



# SESYNC Feedbacks

News from the National Socio-Environmental Synthesis Center



## SESYNC RESOURCES | Breaking Down Our Resource Types

### Get to Know the Resources in Our Collection

SESYNC's collection of open-access resources is for anyone interested in learning, teaching, or researching about socio-environmental (S-E) systems and sustainability. Our resources come in a variety of formats; learn more about each of them below to find which ones are right for you and your goals.

**Explainers** – **Explainers** are brief, informal articles that summarize a SESYNC or S-E-related topic, concept, or methodology. Explainers are ideal for those who are new to a subject and are seeking a brief, non-technical introduction. Examples include:

- **Resilience Theory and Socio-Environmental Systems**
- **What Is Actionable Research?**
- **Qualitative Synthesis Methods: Critical Interpretive Reviews, Narrative Reviews, Expert Opinions**

**Case Studies** – **Case Studies** use real-world examples of S-E problems to illustrate the synthesis research process. Each case study provides information about the case itself, detailed teaching notes, and student-activity materials, while focusing on learning goals that are critical for understanding and practicing S-E synthesis. Examples include:

- **Our Coffee Conundrum: The Socio-Environmental Issues of Our Cultural Addiction**
- **Collaborative Water Governance and Social-Hydrological Justice**
- **To Plant or Not to Plant? Regulating Invasive Plant Species in the Mid-Atlantic States**

**Learning Materials** – **Learning Materials** provide a more advanced, in-depth exploration of S-E topics and approaches using various media. They include videos, audio interviews, slides, and more. Learning materials are ideal for both individual and group instruction, as well as self-taught learners who are interested in broadening their understanding of more specific S-E topics. Examples include:

- **Critical Political Ecology**
- **Interview: Putting People into Climate Models—A New Frontier**
- **Applying Environmental Economics to Policy: Taxes, Fees, Cap & Trade**

**Lessons** – **Lessons** provide structured content for educators to use in classroom or workshop instruction using timely, relevant S-E examples. They are suitable for undergraduates and above. Lessons include an overview of the topic, learning objectives, key concepts/topics, and background information for the instructor. They also provide activities for engaging learners; assignments; and supplemental materials for educators, including videos, articles, slides, etc. Examples include:



- **Marine Spatial Planning for Sustainability: An Example of a Semi-Qualitative Synthesis Approach**
- **Governance Theory Part 1: Revising the Tragedy of the Commons**
- **Coastal Resilience: Seawalls, Mangroves, and Environmental Justice**

**Data Lessons/Guides** – **Data Lessons/Guides** convey the wisdom of SESYNC's data scientists to help researchers use their data more effectively. Examples include:

- **Sharing Your RShiny App**
- **Writing Data Management Plans**
- **Making Free Maps with R, ggspatial, and Mapbox**

## NEW MODELING TUTORIAL | Selecting a Modeling Approach



### Watch Our Latest Modeling Tutorial on How to Select the Best Modeling Approach for a Socio-Environmental Problem

Solving complex socio-environmental problems requires the ability to understand and explore how natural and human forces interact together as a socio-environmental (S-E) system. While scientific modeling provides a systematic approach to organizing data, knowledge, and assumptions about a problem or a system, integrated modeling can be a powerful tool for

exploring S-E systems since it combines knowledge from multiple domains into one modeling framework.

However, with numerous integrated modeling approaches to choose from, it can be daunting to find the best one to suit your needs. Choosing from different approaches—including systems dynamics, Bayesian networks, and agent-based models—can be difficult because each one comes with its own modeling features and technical requirements that make it more suitable for some problems and less so for others. In [this tutorial](#), Dr. Serena Hamilton, of the Australian National University, outlines a model-selection approach that considers the user, management process, and project context, as well as other important selection criteria, to help viewers select the most appropriate modeling approach for addressing their particular environmental problem.

Drs. Tony Jakeman (Australian National University) and Sondoss Elsayah (University of New South Wales Canberra) also contributed to this tutorial.

For more resources on socio-environmental modeling, [see our list](#).

Be sure to subscribe to [SESYNC's YouTube channel](#) to receive notifications whenever we add new videos!

Subscribe

## SESYNC RESOURCES | Lessons in Sustainable Agriculture

Check out our new collection of agriculture-related lessons designed for higher-education classrooms, illustrating socio-environmental topics and concepts with real-world examples:



### Sustainable Agriculture: Resistance, Resilience, or Transformational Farming

This lesson focuses on analyzing techniques for improving soil health, ecosystem resilience, and ecosystem services, while providing diverse and nutritious food for the public. Learners will review an array of potential strategies and apply them to specific farming geographies. [See more.](#)

[Link Link](#)

### Sustainable Agriculture: Strategic Reductions in Food Waste

This lesson engages with recent food loss and waste (FLW) research and online resources to enable learners to analyze the causes of and chart potential solutions to FLW. Learners will role-play as particular food-service sector actors to advise both incremental and systematic corrections that address FLW. [See more.](#)



### Sustainable Agriculture: Aquaculture Scenarios

In this lesson, learners will work together to embody the roles of diverse and novice aquaculturists. They will consider the goals and constraints of their particular persona as they





choose from four aquaculture economic-development scenarios. Learners will defend their scenario choice and articulate a development pathway to 2030 that integrates economic, nutrition, and environmental goals. [See more.](#)

### Sustainable Agriculture: Community Gardens – Justice, Safety, and Climate Solutions

This lesson synthesizes the socio-environmental challenges and benefits of community gardens with the call for cities to designate more community garden space in planning for climate change, resilience, food security and sovereignty, and community integration. This lesson takes the form of a town hall meeting with city officials and residents weighing in on policy choices that will affect the gardens and the city's climate resilience. [See more.](#) [Text Link](#)



### Social and Environmental Dimension of Large-Scale Land Acquisitions – Part 1

Understanding the extent and impact of large-scale land acquisitions (LSLAs) requires detective-like research approaches in which quantitative and qualitative information together reveal patterns and stories. This lesson involves three sessions. This first session (Part 1) asks learners to gather numeric and textual data from an open-access database then explain the findings. [See more.](#)

### Social and Environmental Dimension of Large-Scale Land Acquisitions – Part 2

In the continuation of the lesson, this second session (Part 2) asks learners to explore textual material and scholarly sources to enhance their understanding of LSLA in two countries. [See more.](#) [Text Link](#)



### Social and Environmental Dimension of Large-Scale Land Acquisitions – Part 3

In this third session (Part 3) of the lesson, learners will complete their exploration of textual documents (from the last session, Part 2) and in a homework assignment will develop a well-researched, evidence-based editorial suitable for an outlet such as *The New York Times*. [See more.](#)



Have suggestions for resources you'd like to see? Contact us at [communications@sesync.org](mailto:communications@sesync.org).

## NEW PUBLICATIONS | SESYNC in the Journals

**"Leveraging Unsupervised Learning to Develop a Typology of Residential Water Users' Attitudes Towards Conservation."** Published in *Water Resources Management* by former SESYNC postdoctoral fellow Renee Obringer and Dave D. White.

**"Targeted pollution management can significantly reduce toxic emissions while limiting adverse effects on employment in US manufacturing."** Published in *Environmental Science & Policy* by former SESYNC postdoctoral fellow Mary B. Collins, SESYNC researcher Simone Pulver, Dustin T. Hill, and Benjamin Manski.

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