Student expertise and the legislative process

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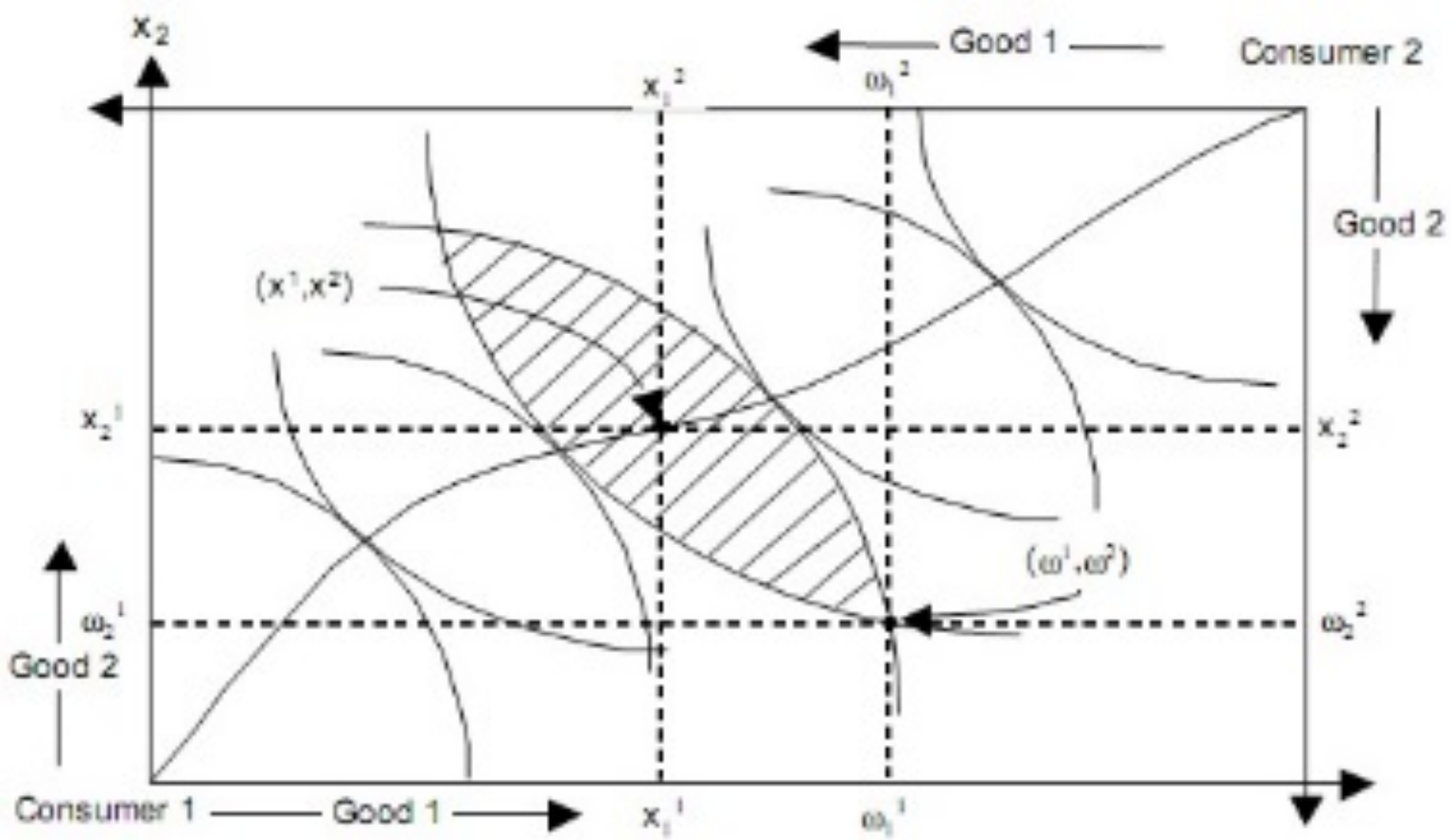
19 October 2016

For the Center for Science & Technology Policy Research

When should government not get involved?



The first fundamental theorem of welfare economics

"If preferences are locally non-satiated, and if (x*,y*,p) is a price equilibrium with transfers, then the allocation (x*,y*) is Pareto optimal. In particular, any Walrasian equilibrium allocation is Pareto optimal."

Microeconomic Theory, Andreu Mas-Colell, Michael D. Whinston and Jerry R. Green, page 549

The first fundamental theorem of welfare economics

The Little Bo Peep Theorem:
"Leave them alone and they'll come home, wagging their tails behind them."

Under "ordinary" circumstances, government can't improve on the uncoordinated actions of private actors

What are “ordinary” circumstances?

The first fundamental theorem requires

1. All goods are private.
2. There are no non-pecuniary externalities
3. There are no market imperfections

Under what circumstances is governmen useful?

1. When it arranges for provision of public good.
2. When it internalizes non-pecuniary externalities
3. When it eliminates market imperfections.

4. ANY OTHER GOVERNMENT ACTIVITY IS REDISTRIBUTION

xamples of appropriate government ehavior

- Public good: Providing Transportation infrastructure
- Non-pecuniary externality: Regulating environmental contaminants
- Market failure: Enforcing antitrust regulations

Redistribution example: The government and employment

Can employment be a positive externality?

- new jobs means more workers
- more workers means more income
- more income means more consumption
- more consumption means more jobs
- original employer does not benefit from the increased demand for
  - workers for other firms
  - output from other firms
- therefore, employment will be underprovided

Redistribution example: The government and employment

NO: These are positive *pecuniary* externalities

- Positive: increase in demand benefits objects of demand
- Pecuniary: All worked out in the market
- Equilibrating negative effects
  - increase demand, and therefore costs for inputs including labor
  - reduce demand, and therefore prices, for output from other firms
  - negative consequences are almost always ignored

Redistribution example: The government and employment

Conclusion:

- Subsidizing employment is redistribution
- Winners:
  - subsidized employer
  - subsidized employees
- Losers:
  - everyone else

Redistribution example: Tax incentive

What's a tax incentive?

"A **tax incentive** is an aspect of a country's tax code designed to incentivize, or encourage a particular economic activity." (Wikipedia)

"Tax Incentives for Economic Development: What are tax incentives for economic development? The Federal Government has often used the tax system to partner with the private sector for economic development initiatives. A variety of tax expenditures aim to lure or keep companies and sectors within the United States. In addition, a more coherent set of incentives supports private investments in specific communities." (Tax Policy Center, the Urban Institute and the Brookings Institution)

"tax incentive: Deduction, exclusion, or exemption from tax liability, offered as an enticement to engage in a specified activity (such as investment in capital goods) for a certain period." (www.businessdictionary.com)

Redistribution example: Tax incentive

What's a tax incentive?

- Government subsidies that are available to specified or selected but not all private sector businesses
  - Whether through
    - Tax credits
    - Tax deductions
    - Tax rebates
- Functionally equivalent
    - Grants
    - Any other form of expenditure

Do tax incentives

1. Provide public goods?

   NO!

   Beneficiaries are, by definition, isolated individual agents.
2. Internalize non-pecuniary externalities?

   NO!
3. Remedy market imperfections?

   NO!

   They create market imperfections.

Tax incentives are

Often justified as providing externalities

- Beneficiaries will “create jobs”
- Newly employed workers will spend their incomes in the local economy
- The recipients of this new custom will themselves have to “create jobs” in order to service it
- Everybody wins

Tax incentives are

Pecuniary externalities

- Beneficiaries experience them as increases in income or reductions in cost
- Competitors experience them as reductions in income or increases in cost
- These are all market signals – THERE IS NOTHING TO INTERNALIZE

Tax incentives are

- Distortions imposed on the market economy
  - They privilege beneficiaries beyond market returns
  - They disadvantage all others despite market returns

- Distortions should be imposed on the market
  - Only when there are very good reasons to believe that the market has got things wrong
  - If the market has got things wrong, there are very good reasons to fear that “planners” of any sort won’t get things right

Tax incentives are

- Redistribution in favor of the beneficiaries
  - Have no obvious claim on our sympathies
  - Are almost surely selected arbitrarily
- As with all redistribution, welfare gains to beneficiaries must be weighed against welfare losses to “donors”
- Most, if not all, theories of redistribution favor those who are disadvantaged in consumption

An example

First Regular Session
Seventieth General Assembly
STATE OF COLORADO

INTRODUCED

LLS NO. 15-0493.01 Kristen Forrestal x4217 HOUSE BILL 15-1230

HOUSE SPONSORSHIP

Lee and Foote,

SENATE SPONSORSHIP

Heath,

House Committees
Business Affairs and Labor

Senate Committees

A BILL FOR AN ACT

CONCERNING THE CREATION OF THE INNOVATIVE INDUSTRIES WORKFORCE DEVELOPMENT PROGRAM.

Redistribution to the unneedy

(I) INNOVATIVE INDUSTRIES HAVE HIGH PROJECTED GROWTH RATES AND ARE A CRITICAL COMPONENT OF THE STATE'S ECONOMIC DEVELOPMENT AND JOB CREATION;

(II) FINDING QUALIFIED EMPLOYEES CAN BE A CHALLENGE FOR INNOVATIVE-INDUSTRY BUSINESSES;

(VI) INTERNSHIPS CREATE OPPORTUNITIES FOR BUSINESSES TO FIND, TRAIN, AND EVALUATE POTENTIAL LONG-TERM EMPLOYEES AND FOR STUDENTS TO GET REAL-WORLD WORK EXPERIENCE WHILE EXPLORING CAREER OPTIONS;

(VII) BY OFFERING INCENTIVES TO BUSINESSES TO CREATE INTERNSHIPS, THE STATE WILL ENCOURAGE BUSINESSES TO CREATE MORE OPPORTUNITIES FOR STUDENTS TO OBTAIN WORK EXPERIENCE IN THE INNOVATIVE INDUSTRIES.

ncentive contracts are inevitably one-sided

The industry could be anything:

(c) "INNOVATIVE INDUSTRY" MEANS ADVANCED MANUFACTURING, AEROSPACE, BIOSCIENCE, CONSTRUCTION, ELECTRONICS, ENERGY AND NATURAL RESOURCES, ENGINEERING, AND INFORMATION TECHNOLOGY INDUSTRIES, AND ANY OTHER INNOVATIVE INDUSTRY AS DETERMINED BY THE DEPARTMENT.

ncentive contracts are inevitably one-sided

The job could be anything:

(III) ALLOW STUDENTS TO GAIN VALUABLE WORK EXPERIENCE IN AT LEAST TWO OF THE FOLLOWING OCCUPATIONAL AREAS:

(A) COMPUTER SYSTEMS, INCLUDING SOFTWARE DEVELOPMENT AND INFORMATION TECHNOLOGY SUPPORT;

(B) PRODUCTION, INCLUDING FABRICATION, ASSEMBLY, AND QUALITY ASSURANCE;

(C) ENGINEERING;

(D) BUSINESS AND FINANCIAL OPERATIONS, INCLUDING SUPPLY CHAIN MANAGEMENT;

(E) CUSTOMER SERVICE, SALES, AND MARKETING, INCLUDING PROPOSAL DEVELOPMENT;

(F) RESEARCH, PRECLINICAL, CLINICAL, AND COMMERCIAL DEVELOPMENT;

(G) INSTALLATION, MAINTENANCE, AND REPAIR OF MACHINERY AND EQUIPMENT;

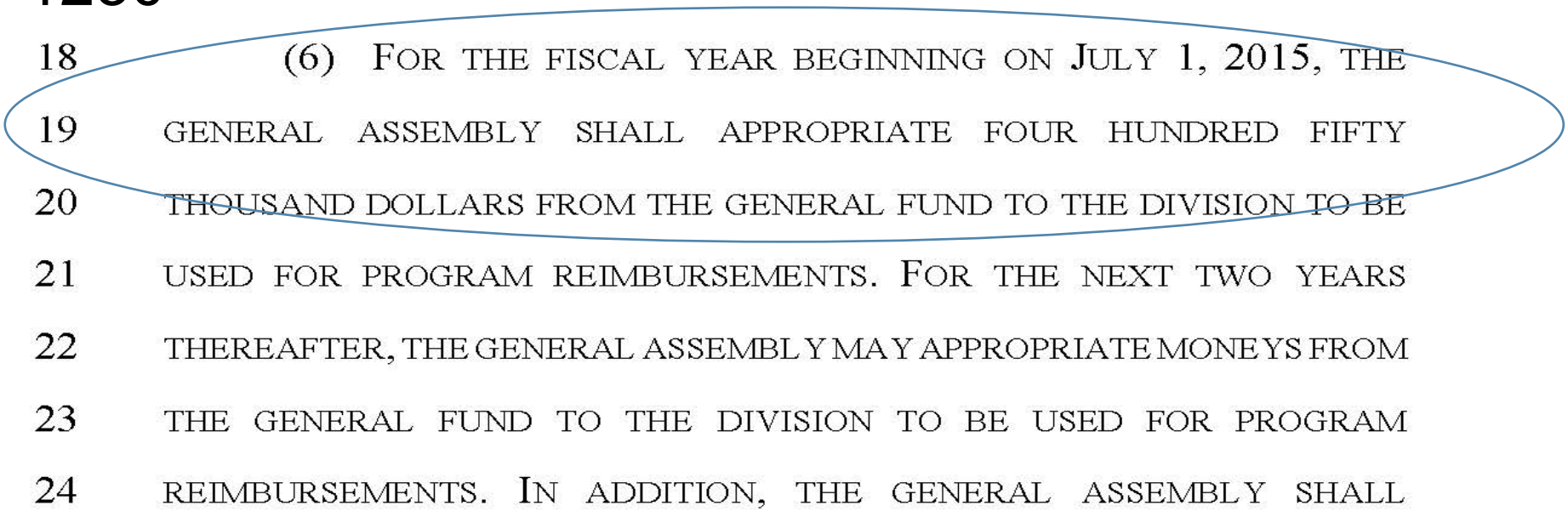
Explicit attempts to override the market

Always too small to be effective for this purpose:
HB15-1230

REIMBURSEMENT MONEYS MUST HAVE LESS THAN ONE HUNDRED EMPLOYEES. A BUSINESS MAY BE REIMBURSED FOR UP TO FIVE INTERNS PER LOCATION AND UP TO TEN INTERNS TOTAL AT ALL LOCATIONS, BUT THE MAXIMUM AMOUNT THAT A BUSINESS MAY BE REIMBURSED FOR EACH INTERNSHIP IS FIVE THOUSAND DOLLARS. AT LEAST HALF OF THE REIMBURSEMENT AMOUNT MUST BE PAID TO THE INTERN. TO BE

Explicit attempts to override the market

Always too small to be effective for this purpose:
HB15-1230



(6) FOR THE FISCAL YEAR BEGINNING ON JULY 1, 2015, THE GENERAL ASSEMBLY SHALL APPROPRIATE FOUR HUNDRED FIFTY THOUSAND DOLLARS FROM THE GENERAL FUND TO THE DIVISION TO BE USED FOR PROGRAM REIMBURSEMENTS. FOR THE NEXT TWO YEARS THEREAFTER, THE GENERAL ASSEMBLY MAY APPROPRIATE MONEYS FROM THE GENERAL FUND TO THE DIVISION TO BE USED FOR PROGRAM REIMBURSEMENTS. IN ADDITION, THE GENERAL ASSEMBLY SHALL

This bill is expected to finance approximately 90 internships

Tax incentives are bad policy

If you knew enough to reliably identify growth opportunities

- You wouldn't give that information away for free
- You wouldn't work for the government

Do you want to be in a relationship with a partner who has to be paid?

Tax expenditures

- Are almost always zero-sum games
- Most scams begin with the failure to recognize a zero-sum game

Can tax expenditures be fixed?

- Maybe require tax expenditure advocates to invest their own money in each opportunity?

Econ 4231 and policy rectification

The course runs simultaneously with the session of the Colorado State Assembly

Students

- Choose four bills
- For each bill, students
  - Write up to four drafts of a five-page paper analyzing the economics of the bill
  - If the economic analysis is of acceptable quality,
    - Distribute the paper to all members of the Assembly committee reviewing the bill
    - Make a three-minute oral presentation in class
    - Testify in front of the relevant Assembly committee on two bills
- Collaborate at the end of the session on a Legislative Report Card

Econ 4231 and policy rectification

Example: HB16-1003

A BILL FOR AN ACT

Concerning the state income tax deductions for contributions to and distributions of investment earnings from the qualified state tuition program established by collegeinvest.

Econ 4231 and policy rectification

For purposes of calculating a taxpayer's Colorado taxable income, current state law begins from a base of the taxpayer's federal taxable income and provides for various modifications to that base, including subtractions from federal taxable income (state income tax deductions) in amounts equal to the full amounts of both contributions made by a taxpayer to the qualified state tuition program established by collegeinvest and distributions of investment earnings taken from the plan. The bill modifies these state income tax deductions by making the percentages of the amounts of contributions or distributions allowed to be subtracted from a taxpayer's taxable income dependent upon the amount of the taxpayer's federal adjusted gross income as follows:

Econ 4231 and policy rectification

- 200% of the amounts of contributions or distributions for a taxpayer whose federal adjusted gross income is $150,000 or less;
- 150% of the amounts of contributions or distributions for a taxpayer whose federal adjusted gross income is more than $150,000 but not more than $250,000; and
- 15% of the amounts of contributions or distributions for a taxpayer whose federal adjusted gross income is more than $250,000 but not more than $500,000.

The bill eliminates deductions for a taxpayer whose federal adjusted gross income is more than $500,000.

Econ 4231 and policy rectification

Example: HB16-1003

http://coloradoga.granicus.com/MediaPlayer.php?
view_id=18&clip_id=9032

3:15:00

Econ 4231 and policy rectification

The Legislative Report Card

- Approximately 700 bills
- 46% had the potential to
  - Provide pubic goods
  - Remedy negative externalities
  - Reduce market imperfections
- However
  - 4% would probably have discouraged the provision of public goods
  - 13% would probably have increased market imperfections
  - 6% would probably have redistributed wealth in favor of those who are already better off

Econ 4231 and policy rectification

- The Legislative Report Card
  - Best bill of the session: SB16-203
    - "Concerning the evaluation of state tax expenditures, and, in connection therewith, making an appropriation".
    - Tax expenditures can be misused to provide subsidies to private enterprises without improving the State's economy. Consistent evaluation of tax expenditure proposals might reduce abuse of these devices and simplify the tax code.

Econ 4231 and policy rectification

- The Legislative Report Card
  - Worst bill of the session: SB16-067
    - "Concerning a property tax exemption for personal property used to provide broadband service".
    - It would provide uncapped subsidies to investments by a thriving, oligololistic industry. The bill does not require that those investments benefit any State residents who are underserved. The subsidies could be claimed for investments that would have been made without them.

Econ 4231 and policy rectification

- The Legislative Report Card
  - Honorable mention worst bill of the session: SB16-155
    - "Concerning a state sales and use tax exemption for historic aircraft on loan for public display".
    - It would provide uncapped subsidies for the owners of planes built as recently as 1981, if the planes were "on loan" to a museum that was open at least 20 hours per week. The bill does not define what a loan would be, does not restrict private use of the planes for hobbyist purposes and may not restrict use of the planes for interstate travel

Econ 4231 and policy rectification

- The Legislative Report Card
  - Final grade for the 2016 Assembly session: B-
  - Curve: Generous

What does all of this mean for the CSTPR?

STPR seeks to improve how science and technology policies address societ
eds, through research, education and service.

e Center is a response to an increase in problem-focused research at the
erfaces of environment, technology, and policy, and to the growing demand
blic and private decision makers for “usable” scientific information. Our work
en aimed at understanding the choices that people and institutions make in
rsuing goals under uncertainty, be it an uncertain future climate, uncertain
tcomes of investments in science and technology, or the uncertain outcome
rticular environmental policy. One of our goals is enlarging the range of cho
nsidered by policy-makers, by analyzing options in areas such as energy
hnology, carbon management, science investments, and public lands and
osystems management.

linking integrative science with the needs of decision makers, science and
hnology policy research can serve a valuable role in helping the research
mmunity better focus its efforts on issues of importance to society, and deci
kers can more effectively incorporate scientific and technological advances
ir decision processes.

Carbon Management on Public Lands in the Intermountain West

Lisa Dilling is collaborating on a USDA-funded project with colleagues to understand the decision process on public lands in southwest Colorado and how carbon information might be incorporated into decision making. Under new requirements, U.S. National Forests are required to evaluate their carbon stocks and potential for management in the future for an agency-wide 'Performance Scorecard.'

Potentially addresses negative externalities, valid concern of government

mproved Cookstove Research in Northern Ghana

Nearly 3 billion people cook over open flames on a daily basis. This behavior impacts local and regional air quality, global climate, and human health. With colleagues in CU's Engineering and Applied Math departments, the National Cente for Atmospheric Research, North Carolina State University, and the Navrongo Health Research Center in Ghana, Katie Dickinson is investigating how cooking behaviors and the adoption of cleaner stoves influence environmental and health outcomes.

Potentially addresses negative externalities, valid concern of government

nside the Greenhouse

Max Boykoff, Rebecca Safran (Associate Professor, Ecology and Evolutionary Biology) and Beth Osnes (Associate Professor, Department of Theater and Dance) at the University of Colorado Boulder are working to deepen our understanding of how issues associated with climate change are/can be communicated, by creating artifacts through interactive theatre, film, fine art, performance art, television programming, and appraising as well as extracting effective methods for multimodal climate communication.

Potentially addresses negative externalities, valid concern of government

nteractions of Drought and Climate Adaptation for Urban Water

Led by Lisa Dilling, this NOAA Sectoral Applications Research Program (SARP) project is examining how drought policies interact with both short-term drought and long-term climate change, asking whether adjustment today or in the past leads to more resilient systems across climate time scales.

Potentially addresses negative externalities, valid concern of government

Knowledge, Power and the Coproduction of Climate Information for Adaptation to Climate Change in Tanzania

Lisa Dilling, Meaghan Daly, Mara Goldman and Eric Lovell are conducting a project that aims to improve understanding of processes to effectively link climate information and adaptation at national and local scales in Tanzania. The approach is to explicitly recognize and examine the ways in which the varying epistemological traditions and relations of power among vulnerable communities, disaster management professionals, and climate experts influence the perceived value of climate information for improved early warning and climate adaptation.

Potentially addresses negative externalities, valid concern of government

Media Coverage of Climate Change

Over the past decade, Max Boykoff has published many peer-reviewed papers and book chapters addressing this subject. Also, with colleague Maria Mansfield (University of Oxford) and then beginning in 2013 with colleagues Ami Nacu-Schmidt, Lucy McAllister, Kevin Andrews, , Gesa Ludecke, Lauren Gifford and Meaghan Daly, Max developed methods to monitor media coverage of climate change at the international and various national scales.

Potentially addresses negative externalities, valid concern of government

Playing With Fire: Social Interactions and Homeowners' Wildfire Mitigation Behaviors

Working with Hannah Brenkert-Smith (CU-IBS) and Nicholas Flores (CU-IBS/ECON), Katie Dickison conducted choice experiments in a web-based survey of homeowners living in fire-prone areas of Colorado's Western Slope to measure the effects of risk interdependency, social norms, and costs on risk reduction decisions. By combining experimental and observational approaches, this body of research seeks to deepen our understanding of the role(s) of social interactions in shaping risk-related decisions, and the ways in which policies and programs can harness the power of these social effects to encourage homeowners to take action.

Potentially addresses negative externalities, valid concern of government

But there are lots of private actors here. Government action may not be warranted.

Social and Economic Aspects of Vector-Borne Disease

Vector-borne diseases impose wide-ranging costs on human societies. Human behaviors and decision-making at various scales influence the transmission and impacts of these diseases. As part of Katie Dickinson's dissertation research, she examined determinants of malaria prevention, diagnosis, and treatment behaviors in Tanzania. Specifically, she examined how these behaviors varied with socioeconomic status, and also looked at knowledge and behaviors around environmental management for malaria control.

Potentially addresses negative externalities, valid concern of government

Understanding the Drivers of Adaptation at the Municipal Level in CO, WY and UT

Lisa Dilling is co-leading this WWA-funded project to investigate why some local decision makers choose to adapt to climate-related stress and risk while others do not. The project is systematically investigating the conditions under which local decision-makers in cities and large towns in Colorado, Utah, and Wyoming decide to adapt (or not) to increased climate-related risk and hazards.

Potentially addresses negative externalities, valid concern of government

“For duty and humanity!”

Thank you!