



UN-DESA Division for Sustainable Development Goals

Sustainable Development Goal 15: Progress and Prospects

*An expert group meeting in preparation for HLPF 2018:
Transformation towards sustainable and resilient societies*

14-15 May 2018

United Nations Headquarters, New York
Conference Room 9

Outcome: Key Messages

Executive summary

SDG 15: state of implementation

- Progress toward this goal is mixed. At the global level, there is progress along indicators related to *actions* (e.g. numbers of protected areas), but indicators related to *status* (e.g. IUCN Red List numbers and state of species) are still negative.
- The monitoring framework also does not capture essential elements related to *quality* that are crucial for more meaningful results, pointing to the need for additional indicators in areas such as forest intactness, management effectiveness of protected areas, and meaningful integration of biodiversity into other processes.
- The need for action is urgent, and the year 2020 represents a unique watershed moment: if an effective post-2020 global framework for biodiversity—a more ambitious, unambiguous, unified and politically relevant response to halting and starting to reverse the loss of nature by 2030—can be developed in the next two years, the CBD COP 15 in 2020 presents an opportunity to adopt this framework and to incorporate it within the 2030 Agenda.

The way forward

Integration

- A new narrative is necessary to demonstrate that the tools and solutions for achieving SDG 15 are also essential for goals related to climate change, water, food security, gender equality, and leaving no one behind, and to secure the wholehearted engagement of all relevant actors.
- Concurrently, it is important to articulate the risks and costs of inaction, and accommodate the need to mitigate impacts from business-as-usual developments in sectors such as agriculture, infrastructure, mining, urbanization, and energy.
- This can help secure a more holistic approach to implementation, integrating SDG 15 across a range of goals and targets through various approaches such as valuation and risk assessments, using a range of different methodologies.



- Such methods must also stimulate the removal and reform of harmful subsidies and other economic instruments, and provide guidance towards more effective regulation, taxation and pricing.
- Numerous promising approaches have been proven to work in various contexts, and can be adapted and expanded. These include watershed and landscape-based approaches, legal and inclusive value chains, land degradation neutrality, REDD+, and strategic environmental assessments, to name a few.
- Other levers of change must also be engaged, including combatting corruption, promoting transparency and developing more effective law enforcement both within and across borders, especially in relation to poaching and trafficking.

Partnerships – across levels and stakeholders

- Non-state actors play a critical role: appropriate private sector investment and transforming consumer behavior can both be pivotal. Several examples of effective multi-stakeholder collaborations (e.g. the Mountain Partnership) are available for emulation, replication and scaling up.
- At the local level, approaches that secure rights, address land tenure issues, engage local communities, draw upon traditional knowledge and promote the inclusion of women and indigenous populations are essential for making progress among those who are closest to the natural systems that embed SDG 15.

Accelerators of progress

- Capacity building to support implementation is also critical. For example, national statistical agencies have more experience with socio-economic measurements than environmental agencies; Ministries of Environment and Biodiversity are often unable to participate effectively in cross-sectoral dialogue.
- Targeted financing, including support through ODA; addressing data gaps; and harnessing modern technologies and scientific knowledge have emerged as other crucial, across-the-board accelerators of progress.
- Several examples of national-level work addressing the illegal wildlife trade, forests, arid lands, and mountains presented by experts from Namibia, Bolivia, Burkina Faso, Madagascar, Kenya, Rwanda, Papua New Guinea, Cameroon and others offer vital lessons we can draw upon, scale-up, and scale-out.

Session 1: Where are we?

- SDG 15 is sometimes perceived as a primarily environmental goal, but it is also a key enabler of many other SDGs. Ecosystem services provide critical life-support functions.
- There is much variation across countries and regions towards progress on the indicators at all spatial levels.
- All targets have an important, complimentary and unique role. There is no redundancy across them. It is important to highlight synergies and the importance of ameliorating the trade-offs between SDG 15 and other SDGs.
- Indicators related to *actions* (e.g. numbers of protected areas) for implementing SDG 15 are encouraging, but those related to *status* are still negative (e.g. IUCN Red List status of species).



- Overall, the state of nature and “life on land” continues to decline at a dangerous rate, despite some positive signs.
- Forest degradation is a key issue—at the global level deforestation rates are going down, but degradation rates are going up. Degradation is a hidden problem, partly because it is difficult to measure. Conserving forest intactness is key.
- Capacity building to support the implementation of SDG 15 is critical. Ministries of Environment and Biodiversity are usually the smallest ones; institutions to support these at the national level need to be strengthened.
- The biggest constraints to achieving SDG 15 are the lack of political profile and cohesive action, and the fragmented nature of efforts to stabilize the loss of nature and life and land. It is important to escalate the political relevance of SDG 15 and more clearly articulate the risks and costs of inaction.
- The years up to 2020 provide a unique opportunity to develop an ambitious, unambiguous, more unified, and politically relevant, response towards halting and starting to reverse the loss of nature by 2030.
- To bring attention to SDG 15, we need to ensure that tools and solutions to achieving SDG 15 are also shown to achieve other SDGs—such as those related to gender equality, water, and climate change. The interlinkages among water, forests, soils and climate change are especially important. Environmental SDGs and socio-economic SDGs are equally important and interconnected.
- The role of women—in particular rural women—must be recognized and taken into account in all efforts to achieve SDG 15.
- It is important to build on the momentum generated by non-State actors.
- The increase of protected areas is not ecologically representative. Many protected areas are also not managed well; we need an indicator of effective management of protected areas, in addition to their area.
- National statistical agencies have experience measuring socio-economic issues, but less on environmental measurements; the experience of the environmental conventions can help to support them.
- The success of the biodiversity-related targets requires mitigating impacts from other sectors such as agriculture, urbanization, infrastructure, mining, and energy development. Biodiversity must be mainstreamed across these sectors, and spatial planning integrated accordingly. This includes ensuring no further land degradation, and identifying degraded land areas suitable for restoration. To achieve such integrated spatial planning, countries should establish institutions at the national level that have authority to work across sectors and to integrate SDG15 targets across other national priorities in a spatially explicit manner.

Session 2: Forests

Forests as a critical foundation for SDGs

- Forests are crucial for food, water, wood, energy, biodiversity, health and climate change.
- The SDGs can only be achieved if forests are sustainably managed and forest landscapes are restored.
- It is crucial to maintain sufficient, productive, diverse, intact and healthy forests to achieve SDG 15 and all other SDGs, as forests provide a foundation for economic wellbeing, social inclusion and environmental sustainability.
- A significant body of scientific knowledge shows how the sustainable management of all types of forests and trees make significant contributions towards achieving SDGs, particularly on food



security and nutrition, clean water and sanitation, sustaining terrestrial ecosystems and biodiversity, and improving the quality of life for urban populations.

Urgent call for application and upscaling of best practices

- Achieving SDG15, especially halting deforestation and restoring degraded forest by 2020 (SDG 15.2) requires urgent action now.
- Tools and best practices from countries are available, but their application must be upscaled and progress accelerated. For instance, legal, inclusive and sustainable value chains in agriculture and forestry that prevent deforestation and degradation should be promoted and upscaled, by facilitating investment and providing positive incentives to companies and small producers.

Need for further synergies and partnership

- Fragmentation in global forest governance remains a challenge.
- Enhanced synergies are needed across and beyond the UN system, and policy coherence at country level is key.
- At the same time, it is essential to strengthen stakeholder engagement in forest landscape management, ensuring secure land and resources.
- In this context, civil society—particularly youth—can act as agents of change for realizing the full value of forests.

Need for a long-term framework to sustainably manage forests

- Progress in implementing the UN Strategic Plan for Forests 2017-2030 (UNSPF) and achieving its Global Forest Goals and targets is an effective means to accelerate achievement of the SDGs.
- The UNSPF provides an overall framework to implement sustainable forest management and guides actions and partnerships at all levels across stakeholders.

Session 3: Biodiversity

- Biodiversity trends in general are not positive; however, it is important to highlight successes, including evidence of decoupling of economic growth and environmental degradation.
- It is critical to focus on intactness of forests, in addition to forest cover.
- It is important to consider post-2020 global framework on biodiversity that will be adopted at the CBD COP15, and to ensure it is taken up in the 2030 Agenda.
- Both scientific and political considerations will be relevant to future targets. Ideally, it will be possible to disaggregate the goals so the private sector, local communities and other stakeholder groups—along with Governments—can assess what their contribution could and should be to achieving them.
- Certain areas should be explored further, including Natural Capital and community-based management.
- We need to mainstream biodiversity in all sectors and across sectors, with all sectors including biodiversity targets, and need to transform these sectors to better consider biodiversity in economic, social and development terms.
- We need to take a holistic approach to implementation—not one SDG at a time, one issue at a time—and be mindful of both synergies and potential trade-offs. Policies to better assess these approaches (e.g., strategic environment assessment) should be explored.
- Non-market values of biodiversity need to be highlighted, and affect policy choices.
- Additional indicators for SDG 15 are needed, including for SDG target 15.1, to assess management effectiveness of protected areas, and for 15.9 to assess integration of biodiversity into other processes.



- Biodiversity should be discussed in the context of many other SDGs—not only SDG 15—to promote an integrated approach.
- Women’s roles are often invisible in biodiversity; gender-disaggregated data are needed to highlight women’s roles and identify interlinkages.

Session 4: Holistic and integrated approaches to achieving SDG 15

- Conserving natural ecosystems is critical to mitigating climate change, with wetlands and forests being especially important.
- Holistic and integrated approaches need to be gender-responsive to achieve sustainability, taking into account the needs and rights of rural and indigenous women. An approach with Free, Prior and Informed Consent of indigenous peoples will guarantee their participation at all levels.
- A value chain development approach takes human needs into account, investing in capacity building and providing adequate financial resources to small-scale producers and their organizations, including rural women, and promoting sustainable agricultural production.
- The landscape approach has potential to achieving sustainability at scale.
- Multi-stakeholder dialogues and other participatory mechanisms that bring all stakeholders to the table can be part of the landscape approach, and are very effective in building trust and consensus, addressing challenges, resolving conflicts and achieving equitable resources management.
- The REDD+ process has been successful in bringing indigenous peoples and others from the community around the table because it mandated that Governments should bring them into the process.
- Other examples of effective and integrated approaches to SDG 15 include Land Degradation Neutrality, “The Economics of Ecosystems and Biodiversity” (TEEB) for Agriculture and Food Initiative, the Bridge Collaborative, the Planetary Health Alliance, and the One Health Initiative.
- Current approaches designed to capture the true value of nature (e.g. valuation of ecosystem services, natural capital accounting) could be better integrated into planning and decision-making processes at national and cross-national levels.
- It is important to go beyond market valuation; non-market values must be more accurately measured.
- Systems thinking should replace silo approaches, allowing for better understanding of how the components of a system are interconnected with one another and identifying the drivers or changes.
- The SEEA-Ecosystem Accounts moves away from silo thinking and toward integration, addressing institutional arrangements with integrated policies.

Measures to achieve a more holistic accounting of the value of nature and its ecosystems

- Break down silos within Governments, at national-level ministries and at the local level
- Enact Government cross-sectoral coordination and support for reform processes, to create an enabling environment for sustainable management of natural resources and business development
- Combat corruption, promote transparency and develop effective law enforcement mechanisms
- Provide more support at the national level for inventories and national reporting
- Understand the relation between ecosystems and local communities, especially the culture that governs traditional management practices of, and rights to, forests and land
- Address land tenure issues and secure the rights of rural women and indigenous peoples
- Improve the quality and up-scaling of small-scale producers’ initiatives and organizations that have proven to be effective in sustaining community livelihoods and natural resources management



- Involve local communities in decision making for biodiversity conservation and strengthen the role of civil society organizations
 - Promote transboundary regional cooperation, particularly with wetlands and water-related ecosystems
- Change the narrative to capture a more holistic way of thinking***
- Develop a cultural narrative for transformative change in how we think about ecosystems
 - Integrate MEA targets into SDG planning
 - Develop and regularly utilize participatory mechanisms that bring all stakeholders to the table
 - Recognize the ability of communities to develop their own valuation systems and integrate these into larger systems thinking—traditional knowledge systems are sometimes valued more highly than scientific knowledge by many indigenous and local communities
 - Internalize the value of nature’s contributions to people within development programs through application of natural capital accounting
 - Examine the nature of what we call “integration” and integrate biodiversity conservation into key development sectors
 - Value and acknowledge regulating services
 - Exercise caution when using, transferring and generalizing economic values
 - Evaluate the success of value-based versus risk-based approaches

Session 5: Custodians of terrestrial ecosystems

- The role of indigenous peoples and local communities as custodians of terrestrial ecosystems and their essential contribution to sustainable development, as rights holders and agents of their own development, should be recognized.
- Tenure rights of indigenous peoples and local communities (including family farmers, pastoralists, primary and small-scale producers, foresters, fisherfolk) should be secured, with clarity of ownership, management and sustainable use rights, and gender equality.
- Custodians of terrestrial ecosystems should be empowered to contribute to and lead the implementation of the SDGs at the local level to achieve progress across the 2030 Agenda by, for example: promoting legal pluralism and rights-based approaches, community-based approaches to land restoration and biodiversity conservation, mapping and monitoring, preserving and developing local customs and local food systems.
- The development of sustainable pathways by indigenous peoples and local communities that are adapted to local contexts should be supported, building on traditional knowledge, including through developing capacities, facilitating access to financial resources, services and markets, and ensuring involvement of vulnerable groups, women and youth.
- Focused action is required to support local communities/indigenous peoples in mobilizing actions and initiatives on local SDG15 implementation, including:
 - Investment in natural resource management and land restoration
 - Participatory processes of further clarification and documentation of tenure rights and responsibilities
 - Capacity building in local planning, managing, monitoring and accountability frameworks for inclusive and sustainable local development
 - Adjustment of legal frameworks and capacity building in local economic development



- Mobilizing and enhancing local agro-ecological knowledge and further development of sustainable agriculture and local food systems
- Management of biodiversity and enhancing resilience to climate change

Session 6: Wildlife poaching and trafficking

- Wildlife poaching and trafficking undermine not only biodiversity and ecosystems, but also local livelihoods, wellbeing and security. Trafficking is driven by organized crime, and enabled by corruption and weak governance. It is a cross-cutting issue. Hence, addressing SDG 15.7 also addresses many other SDGs.
- The global framework has been greatly strengthened, including three UN resolutions, further CITES resolutions, targets in the SDGs and, at national levels, certain key countries closing their domestic ivory markets. Hence, countries have the mandate to act, and in many cases are doing so. International donor support to address the issue is about US\$190 million p.a. However, poaching and trafficking still continue on a large scale, and further funding and action are urgently needed.
- At the policy level, still needed is engagement of the UN Convention Against Corruption on the issues of wildlife crime, the engagement of financial and law enforcement institutions to “follow the money”, and further countries to adopt commercial ivory bans. Countries need national strategies and species-specific plans as well as strong legal frameworks and, where necessary, increased penalties for poaching and trafficking.
- Focused actions to prevent poaching at the source are essential, including more protection, effective land use planning to ensure that protected areas encompass vulnerable species populations, that protected areas are managed effectively, and management effectiveness monitored. Achieving this includes the need to build the capacity of relevant agencies. Critical is involvement at all stages of local and indigenous communities to ensure their tenure security and sustainable development, and that human-wildlife conflict is addressed.
- Also needed is action at all points of the trade chain, including at ports and airports, and programmes in key consumer countries to reduce demand for illegal wildlife.
- Involvement of multiple sectors is essential. In addition to wildlife agencies, this includes enforcement agencies such as those charged with addressing corruption and money laundering, police, customs, prosecutors and judges. In the private sector, the transport and tourism sectors are critical players.
- Coordination within and across regions and continents is also critical to ensure effective responses across trade chains from source to consumer; establishment of the International Consortium on Combatting Wildlife Crime (ICWC), a partnership between CITES, INTERPOL, UNODC, the World Bank and the WCO, is a promising development.

Session 7: Mountains

- Mountains have unique attributes, contributions and vulnerabilities.
- Mountains cover 22 percent of the world’s land surface and are home to some 915 million people. Mountain regions provide 60 to 80 percent of the earth’s fresh water upon which humanity depends, and harbor a significant part of global biodiversity.



- Mountain people are being left behind: most mountain people in developing countries live below the poverty line with poor access to services, and well over 300 million highlanders (over one-third of the total) are vulnerable to food insecurity. Further, mountain areas are often forgotten on the fringes of national and international priorities, policies and investment.
- Mountain ecosystems are under threat from climate change, land degradation and natural disasters, with potentially devastating and far-reaching consequences, not just for mountain communities and ecosystems, but also downstream and for the rest of the world.
- Mountain ecosystems need to be sustainably managed to enhance the conservation of mountain resources while ensuring dignified lives and livelihoods for mountain people, especially women and youth.
- Protected areas are important, as well as key biodiversity areas, but fuller landscape and watershed level approaches are needed to secure mountain ecosystem services vital to upstream and downstream communities and economies.
- Context-specific interventions—not a one size fits all approach—that are interdisciplinary, integrated and multi-stakeholder in nature are vital to respond to the specific needs, challenges and realities of distinct mountain regions. These should adopt a human rights-based approach and be designed and implemented in ways that put mountain communities at the center of decision-making.
- Increased awareness raising is needed on the vulnerabilities of mountains and that this impacts not only local people, but also the prospects for accomplishing many of the SDGs.
- Biodiversity and water issues are critical, but other interlinked SDGs need to integrate mountain concerns. It is imperative that global society takes care of its highlands so as not to lose its lowlands.
- Data and information are inadequate on the status of mountains and their populations. Biophysical, socioeconomic, gender and other data need disaggregation and tracking for mountains by national statistical agencies and others to ensure that the challenges the world's highlands face are recognized and monitored locally, nationally and internationally.
- Multi-stakeholder dialogues that include local communities, civil society, governments, scientists, and the private sector, including mining and timber interests whose activities affect mountain ecosystems and their populations, are needed.
- It is not enough for local communities to have a seat at the table in such dialogues: as local custodians and bearers of rights and traditional knowledge for mountain regions, they must be at the center of decision-making processes.
- In many countries, National Committees on Mountains, which are multi-stakeholder bodies, are proving instrumental for planning, developing fair policies and laws, and implementing climate-smart sustainable development
- The Mountain Partnership, a UN voluntary alliance dedicated to improving the lives of mountain peoples and protecting mountain environments, has a key role to play in advancing the mountain agenda at multiple levels through its global reach and multi-stakeholder nature.
- Through a joint Framework for Action adopted in December 2017, Mountain Partnership members committed to implement by 2030 strategies for sustainable mountain development and ecosystem conservation.
- An integrated stakeholder approach is necessary to tailor programmes to community and environmental needs, especially mountain communities and ecosystems that are especially vulnerable to the effects of climate change.

Session 8: Land and soils



- Land and soil underpin many, if not all, SDGs and provide an opportunity to mitigate climate change by sequestering atmospheric carbon as soil organic carbon.
- Promotion of sustainable soil and land management practices, such as agro-ecology, helps farmers adapt to the effects of climate change.
- Land degradation is fundamental to alleviating poverty. It should be given global priority, requires solutions tailored to the specific needs and affected regions of developing countries.
- Achieving land degradation neutrality constitutes an accelerator to achieve other SDGs, if full and effective inclusion of all members of society and empowerment of disadvantaged groups is truly ensured.
- Global assessments of land degradation indicate that it is worsening in some regions and is increasingly linked to food insecurity, vulnerability to climate change, poverty, conflicts and forced migrations.
- There is a mismatch between the highest potential soil and where the most vulnerable people live. Any impacts of land degradation on food security will affect mainly the poor, children and women and leave them more vulnerable to climate change.
- As the world's poor are increasingly rural and young, the impacts are likely to persist over several generations.
- Locally driven processes in implementation are key to tailor soil rehabilitation technologies to the needs of food insecure households.
- Economic growth alone will not solve poverty rates among people living in degrading agricultural land, because the income-generating benefits of growth may bypass poor households coping with land degradation, especially in remote locations with limited market access.
- Global and regional assessments of the extent and incidence of poverty among affected rural populations, especially on degrading agricultural land, are needed.
- The climate mitigation potential of soil through enhanced carbon sequestration is large. As such, it is important to raise the awareness of the issue, promote knowledge of implementation tools and policy measures, and finance sustainable soil management practices.
- Increasing soil organic carbon levels is the first step to restore land and increase resistance to erosion, and an indication of progress to land degradation neutrality.
- A current challenge is the absence of global and local level data on soil management.
- It is important to implement programs to promote soil organic carbon through adoption of sustainable organic soil management.
- Secure land tenure will reduce deforestation and land degradation.
- Secure land tenure is a pre-condition to implementation of sustainable soil and land management. Clarifying and securing access to land, especially for disadvantaged groups such as women, indigenous peoples, youth, migrants and pastoralists is crucial to ensure long-term and sustainable implementation and achieve land degradation neutrality.
- Climate change is increasing the scope and duration of droughts, and must be tackled by ensuring preparedness and resilience of affected ecosystems and communities.
- The Land Degradation Neutrality (LDN) Fund is first of its kind, and sets out to prove that sustainable land management can be profitable, thus attracting the private sector and delivering on



multiple fronts; it is important to strengthen the Environmental and Social Safeguards of the LDN Fund to ensure that its investments contribute to a range of SDGs, in particular to SDGs 1, 2 and 5.

- The LDN target-setting programme has a subscription of 120 countries, which constitutes substantial progress, and needs to be operational through transformative and large-scale projects in order for member States to achieve land degradation neutrality.

Session 9: Means of implementation

- The full suite of policy instruments for SDG 15 implementation (regulatory, economic, information and voluntary approaches) need to be scaled-up and made more ambitious.
- To help bridge the financing gap, more attention should be placed on developing financing mechanisms, including economic instruments, that combine sources of funding from national, international, public, and especially private sources.
- Successful projects should be scaled-up (and out) while innovative and ambitious policies, using a combination of regulatory, economic, and information and voluntary approaches, are implemented.
- Programmes and projects benefit from adaptive management to allow aligning to local realities. This requires changes in the way many programmes and projects are currently designed and implemented.
- To close the implementation gap we need to focus more on the “how” rather than just the “what”—we need to outline our response options to the drivers that are already fairly well identified.
- Better, stronger partnerships, finance, technology and capacity building will be key to scaling-up successful initiatives and projects and adapting and replicating what we are already doing well.
- Mainstreaming biodiversity within and across productive sectors is key to achieving the SDGs, and needs to be scaled up.
- As part of these efforts, we need to address the root causes of environmental degradation, including perverse incentives and subsidies for trade, transportation, energy, extractives, forestry, fisheries, and agriculture.
- This can help foster a shift to new ways of production and consumption, and involves a larger transformational shift that goes well beyond SDG 15—including changes in public and private sector decision making, as well as changes among consumers, and in our own behavior.
- We need a “New Deal” for nature, one that also promotes nature-based solutions.
- To enable such a shift, we need to:
 - Promote a new, common and better Biodiversity Narrative
 - Engage with a broad group of stakeholders, including development economists
 - Increase the use of new tools for communication and information sharing, e.g. satellite and geo-spatial data and mapping
 - Implement a clear, transparent way of reporting and tracking our progress
 - Invest more in data, indicators and science to inform policy options, resolve bottlenecks and respond to trade-offs
- We need to recommit our energies to promote, implement and institutionalize SEEA: the System of Environmental-Economic Accounting.
- BIOFIN, the Biodiversity Finance Initiative, and similar programmes are key to identifying and helping close national funding gaps.
- OECD work on BLUE (biodiversity, land use and ecosystems) identifies key priorities for action to include: scaling up biodiversity policies; mainstreaming across sectors; reforming environmentally



harmful subsidies; scaling up private sector action; and investing in data, indicators as well as better monitoring and evaluation.

- We know that integrated approaches are key including spatial planning—this means doing the right things in the right places with better prioritizing, sequencing, and scaling up.
- The need for emerging and natural technologies also cuts across our efforts; for example, pilot city initiatives in China that are being built as “sponges” for flood control, water conservation and water quality, and climate resilience.
- Meaningful stakeholder participation and partnerships are paramount:
 - Community-based Natural Resource Management should be better supported and effectively empowered, with a focus on leaving no one behind
 - Local actors, especially governmental actors and traditional leaders, must be involved from the start, meaning in design phase already, and recognized and empowered as key actors
 - We must do more to respond to the needs and knowledge of women, indigenous peoples, youth, and local communities, especially focusing on land and tenure rights
 - We must endeavor to work with the private sector in their different roles as investors, job creators, polluters, and “cleaner-uppers”—large international companies, domestic SMEs, investors, banks, insurance companies, Chambers of Commerce and Unions.
- The great examples of national-level work addressing the illegal wildlife trade, forests, arid lands, and mountains presented by experts from Namibia, Bolivia, Burkina Faso, Madagascar, Kenya, Rwanda, Papua New Guinea, Cameroon and others offer vital lessons we can draw upon, scale-up, and scale-out.