Paper Summary

<!--META_START-->

Title: Sharing science through shared values, goals, and stories: an evidence-based approach to making

Authors: Bethann Garramon Merkle, Evelyn Valdez-Ward, Priya Shukla, Skylar R. Bayer

DOI: 10.2307/27316303

Year: 2021

Publication Type: Journal Article

Discipline/Domain: Science Communication / Human–Wildlife Interactions

Subdomain/Topic: Values-based science communication, stakeholder engagement, storytelling in scienc

Eligibility: Eligible

Overall Relevance Score: 88

Operationalization Score: 90

Contains Definition of Actionability: Yes (implicit and explicit through a values-goals-stories model)

Contains Systematic Features/Dimensions: Yes

Contains Explainability: Yes

Contains Interpretability: Partial

Contains Framework/Model: Yes (values–goals–stories framework, backward design approach)

Operationalization Present: Yes (stepwise guidance, tools, worksheets, examples)

Primary Methodology: Conceptual / Practice-based synthesis

Study Context: Science communication across academic and non-academic contexts, with emphasis on

Geographic/Institutional Context: Primarily U.S.-based examples, cross-disciplinary applicability

Target Users/Stakeholders: Scientists, science communicators, policymakers, community stakeholders

Primary Contribution Type: Conceptual framework and applied guidance

CL: Yes

CR: Yes

FE: Yes

TI: Partial

EX: Yes

GA: Yes

Reason if Not Eligible: N/A

<!--META_END-->

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Discipline/Domain:

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Subdomain/Topic:

Values-based science communication, stakeholder engagement, storytelling

Contextual Background:

This article addresses the persistent challenge of making scientific research relevant and useful to decisi

Geographic/Institutional Context:

Primarily U.S.-based examples; applicable across global contexts.

Target Users/Stakeholders:

Scientists, science communicators, policy makers, educators, local communities, conservation managers

Primary Methodology:

Conceptual framework supported by practical tools and examples.

Primary Contribution Type:

Conceptual framework and applied recommendations.

General Summary of the Paper

The paper presents a conceptual and practical approach for making science communication more effecti

Eligibility

Eligible for inclusion: **Yes**

How Actionability is Understood

The paper conceptualizes actionability as the extent to which science communication is designed to conn

> “We emphasize the essential interplay between values, goals, and stories… which scientists can active

> “Actionable recommendations and tools scientists can immediately use to articulate their values, identif

What Makes Something Actionable

- Centering communication on **shared values** between scientists and stakeholders.
- Setting **explicit, stakeholder-informed goals** for science communication.
- Using **storytelling** to make science relatable and emotionally resonant.
- Employing **backward design** to ensure activities serve communication goals.
- Actively **listening to and understanding stakeholder perspectives**.
- Building **trust and long-term relationships**.
- Considering **cultural, political, and historical contexts**.

How Actionability is Achieved / Operationalized

- **Framework/Approach Name(s):** Values–Goals–Stories framework; Backward Design for Scicomm
- **Methods/Levers:** Values articulation exercises; stakeholder mapping and listening; goal setting tools
- **Operational Steps / Workflow:**
  1. Identify and articulate personal and scientific values.
  2. Learn and integrate stakeholder values.
  3. Co-develop goals aligned with shared values.
  4. Use backward design to plan activities.
  5. Develop and deliver stories that embody values and goals.
- **Data & Measures:** Qualitative stakeholder input, values worksheets, narrative feedback.
- **Implementation Context:** Applicable across environmental, policy, education, and outreach settings.

> “We recommend a stepwise process to identify your values, those of your stakeholders, and how to rela

> “Backward design… prioritizes key concepts that lead to long-term understanding… keeping our focus

Dimensions and Attributes of Actionability (Authors’ Perspective)

- **CL (Clarity):** Yes – Emphasis on plain language, avoiding jargon to reach stakeholders.
- **CR (Contextual Relevance):** Yes – Stakeholder contexts and sociopolitical realities must inform com
- **FE (Feasibility):** Yes – Offers stepwise, resource-backed processes adaptable to scientist constraint
- **TI (Timeliness):** Partial – Encourages goal setting early in projects, but timeliness is not a primary fo
- **EX (Explainability):** Yes – Stresses explaining science in relatable, narrative forms.
- **GA (Goal Alignment):** Yes – Goals are co-developed or informed by shared values.
- **Other Dimensions Named by Authors:** Trust-building, inclusivity, cultural awareness.

Theoretical or Conceptual Foundations

- Backward Design (Wiggins & McTighe, 2004)
- Science–advocacy continuum (Donner, 2014)
- Impact identity framework (Risien & Storksdieck, 2018)

- Narrative persuasion and storytelling literature (Dahlstrom, 2014)

Indicators or Metrics for Actionability

- Presence of stakeholder-informed goals.
- Evidence of trust and relationship building.
- Stakeholder use or application of communicated science.
- Narrative resonance and engagement levels.

Barriers and Enablers to Actionability

- **Barriers:** Systemic disincentives in academia; lack of scicomm training; political polarization; inequiti
- **Enablers:** Co-production approaches; values alignment; trust-based relationships; accessible tools a

Relation to Existing Literature

The approach integrates science communication theory, stakeholder engagement principles, and applied

Summary

This paper provides a robust conceptual and practical guide to making science actionable through intenti

Scores

- **Overall Relevance Score:** 88 – Strong conceptual clarity on actionability via the values–goals–stories
- **Operationalization Score:** 90 – Provides explicit, stepwise instructions, tools, and applied examples f

Supporting Quotes from the Paper

- “We emphasize the essential interplay between values, goals, and stories… which scientists can activel
- “Backward design… prioritizes key concepts that lead to long-term understanding… keeping our focus o
- “We recommend a stepwise process to identify your values, those of your stakeholders, and how to rela
- “Actionable recommendations and tools scientists can immediately use to articulate their values, identify

Actionability References to Other Papers

- Donner (2014) – Science–advocacy continuum
- Risien & Storksdieck (2018) – Impact identities framework
- Wiggins & McTighe (2004) – Backward design
- Dahlstrom (2014), Dahlstrom & Ho (2012) – Storytelling in science
- Elliott & Resnik (2014) – Transparency of values in science