Five lessons to level up conservation successfully

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Conservation needs to scale successfully to protect nature. A new paper in *Nature Ecology & Evolution* takes lessons from around the world to show how that might be done.

To reverse biodiversity loss and meet ambitious global targets, conservation programs designed to preserve everything from forests to fish need to work "at scale."

Scaling can mean three things. Scaling "out" means expanding a program to new people and places, while scaling "up" means bringing in higher-level institutions, such as governments introducing policies or incentives that make it easier for individuals and private companies to engage.

Scaling "deep" means changing hearts and minds—what is socially acceptable. A particularly good example of scaling deep is the "Don't Mess with Texas" campaign in the 1980s, which successfully made littering a social no-no.

But not every attempt to expand pilot programs in one or more of these directions works. Now, the Catalyzing Conservation team led by Dr. Morena Mills at Imperial College London researchers have reviewed conservation initiatives around the world with global experts and come up with five lessons to avoid the pitfalls of ineffective expansion.

Two of the authors on the paper, Dr. Thomas Pienkowski and Dr. Matthew Clark, both from the Center for Environmental Policy at Imperial, speak about their work.

Dr. Clark says, "There's no magic bullet—it's not a case of 'do these five things and you will succeed'—but we hope these lessons will allow reflection on what hasn't worked, and where we need to go from here."

Lesson 1: There must be a balance between what is effective and what is scalable

Say you have a pilot program that works with coastal communities to

protect fish and other marine resources, aiming to improve the local ecology and economy. Then lots of neighboring communities take up the program. Great! This is scaling out, but has it actually been effective? Did it meet the stated goals of protecting marine life and improving local livelihoods? If the answer is no, it has scaled but it is not effective.

Conversely, something can be effective but not scalable. Dr. Clark works with communities to support mangrove conservation, which can involve planting programs. However, many of the seedlings die young. It's possible to use specialized tools and know-how to increase survival rates, which makes the planting more effective, but it is an intensive process, and so not very scalable across rural communities.

The team say these trade-offs between what's scalable and what's effective must be balanced.

Good example: Community-based forestry management in Nepal has been adopted for more than 20,000 forests since the 1980s and appears to have reduced both poverty and deforestation, showing that some initiatives can be both highly scalable and effective.

Lesson 2: Effectiveness can depend on scale

A pilot project that is successful in one area may not work when moved out to a new area. This is common, say the researchers, and can be for a number of reasons: pilots may be in optimal locations and have lots of oversight and investment that expanded programs won't have, for example.

But it can also work the other way. For example, says Dr. Clark, "Where the goal is to protect land for wildlife, larger animals that move over larger areas will only benefit once enough land is conserved, and enough patrols are in place to enforce the protection."

Good example: Cacao agroforestry in Belize became much more effective at scale when a clear market for sustainable cacao emerged and more international companies wanted to promote their use of these products.

Lesson 3: The effects of conservation can change the conditions for further conservation

Sometimes, conservation expansion can backfire even when it's effective. For example, a 10-year project in Mozambique introduced 'no-take' zones for fish and mangrove timber, which increased food security. However, once these areas had regained their value as sources of food and income, conservation support declined, leading to the abandonment of the zones in some areas.

These kinds of feedback loops between environmental change and human behavior can be negative, as in Mozambique, or positive, where the impact of conservation schemes in one area can lead to neighboring areas taking them up spontaneously, or where grassroots actions become national policy.

Good example: on the island of Pemba, Zanzibar, protected forest areas initially led to more harvesting on the edges of these zones; but this in turn led to neighboring communities applying for their own forest protection, spontaneously expanding conversation.

Lesson 4: Pressures to scale can lead to bad practices that undermine long-term outcomes

Ambition is needed to meet ambitious goals, but ambition without care can be harmful. Dr. Pienkowski explains, "NGOs [non-governmental organizations] play a really important role in scaling out, providing

technical and financial support to local communities. But there can also be blurred boundaries between assistance and coercion.

"This can take the form, for example, of NGOs misleading communities of the benefits they might get from engaging in conservation programs, or only engaging with people in the community who are most likely to benefit, leaving more vulnerable members behind and widening inequalities."

For example, the REDD+ scheme is designed to help developing countries manage their forests and improve carbon stocks, but its implementation in parts of Tanzania was marred by promised payments not materializing, leading people to abandon conservation efforts and be suspicious of other schemes.

Larger NGOs are often needed to scale programs, but this can be at the expense of local knowledge and grassroots organizations. For example, 'slash and burn' agriculture is considered bad practice in Europe, so European NGOs may lobby against it, but in communities in Africa it can be well used and an integral part of local ecosystem management.

Good example: Eco-tourism in Costa Rica started locally with support from NGOs, but has now become self-sustaining, meaning it no longer relies on direct aid or other structures that may undermine its long-term success.

Lesson 5: More evidence is needed

Dr. Pienkowski explains, "This one is really an appeal from us researchers, who are struggling to develop the evidence base we need to inform more effective scaling strategies. It's very difficult to know which initiatives have gone to scale or not—this information isn't collected in a systematic or rigorous way."

This is particularly true after programs have 'ended'—few NGOs routinely review whether a scheme is still working years after their intervention has ended, or whether it has been abandoned.

Dr. Pienkowski concludes, "For those calling for conservation scaling, this is a valuable moment to pause and reflect: with these examples and these lessons, what do we need to change? If we do this, we're more likely to be able to deliver impact at scale and finally bend the curve on biodiversity loss."

More information: Five lessons for avoiding failure when scaling in conservation. *Nature Ecology & Evolution*. doi.org/10.1038/s41559-024-02507-4

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