Making Sense of Coproduction: What Is It Good For?

Gabrielle Roesch-McNally and Holly R. Prendeville, Northwest Climate Hub

Why is coproduction important?

Coproduction is the “process of producing usable, or actionable science through collaboration between scientists and those who use science” (Meadow et al. 2016). Lack of coproduction with end users is arguably one of the reasons why much scientific information and resulting decision support systems are not very usable (Wall et al. 2016). Increasingly, public agencies and academic institutions are emphasizing the importance of coproduction of scientific knowledge and decision support systems in order to develop more engagement between the scientific community and key stakeholder groups. In particular, coproduction can be helpful in addressing complex social and ecological problems that have no simple answers and require engagement across multiple stakeholder groups to resolve. Coproduction has been embraced as a way for the scientific community to develop actionable scientific information that will assist end users in solving real-world problems. Coproduction is ultimately a negotiated and iterative engagement with stakeholders, which develops over time (Bartels et al. 2013, Dilling and Lemos 2011). This kind of engagement is increasingly necessary, particularly in the context of growing politicization of science and concerns about whose knowledge counts. Coproduction can be an effective way to build trust and coproduce knowledge systems that build on and integrate local and traditional knowledge. Employing coproduction strategies may enable the development of more relevant and useful information and decision support tools that address stakeholder challenges at relevant scales.

1 Gabrielle Roesch-McNally (groeschmcnally@fs.fed.us) is a Climate Hub Fellow; Holly R. Prendeville (hollyprendeville@fs.fed.us) is a Climate Hub Coordinator; U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station, 3200 SW Jefferson Way, Corvallis, OR 97331
Coproduction as a process of engagement

Coproduction is one way to approach stakeholder engagement. Note the process of engagement is as important as the end result (Cash et al. 2006), owing to enhanced collaboration and transfer of knowledge among all parties involved. Coproduction begins with setting the agenda, including determining what questions are being asked and how the research process should be designed (Wall et al. 2016). Although coproduction design includes many aspects, we have synthesized seven key elements (developed from Bartels et al. 2013, Beier et al. 2016, Meadow et al. 2015, Reed et al. 2014) to include in its application (Wall et al. 2016):

1. Purposeful recruitment of a broad set of stakeholders including key stakeholder groups.
2. Regular and repeated interaction with stakeholders during the project, including agenda setting, research, analysis, tool development, outreach, and evaluation phases.
3. An emphasis on tangible, timely results that address concerns of collaborating stakeholders.
4. Long-term engagement (relationship building takes time and trust).
5. Opportunities for reflection and evaluation of the process and the tangible work.
6. Developing usable science that makes science understandable and available to relevant stakeholders.
7. Research that integrates interdisciplinary perspectives.

Ways of engaging

Efforts to collaborate with stakeholders, including coproduction processes, have been developed to counter the notion that experts should be isolated from decision makers and that scientific information should be delivered in a top-down way (Cash et al. 2006). Usable science requires an iterative approach which relies on collaborative relationships between scientists and decision makers and can be facilitated through different forms of engagement (Dilling and Lemos 2011). Truly collaborative research is where “scientists and local experts not only exchange relevant information but jointly generate (new) knowledge on the basis of their scientific as well as local expertise (joint research)” (Wiek 2007). To use coproduction methods to create useful scientific information, including decision support systems, it is helpful to think about what coproduction is and what it is not.

Engagement of stakeholders exists along a continuum (fig. 1), with different levels of stakeholder engagement ranging from no engagement (where only scientists engage other scientists, usually within their discipline) to collegial (where stakeholders are empowered with
tools that help them to conduct research or pursue
development goals), which is aligned with coproduction.
Different levels of engagement (Meadow et al. 2016) are
explained in detail below:

**No engagement:** Scientists are focused on commun-
icating with other scientists. Sharing of scientific
information happens in peer-review journals and at
academic conferences. Other stakeholders are only
minimally involved, if at all.

**Contractual:** Scientists share information in a uni-
directional way, often limited to testing or verifying
technology. This mode might engage stakeholders to
test and give input on decision support tools or other
applications, often late in the design and implementa-
tion phase.

**Consultant:** Scientists generally lead research design
with stakeholder engagement at specific stages but
not necessarily ongoing. These interactions might be
planned phases of a research design where stakeholders
are consulted on various aspects of an issue; often a
third party is used to represent the interests of stake-
holders, sometimes in the form of a social scientist
communicating with an interdisciplinary team.

**Collaborative:** Scientists and stakeholders learn
together in a continuous relationship that is a partner-
ship, with emphasis on joint diagnosis of a problem,
and including agreement about desired products or
educational needs. Often stakeholders are trained in
a mode of scientific research and may collect data as
found in citizen science research.

**Collegial:** Scientists work with stakeholders to build
linkages between formal research that is stakeholder
driven and local knowledge, which includes training
stakeholders in the scientific process. This effort
acknowledges the importance of multiple evi-
dence-based approaches to research, which “proposes
parallels where indigenous, local, and scientific knowl-
dge systems are viewed to generate different man-
ifestations of valid and useful knowledge” (Tengö et
al. 2014) and integrates these systems in ways that can
empower stakeholders to design and conduct research
or develop their own decision support systems.

**Challenges with coproduction**

“Coproduction is expensive, time-consuming, diffi-
cult, and ambitious, and it will sometimes fall short of
achieving actionable science, especially in the initial
attempts” (Beier et al. 2016). While coproduction efforts
are laudable and engagement of stakeholders is encour-
gaged, coproduction is not a panacea. Coproduction
requires the development of trust that is built over time
(Wall et al. 2016), and because building relationships
takes more time, this might reduce productivity, at
least in academic terms (Coppock 2016). Additionally,
because coproduction is a process where outputs and
outcomes of a given project are dependent on collabo-
rative design, it may be difficult to convince grantors
to fund intangible processes versus specific products
outlined at the outset of a particular project (Coppock
et al. 2016). Therefore, greater efforts will be needed to
shift expectations with regards to process versus prod-
ucts in order to gain greater support for coproduction as
a strategy for engaging stakeholders.

Despite the many challenges, coproduction may be
increasingly needed as a tool to engage stakeholders
in the process of knowledge creation in ways that are
both iterative and collaborative, particularly in an
era where science is contested terrain and whereby
divisions among scientists, researchers, and the
broader public seem more distinct than ever. Therefore
coproduction will be a critical approach to ensuring
actionable science that serves the interests of diverse
communities, which can help solve complex social and
ecological problems, such as climate change and other
social-ecological problems.
References


