5. The Sustainability “S” Curve to Optimize the Total Value of Your Projects

Using the SROI process allows decision-makers the ability to prioritize worthy—but competing—projects for funding based on the maximum financial and societal returns. In the following example, a project’s outcome metrics are synthesized into an intuitive risk analysis model based on return on investment.

A. Compare the financial return on investment and sustainable return on investment. In this example, the mean sustainable return on investment is more than six times greater than traditional return on investment.

B. Evaluate non-cash benefits, such as improvements in employee health and productivity, and the benefits to larger community.

C. Assess the statistical likelihood that return will fall within an 80% confidence interval. In this example, sustainable return on investment ranges from 30% to 48%.
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HDR is a trusted partner with a track record of success in sustainable architecture, engineering and consulting. We are committed to offering our clients the best possible economic, social and environmental value by delivering integrated sustainable solutions. Our Sustainable Solutions Program includes an internal Corporate Sustainability Initiative, a Climate Change Initiative and services in the following areas of expertise: buildings, mobility, water, energy, waste, community, site development and sustainable return on investment (SROI).

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