

# System of Environmental Economic Accounting



System of  
Environmental  
Economic  
Accounting

# Area E: A practical strategy for the application of environmental accounting to emerging issues

**Lisa Wardlaw-Kelly**



United Nations



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Economic  
Accounting

## SEEA NEWS AND NOTES, Issue 2, June 2018

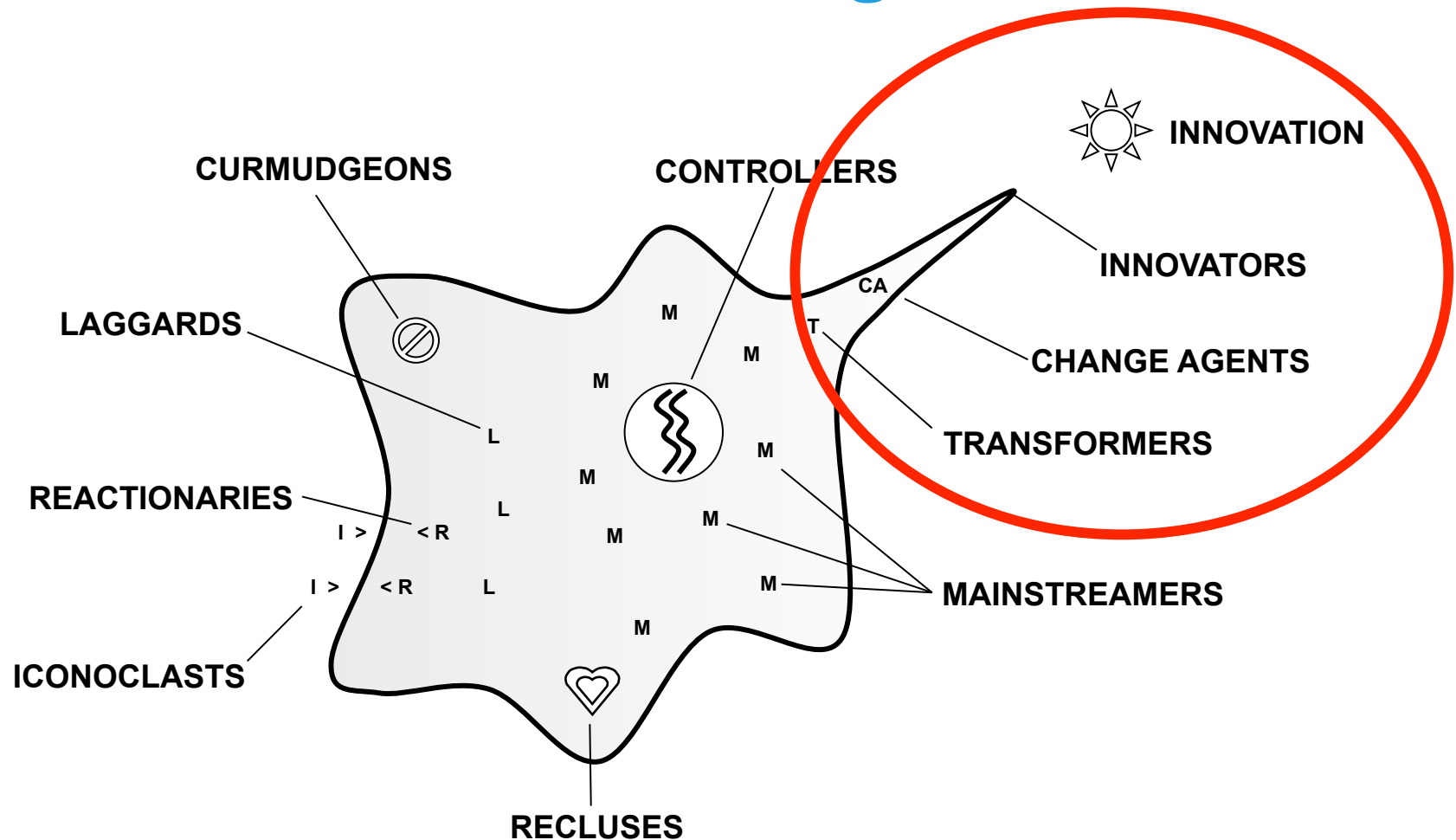


From the Chair of the UN Statistical Commission

# Remember last year?

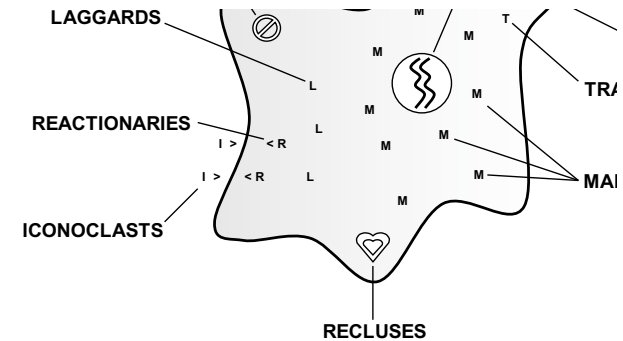


# The Amoeba of Cultural Change

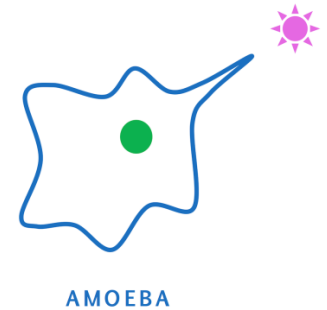


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# Amoeba: A Reminder about the Roles



- **Innovator** formulates / discovers / champions new ideas
- **Change Agents** translate / promote the ideas to target groups
- **Transformers** early adopters, approve of and spread the ideas
- **Mainstreamers** adopt ideas when everybody else does
- **Laggards** late adopters (do not like change)
- **Reactionary** actively resist the change (have something to lose)
- **Iconoclast** identifies problems and critiques the status quo
- **Recluse** preoccupied other matters, philosophical, detached
- **Curmudgeon** cynical grouches, complainers ... “why bother?”



# Remember **A.M.O.E.B.A.:**

**A** = **Adapt** the Innovation to your context

**M** = **Mobilize** the Change Agents

**O** = **Orient** the Transformers to point in your direction

**E** = **Easy Does It** for the Mainstreamers

**B** = **Build** Momentum steadily, one step at a time

**A** = **Avoid** the Reactionaries!



# Last years' goals

- Goal –to bridge the divide between producers and users and get the SEEA into 'active service' of decision-makers
- Success – by 2020 users demand, influence and use environmental economic accounts
- Progress – by 2018 for example: change agents and transformers get key messages, help to promote, users ask questions, put accounts on agendas, invite us to meetings, work with us to develop SEEA based indicators, lots of positive publicity for SEEA accounts



## Last years' questions....

- What change agents and transformers will you engage?
- Identify conference presentations you can give
- Identify papers, articles and studies you can publish
- Identify forums you can join
- Provide quarterly updates for website to Jessica

## Discuss over afternoon tea:

What was your proudest communication achievement?

What were the challenges or barriers?

What was your experience? Were you a change agent?

Did you successfully identify transformers?

What were the key opportunities to promote the SEEA?

Did you communicate the key messages effectively?

Are these messages still valid or do we need new ones?

So did we meet last year's goals?

# Malaysia – capsule presentation



# Communicating for Impact: Bridging Research and Policy

- Pete Nelson
- UN Committee of Experts on Environmental-Economic Accounting
  - New York, 22 June 2018

# Why the SEEA is So Important



## • The Broad View

- Environmental accounts provide society with information essential for achieving a sustainable, prosperous future.

# Scholarship and Policy: Two Cultures

# Scholarship and Policy: Two Cultures



- Scholars Zoom In
- Policymakers Zoom Out



# Scholarship and Policy: Two Cultures

or cost.

The dynamics of the shadow value of the wildlife stock to the community are de

$$\dot{\gamma} = -R_w - \alpha p H_w - \beta T_w + \gamma (\delta - F_w + H_w + Q_w) \quad (6)$$

## Community Requirements for a Steady State

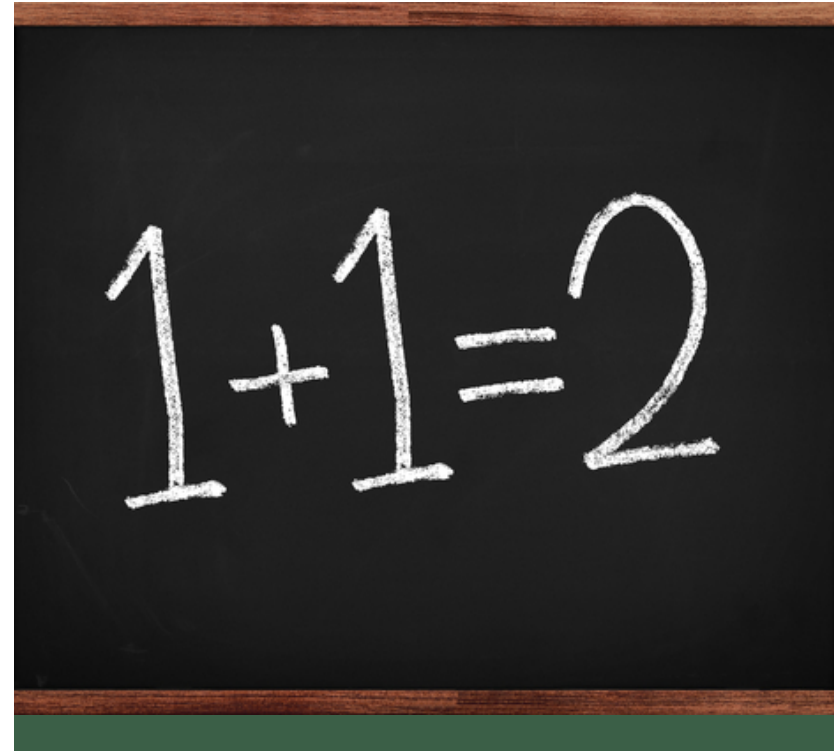
In a steady state,  $\dot{W} = 0$ , and off-take from hunting and poaching must equal gro

$$H(W, A) + Q(W, A) = F(W) \quad (7)$$

onally,  $\dot{\gamma} = 0$  and the shadow value of wildlife equals

$$\gamma^* = \frac{R'(W) + \beta T'(W) + \alpha p H_w(W, A)}{\delta - F'(W) + H_w(W, A) + Q_w(W, A)} \quad (8)$$

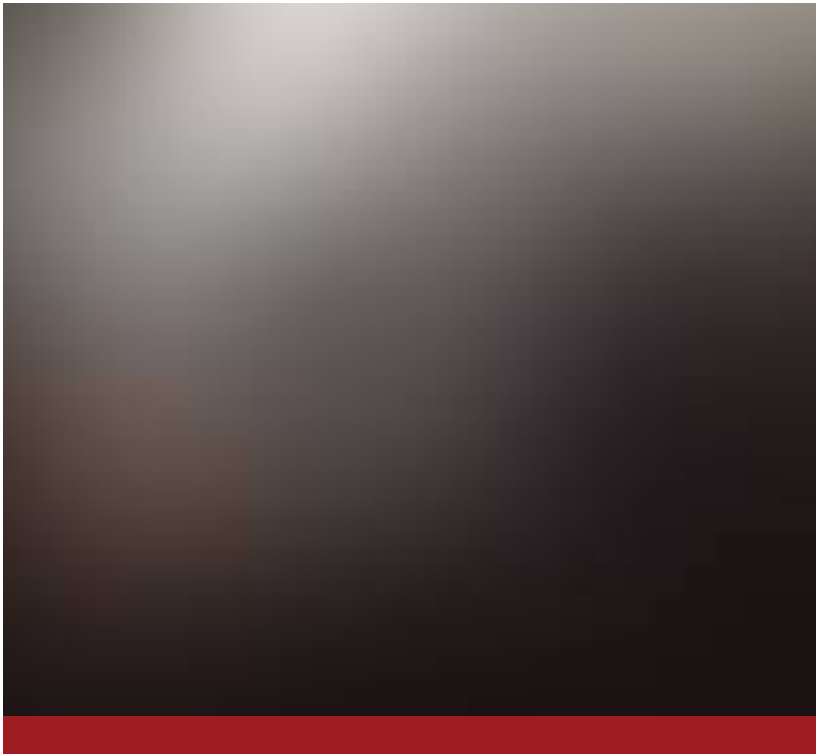
Note that this shadow value can be positive or negative, depending on the sign of marginal net benefits to the community (let  $MNB = R_w + \alpha p H_w + \beta T_w$ ) and on the discount rate over the marginal net growth (natural replenishment rate net of margining and poaching, or  $MNG = F_w - H_w - Q_w$ ). As Horan and Bulte (2004) discuss, ambiguity in the sign of the shadow value leads to the possibility of multiple equilibria.



- Scholars Are Comfortable with Complexity

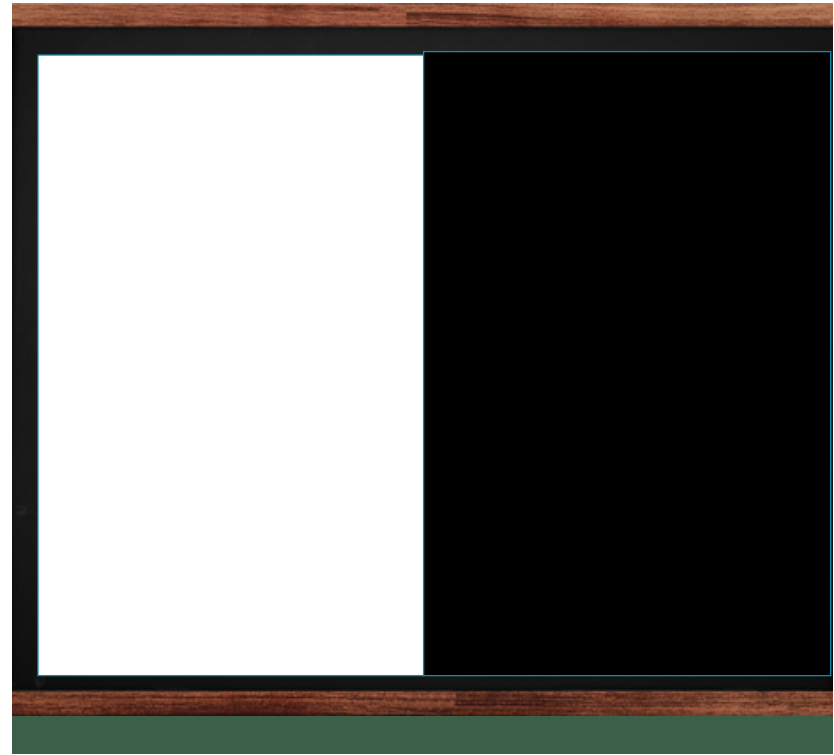
- Policymakers Want Simplicity

# Scholarship and Policy: Two Cultures



- Scholars Appreciate Nuance

• .



- Policymakers Want Certainty

# The Key to Success: Bridge these two cultures

- The stakes:
  - Research that isn't heard is squandered
  - Policy not informed by good research will be disastrous
- To be successful...
  - Understand and emphasize context
  - Put things in everyday language
  - Craft simple messages\*

\*Message is paramount

# Thoughts on Context



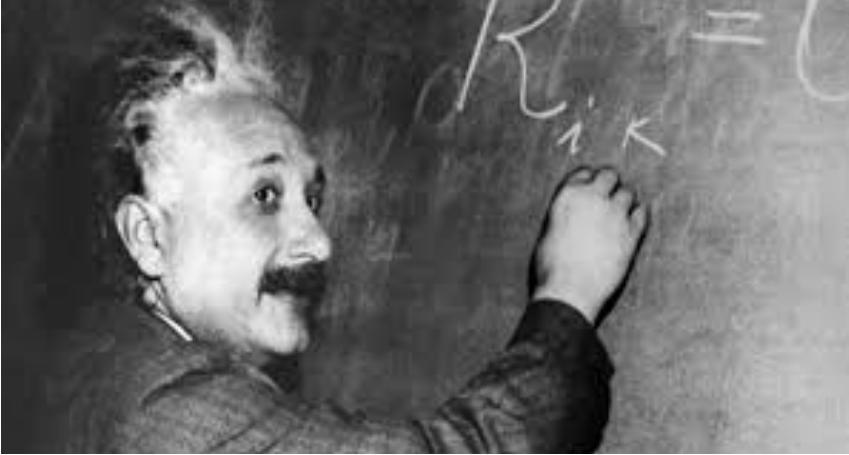
- “Build a better mousetrap and the world will beat a path to your door ...”
- assuming the world knows there is a mouse problem!
- The details of research tend to be of little interest to policymakers, but the problems the research addresses are interesting.
- Don’t skim on laying out the problem the research is attempting to address – that’s where the excitement comes from.
- Rule of thumb: All the things you think everyone knows, nobody knows! Don’t shy away from reemphasizing the fundamentals.

# Thoughts on Clear Language



- “Old words are best and short old words are best of all.” – Winston Churchill.
- Be ruthless about taking out jargon in policy-related communications. And yes, “externality” is jargon.
- Look for long sentences, >25 words, and eliminate extraneous words or break into two.
- Rule of thumb: Tell me what your research says in under 20 understandable words.

# Thoughts on Messaging



“If you can’t explain it simply, you don’t understand it well enough.” – Albert Einstein

- Too many messages translate into no message. Try to boil down to one or two.
- Get to the point as quickly as possible. (The opposite of the academic template - put conclusions up front).
- Rule of thumb: If someone were to tell policymaker X about your research in a one-minute elevator conversation, what would you want them to say?

# In Practice: The Communication Pyramid

\* ← Tweet





# Build the pyramid into work flows

stochastic electricity demand and unit outages, fixed costs of starting up and shutting down, and constraints on changes in a unit's generation level across hours. Unfortunately, it is computationally infeasible to combine the first two model phases with an hourly unit commitment model for the entire eastern interconnection. Therefore, we build a simplified unit commitment model for tractability, approximating a unit commitment model's key features. We first describe the assumptions and the market equilibrium, and then explain how the model approximates uncertainty, fixed costs, and constraints on changing generation across hours.

A unit's generation costs include both fuel costs and nonfuel costs. Fuel costs equal the price of fuel ( $p_a$ ), in dollars per million British thermal units (mmBtus), multiplied by the unit's heat rate ( $h_i$ ), in mmBtus per megawatt hour (MWh) of generation. The price of fuel varies across units because of fuel type and regional fuel price variation, and across hours because of temporal changes in fuel prices. The nonfuel costs ( $n_i$ ), in dollars per MWh, include costs of labor and materials and vary across units but not across hours. For simplicity, the heat rates and nonfuel costs do not depend on the level of generation, and marginal costs are given by  $m_a = h_i p_a + n_i + e_i \tau_i$ . Note that marginal costs depend on the emissions costs,  $e_i \tau_i$ , where  $\tau_i$  is the sum of the annual and summer emissions credit prices (summer credit prices equal zero in nonsummer months;  $e'$  replaces  $e_i$  for units with SCR).

<sup>8</sup> For eastern nuclear units, between 2005 and 2015 we observe little variation in annual capacity factors and few trends in monthly capacity factors, supporting this exogeneity assumption.

Resources for the Future | Linn and McCormack

Each coal and large natural gas or oil-fired unit has a minimum generation level,  $\underline{g}_i$ , such that if the unit is operating, it cannot operate below that level. All units have a maximum generation level,  $\bar{g}_i$ . The maximum generation level varies across hours and units, and the minimum level varies across units.

Hourly aggregate fossil generation is exogenous to the model. Recall that aggregate fossil generation excludes generation from nuclear, hydroelectric, and renewables. Following Bushnell et al. (2014), among others, we assume that generation from these technologies does not respond to electricity prices. The lack of available data necessitates this assumption, although we note that it is particularly reasonable for nuclear and renewables. These technologies have very low marginal operating costs and therefore generate as much electricity as technically possible.<sup>8</sup> Hydroelectric plants, on the other hand, can be dispatched to some extent subject to environmental and other constraints. However, in the East, hydroelectric plants accounted for just 3 percent of power generation in 2005, and this fact, combined with the limited dispatchability of hydroelectric generation, suggests that the exogeneity assumption has little effect on the main results.

Next, we turn to the market equilibrium. We assume that the market is perfectly competitive and that firms treat the equilibrium price as being independent of the

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## The Roles of Energy Markets and Environmental Regulation in Reducing Coal-Fired Plant Profits and Electricity Sector Emissions

Oct 23, 2017 | [Joshua Linn](#), Kristen McCormack

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**The Roles of Energy Markets and Environmental Regulation in Reducing Coal-Fired Plant Profits and Electricity Sector Emissions**

24 pp. | [PDF](#) | [Download citation](#)

### SUMMARY

Market forces explain much of the US electricity sector NOx emissions reductions and nearly all coal plant retirements

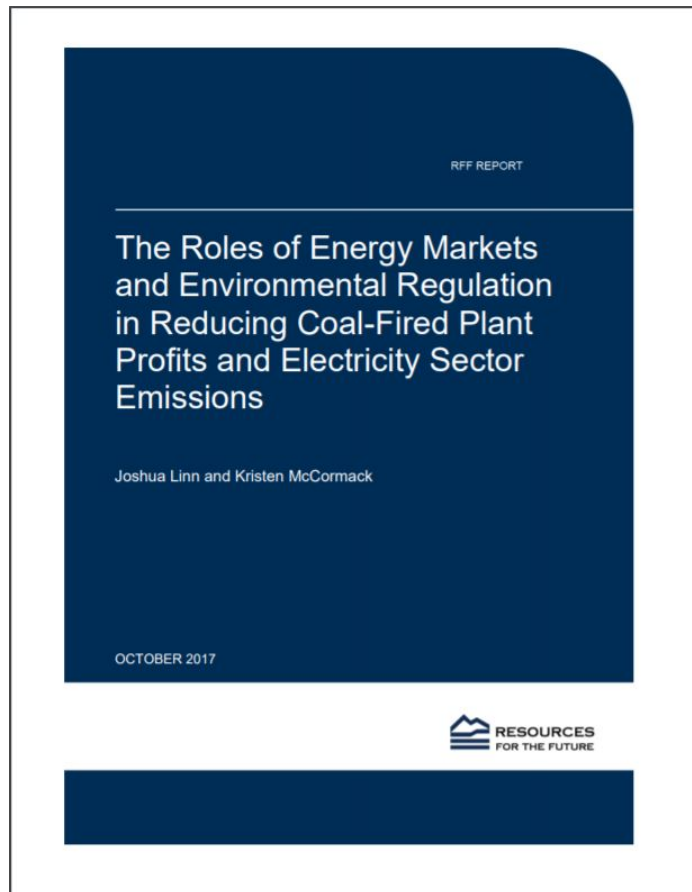
### KEY FINDINGS

- Causes of recent US coal plant retirements have been highly controversial.
- We use a new, highly detailed model of the US electricity sector to analyze regulations of nitrogen oxides, which harm human health and the environment.
- Weakening regulation would have little benefit for coal plants, and would raise emissions.

### ABSTRACT

Between 2005 and 2015, US electricity sector emissions of nitrogen oxides, which harm human health and the environment, declined by two-thirds, and many coal-fired power plants became unprofitable and retired. Intense public controversy has focused on these changes, but the literature has not

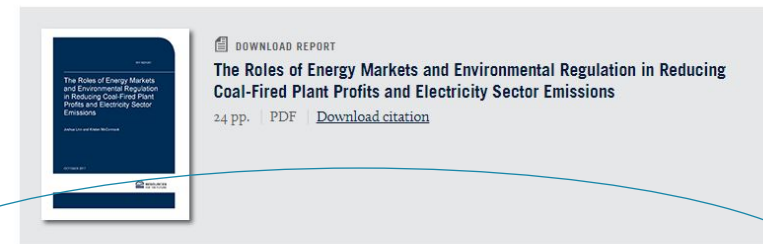
# Build the pyramid into work flows



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# Some Lessons from Experience

- “Experience is the name everyone gives to their mistakes,” – Oscar Wilde

- What works

- Audience Research
- Targeted outreach
- Experimenting

- What doesn't

- “Build it and they will come.”
- Scattershot outreach
- Not having a plan for unwinding failed experiments



# Beyond the Conveyor Belt

The model of research study, outreach, repeat has a major drawback.

Often the policy world isn't ready to absorb the findings.

Your outreach doesn't always have to be based on recent work.

Take advantage of your stock of knowledge (experts and past research).



# The Ideal World vs. the Real World

- Ideal
  - Communications involved early in every effort
  - Enough resources to pursue the latest trends in communications
  - Enough time to give every effort a full communications plan
- Reality
  - Communications often consulted at the last minute
  - Budgets constrained
  - Not enough time in the day to give every project its due

# Living in the Real World

- Always drive toward crafting the clearest, most compelling message.\*
- Build as many outreach vehicles into your workflows as is practicable.
- Prioritize! If resources are constrained try to choose one or two things to do really well each year.
- Take advantage of your research “stock.”

\*Key message

- Thank You!

- [pknelson@gmail.com](mailto:pknelson@gmail.com)



# SUPPORTING THE SDG PROCESS: A PROSPECTIVE CASE STUDY

Lisa Wardlaw-Kelly

Australian Bureau of Statistics

# Proposal for goal to influence SDG 2020

In themes: water, air emissions, energy, material flows:

What are the key SDG indicators that SEEA can support?

What is the vision for success in 2020?

What can we offer, who can we help, and how?

What are the opportunities (people, events, processes) to influence at international and country levels?

Are we ready to help (eg global databases, in train?). If not, how can we get ready?

What tools do you need to influence?



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# INTRODUCTION TO TWITTER

Lisa Wardlaw-Kelly  
Australian Bureau of Statistics



United Nations

# Twitter Basics

# What is Twitter?

A platform where users share their thoughts, news or information in **280 characters** of text or less

# Components of a Tweet



# Feed

→ ↺

Secure | <https://twitter.com>

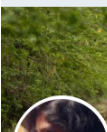
Home

Moments

99+ Notifications

Messages

Search Twitter



Nitasha

@NitNair\_

Tweets

502

Following

606

Followers

625

Trends for you · [Change](#)

#WorldEnvironmentDay

@AlertNet, @wef and 2 more are Tweeting about this

Miss America

Miss America will no longer have a swimsuit competition

#TuesdayThoughts

72K Tweets

Harvey Weinstein

11.7K Tweets


#UNGA

General Assembly


3,359 Tweets

David Koch

What's happening?




Climate & Clean Air Retweeted


 **World Bank Energy** @WBG\_Energy · 4h


Reducing #methane emissions from energy production is critical if we are to realize the goals of the #ParisAgreement. @WorldBank supports the new Methane Guiding Principles initiative, which will be a part of our robust #climate action: [wrl.d.bg/Mdev30kkuTt](http://wrl.d.bg/Mdev30kkuTt) via @CCACoalition

4

 **New Scientist** @newscientist · 37s

Syphilis and gonorrhoea cases are up by one-fifth in England – why have people stopped being scared of STIs? [newscenti.st/2sxREF5](https://www.newscientist.com/story/20180525-syphilis-gonorrhoea-cases-are-up-by-one-fifth-in-england-why-have-people-stopped-being-scared-of-stis/)



 SEEA



# Getting Started

# Start with the 5 W's

- Who
- What
- When
- Where
- Why

# Questions to ask before tweeting

- Why are you tweeting?
- Who is the intended audience?
- How could you make it more interesting ?
- Would you enjoy reading this if someone else wrote it?

Source: <https://goo.gl/SREEwA>

# Twitter Examples – The Good and the Bad

# Sharing reports

## Bad Tweet

**TwitterAcct:** New report released by UN on energy accounts in New York

## Good Tweet

**TwitterAcct:** Acc to a new report by @UN, almost 50 million new jobs to be created in the #Solar Industry by 2030. Read more [goo.gl/mxaaLu](http://goo.gl/mxaaLu)

# Sharing articles or opinions

## Bad Tweet

**TwitterAcct:** Reading a great article in New York Times on natural capital accounting

## Good Tweet

**TwitterAcct:** Great article in [@nytimes](#) on the challenges of [#NaturalCapital](#) concept with examples of implementation in countries: [goo.gl/mxaaLu](http://goo.gl/mxaaLu)

# Sharing News about event

## Bad Tweet

**TwitterAcct:** Event on world environment day planned on 5<sup>th</sup> June in New York UN HQ

## Good Tweet

**TwitterAcct:** #WorldEnvironmentDay event to be hosted by @UN in #NewYork to raise awareness on pollution, Join in to #BeatPlasticPollution by signing up today: [goo.gl/mxaaLu](https://goo.gl/mxaaLu)



# More Examples of Good Tweets



**UN Climate Change** @UNFCCC · May 20

A new @ILO report says that actions in line with the objectives of the #ParisAgreement can create 24 million new jobs around the globe by 2030 [bit.ly/2lk0mRa](https://bit.ly/2lk0mRa) Further proof that a #GreenEconomy can improve livelihoods for this & future generations



**NatCapCoalition** @NatCapCoalition · May 29

We'll be in India on June 5th for #WorldEnvironmentDay 🌱, taking part in events with @UNEnvironment / @ErikSolheim. Then on June 6th, we'll hold a session with @YESBANK, @WWFINDIA, @GIST\_India, @TataCompanies/@TataPower & more in New Delhi! [bit.ly/2lYjalk](https://bit.ly/2lYjalk) #NaturalCapital



**Luc Bas** @lucbas1 · May 29

Another small step for the finance world but very important in the #Naturalcapital investmentboost! @iucn

**IUCN Europe** @IUCNBrussels

The Natural Capital Financial Facility #NCFF, a EUR400 million initiative of the @EIB, provides new, much needed finance for green infrastructure, #biodiversity protection & #ClimateChange adaptation @NatCapCoalition [bit.ly/2Jb00tS](https://bit.ly/2Jb00tS)

# Good Practices

# Increase Effectiveness

- **Have a call to action:** What would you like the reader to do next after reading the tweet – join a group, change behavior or learn more?
- **Tell a story:** Remember that readers are inundated with information online and only memorable messages would make a mark and have a higher recall
- **Provide context:** Helps clarify what you are talking about. Reference people or topics through Hashtags(#)

# Reach a Larger Audience

- **Craft your voice**

For effective tweeting, it's better if one topic is the primary focus of what you write about and is the subject of most of your tweets. However, be yourself and personalize your tweets.

- **Regular engagement**

More regular you are, more engaged and responsive your followers would be. Like and retweet content that you find interesting.

- **Listen. Ask. Respond**

Just like real-world conversations, it is important to listen and interact with others around you. This will help you in building communities that are relevant to the content you post and share.

# Risks to Keep in Mind

- **Public Vs Private Information:** Twitter is an open and public forum. Make sure that the information or quote tweeted is for openly sharing with the public
- **During Events and Meetings:** Ensure you have permission to publicly share the discussions or name the speaker before tweeting
- **Attribution:** Make sure proper credit is given for any content used, such as pictures, quotes or information/statistics
- **Be Respectful:** Remember that Twitter is a free and open forum with varying viewpoints. It is important to be respectful and polite in your communications.



# THANK YOU

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