



# **INTERNATIONAL RESEARCH: OPPORTUNITIES AND CHALLENGES**

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# Disclaimer

Statements here are my own and do not represent an official statement by the Smithsonian Institution.

# Data sharing is vital to invasive species identification and management

The next invasion can be anything from anywhere

- Expertise and identification capacity are thinly spread

Lyal & Miller, 2019, Biological Invasions 22: 101-127

- DNA based identification systems require shared libraries of identified sequences

Boldsystems.org

- Open data is encouraged by the US Government

OSTP Policy on Public Access to Results of Federally Funded Research (August 2022)

Executive Order on Biotechnology (Section 12.iv)(September 2022)

- Some international conventions support or require data sharing

International Plant Protection Convention (Article VIII)

# But some international policies restrict data and biomaterial sharing

- Two approaches to ownership
  - Traditional agriculture = global public goods
  - Convention on Biological Diversity = national sovereignty
- Nagoya Protocol on Access and Benefits Sharing under CBD
  - Currently applies to biomaterials (not data)
  - Implemented through national law

# Implications of national implementation

- Laws and policies vary greatly from country to country
- US Lacey Act enforces foreign laws with regard to biological materials imported into the USA

# Overlapping conventions in biodiversity: all now dealing with ABS issues

Agreement/Process	Sector	USA member?
CBD and Nagoya	Environment	No
Plant Treaty	Agriculture	Yes
IPPC	Agriculture	Yes
Commission on Genetic Resources in Food & Agriculture	Agriculture and much more	Yes
WHO	Human health	Yes
BBNJ	Marine	Yes

History of lack of coordination between environment and agriculture and biomedical communities and conventions, e.g., biocontrol issues, flu vaccine (Nature 542: 148)

# Digital sequence information

- **Consideration of including “Digital Sequence Information” under ABS regulations**  
**CBD decisions 13-16, 14-20, and others**
- **What is “DSI” exactly?**
- **Legal, philosophical and technical questions**
- **Might end open genetic data sharing models such as GenBank and BOLD**
- **Major discussion at CBD COP 15 in December 2022**

# What to do?

## AS INDIVIDUALS

- Consider these issues in research design
- Screen and document samples
- Be a good collaborator: Share benefits, including training, capacity building, and authorship

*A set of principles ... for equitable fieldwork in biology, PNAS e2122667119, 2022*

## AS COMMUNITIES

- Scientific community needs to engage the policy community
- Biodiversity/environment and agriculture/forestry communities need to engage

# Closing thought: Changing world order and “deglobalization”

## Seven ways the war in Ukraine is changing global science

Impacts on research are being felt more widely than just in Ukraine and Russia.

**nature**

- 20 July 2022
- Correction [27 July 2022](#)

# A practical guide

- **FAO “*ABS elements: Elements to facilitate domestic implementation of access and benefit-sharing for different subsectors...*”**
- **Updated 2019 by CGRFA**
- **Free pdf at [www.fao.org](http://www.fao.org)**