Pandora's Promise: The Promise and Perils of Nuclear Power in Bangladesh
Session 4: Mock Hearing

Mahmud Farooque, Consortium for Science, Policy and Outcomes at Arizona State University

Analytic Government to Synthetic Governance

General challenges for public investment in science and technology

1. What Science to do?

2. How to steer the science and technology towards desirable societal outcomes?

Anticipatory Governance

1. **Foresight**
   All governance requires a disposition toward future

2. **Engagement**
   Crucial normatively, strategically, pragmatically
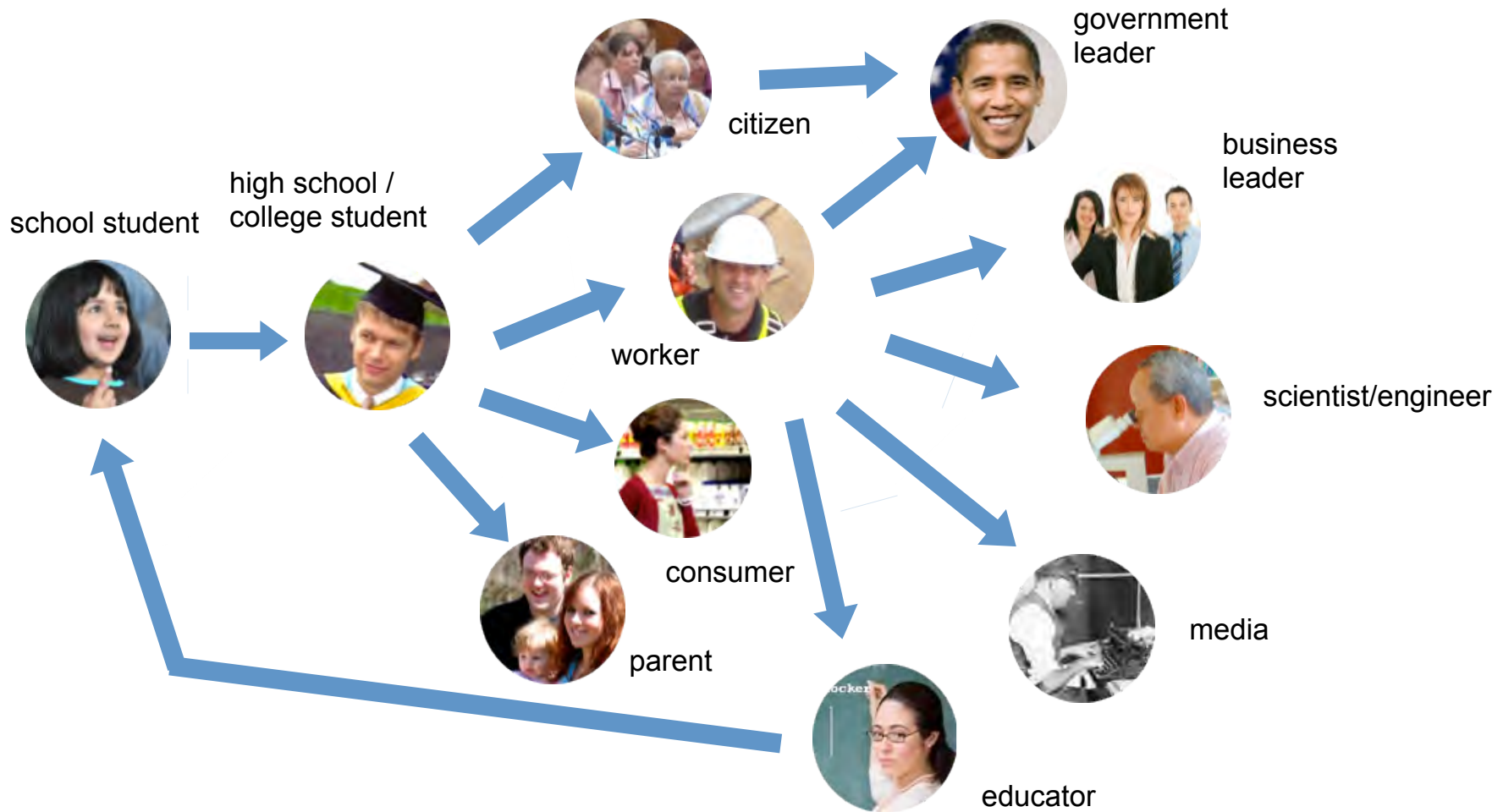
3. **Integration**
   Scientists know things we don't, and vice versa

4. **Ensemble-ization**
   None of these works in isolation

A broad-based capacity extended through society that can act on a variety of inputs to manage emerging knowledge-based technologies while such management is still possible.
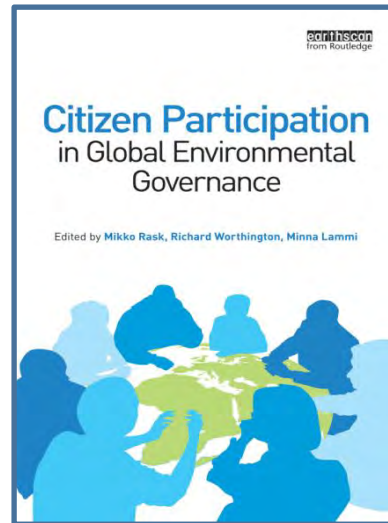
Sustained Co-production

Situating science and technology governance within the Lifecycle of a Decision-maker

Three Supportive Movements

Public Understanding to Engagement

- Center for the Advancement of Informal Science Education (CAISE)
- Nanoscale Informal Science Education Network (NISENet)
- Association of Science-Technology Centers (ASTC) PES Community of Practice

Research on Deliberative Methods

earthscan
from Routledge

Citizen Participation in Global Environmental Governance

Edited by Mikko Rask, Richard Worthington, Minna Lammi

Citizen Science to Citizen Policy

- Using crowdsourcing to collect, classify and share data and content and facilitate information retrieval for all users of public information.
- Using smart devices to report potholes, faulty traffic lights and other inconveniences to make local government more responsive
- Using participatory methods to discuss complex issues on global warming and produce an outcome usable to policymakers.

"Competent social scientists should work hand-in-hand with natural scientists, so that problems may be solved as they arise, and so that many of them may not arise in the first instance." *- Detlev Bronk*
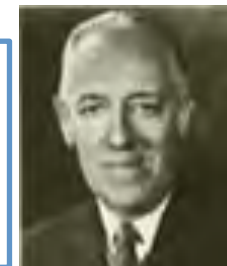
A Distributed Institutional Network Model for Public Engagement

Policy relevance
Interface with policy-makers
Broad dissemination

Nonpartisan Policy Research Organizations

Science Museums

Universities
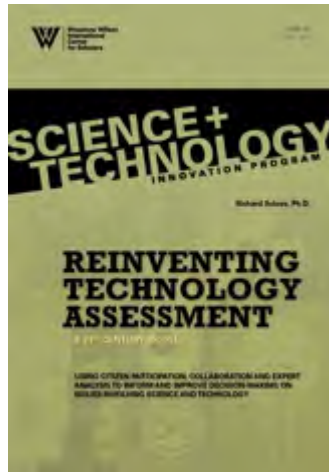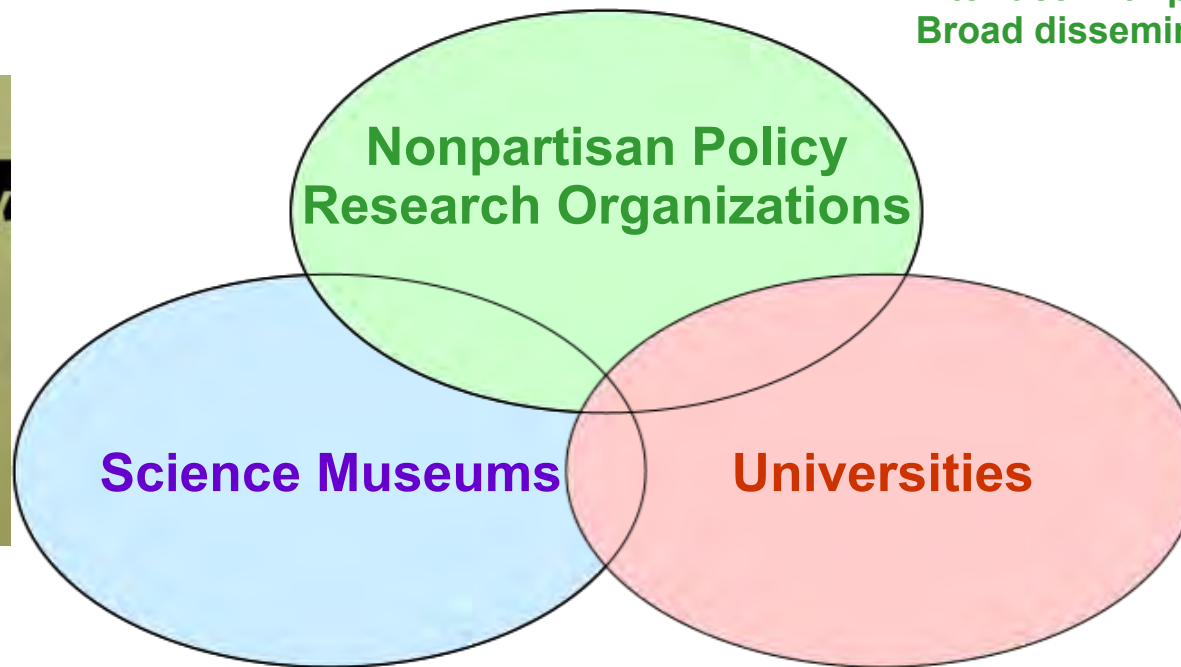
Direct public interface
Trusted public educators
Innovation in citizen-friendly pedagogy

Innovation in TA concepts/methods
Research, analysis and evaluation
Training of researchers/practitioners

Results reported instantly to a website and compared across age groups, countries, regions and continents as they are produced.

Analyzed and communicated in documentary films and policy reports about the process and results.

Disseminated through educational and outreach activities in formal and informal settings.

Presented at UN Convention on Biological Diversity Meeting (COP11) in India on October 2012.

Used as an important baseline for research, education and design of future awareness raising initiatives.

Deliberation Goals

- To get youth's views on nuclear power in Bangladesh
- To give youth a chance to express opinion and develop recommendations for decision and policymakers.
- To decide for themselves what roles they want to play.
- To equip themselves with tools for informed decision making
- Develop new procedures for engaging citizens on energy and environment issues.

Today's Program

Session 1: Face to Face Deliberation

Session 2: Face to Face Deliberation with Experts

Session 4: Public Hearing

Session 3: Face to Face Deliberation

Letter from Climate Scientists

- The Problem: Climate Change meets Energy Demand
  - Continued opposition to nuclear power threatens humanity's ability to avoid dangerous climate change
  - Global demand for energy is growing rapidly and must continue to grow to provide the needs of developing economies.
  - Renewables like wind and solar and biomass cannot scale up fast enough to deliver cheap and reliable power at the scale the global economy requires.
- The Solution: Substantial role for nuclear power
  - Passive safety systems and other advances can make new plants much safer.
  - Risks associated with the expanded use of nuclear energy are orders of magnitude smaller than the risks associated with fossil fuels.
  - Innovation and economies of scale can make new power plants even cheaper than existing plants.

Two Views on Rooppur NPP

Nuclear Yes, but … [Matin, 2013]

- Governance and regulation
- Properly trained manpower
- Cost of the project
- Suitability of the Rooppur site,
- Availability of cooling water for the plant
- Safety of the VVER-1000 nuclear reactors
- Nuclear disaster management
- Expenditure before feasibility study and environmental impact assessment

Nuclear No [Haider, 2013]

- The government must realize that to protect the citizens from the aftereffects of a nuclear accident, it will have to take precautionary measures of a type and on a scale that has no historical precedent in Bangladesh.
- Once a reactor is turned on, processes are set in motion that cannot be reversed for a very long time. Hence, the government should do some serious soul-searching.
- Nuclear power is also perceived to be unsafe, can be used to make nuclear weapons, produces dangerous wastes, lacks waste disposal facilities, vulnerable to terrorist attacks, and draws funds away from the development of sustainable energy.
- Dollar for dollar, low-carbon energy sources, such as wind power, solar power, geothermal energy, and biomass can deliver cleaner, safer, and more efficient energy than nuclear power.

Other Questions

- Governance: authoritarian control- who will regulate, and control energy? Who will benefit?

- Geopolitics: Who is benefiting? What to make of Russia's eagerness and Germany, Japan and World Bank's reluctance.

- Waste: What's the plan for transporting and temporary storage?

- Environmental: Who will manage/identify these?

- Moral: Who is the "we" in the conversation? Who is benefitting and suffering now? How will this change in the future?

- Ethical: Who is displaced? How are workers protected? How is local populace affected?

- Equity: How will energy be disbursed? Urban areas connected to grid? What about rural areas who perhaps need it most? What is present energy map?

- Accountability: Who is responsible if something goes wrong? What is emergency framework?

- Financial: What does "low cost" encompass? What is omitted from the discussion? What happens with default?

Policy Priorities

Vote for 1 of 3 options

1. **Full Steam Ahead**: Continue as is …

2. **Go Slow:** Nuclear yes but …

3. **Stop:** Not worth taking the risk …

Write your points in support

- Why should we do what you suggest?

- What should the Government, Non-Government, Industry do, Civil Society, Education Institution do?

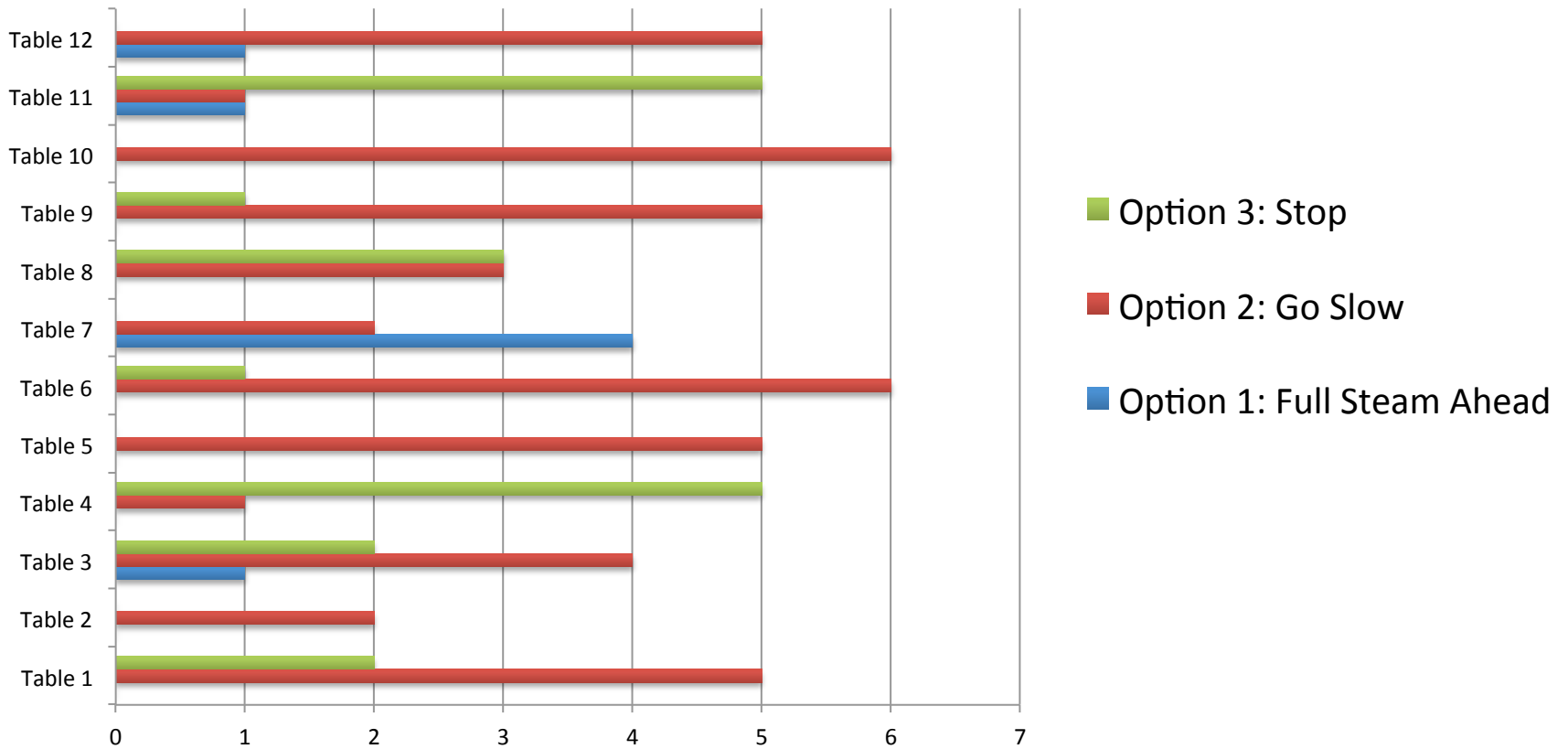- What should you as Bangladeshi youth do?

Preliminary Results: Pre Discussion
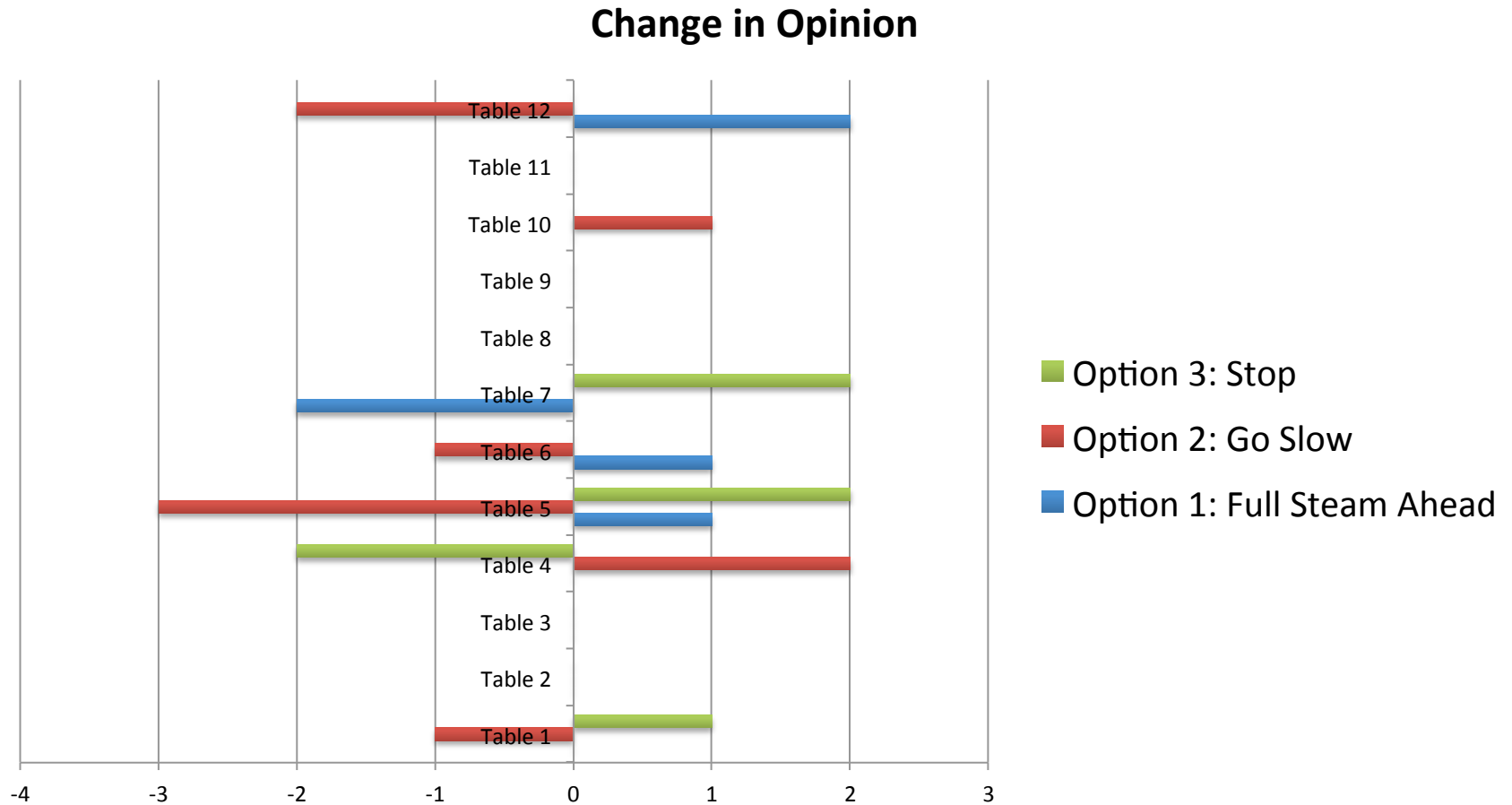

Pre Discussion Results
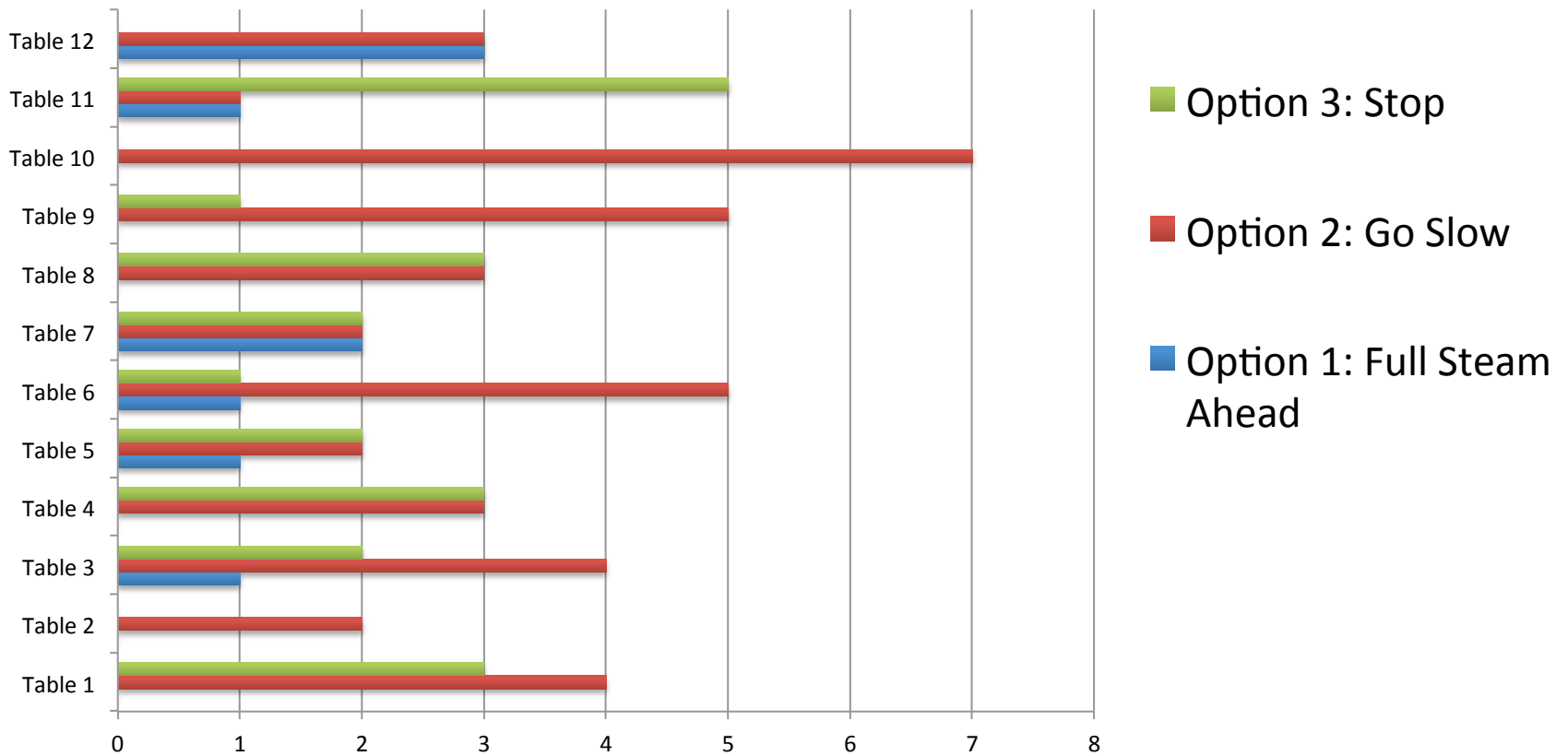
Preliminary Results: Post Discussion
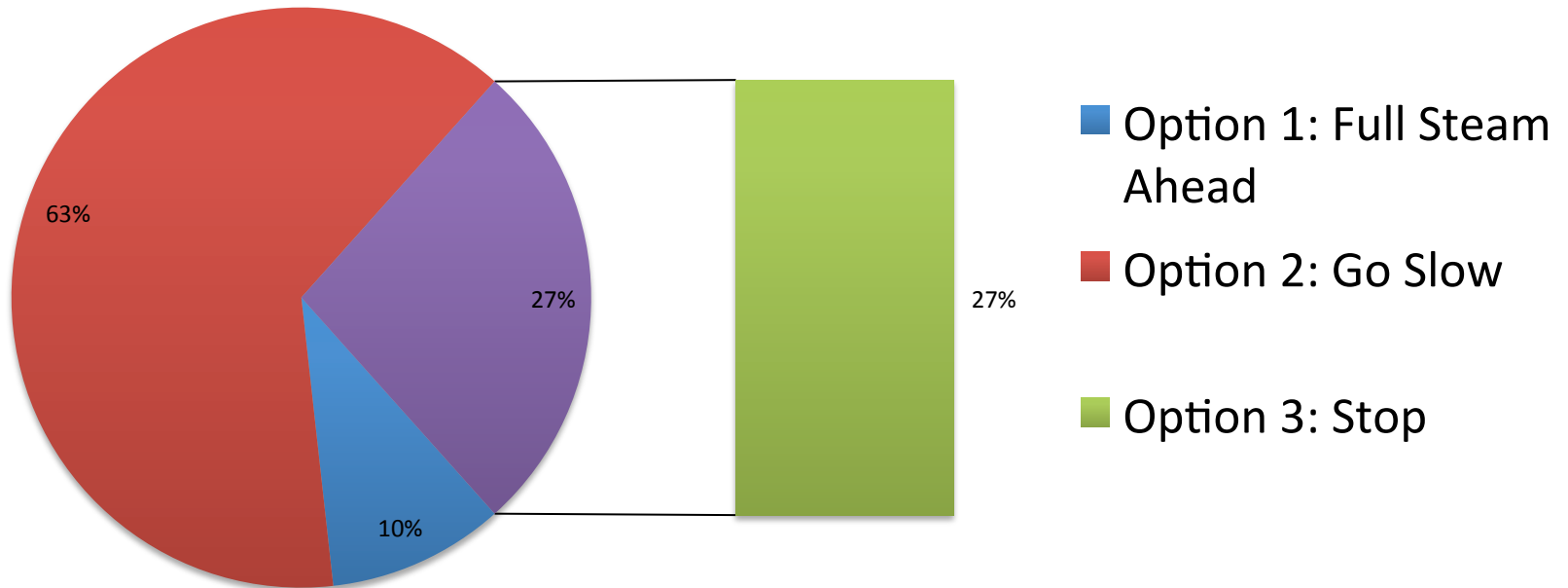

Post Discussion Results

Preliminary Results: Change

Change in Opinion

Legend:
- Option 3: Stop
- Option 2: Go Slow
- Option 1: Full Steam Ahead

Preliminary Results: 1 person 1 Vote

Post Discussion Overall Results

- Option 1: Full Steam Ahead
- Option 2: Go Slow
- Option 3: Stop

63%

27%

10%

27%

Session 4:

- Group representative present 3 minute oral testimony to mock stakeholder panel (15 minutes x 3)
- Group representative answers questions from members of the panel (10 minutes x 3)