Governing the Biosphere Economy

Alejandro Litovsky

In 1492 Christopher Columbus landed on what he thought were the shores of India – except he had discovered a new continent. The 'business case' he presented to lure his funders was based on a gross miscalculation of the diameter of the Earth, but this mistake led him and his reluctant investors – among them the court of Isabella I of Castile – to a serendipitous success.

Guest editor for this *Alliance* special feature

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In 2010, the planet has shrunk dramatically. In just 500 years, we have moved from a world of few people, uncertainty about the proportions of the planet and virtually unlimited resources to a world of strained ecological limits, population pressures and climate change induced by growth models that date back to the Industrial Revolution.

But astonishing new insights are emerging from cutting-edge science. In 2009, the Stockholm Resilience Centre identified ten 'planetary boundaries' that make up the safe operating space for humanity (with climate change being just one), showing that we have already crossed the stability threshold for two of them – the loss of biodiversity and the concentration of nitrogen and phosphorous in the Earth's cycles.[1] The poor will be hit first and hardest, as the tipping points in ecological stability affect the production of food and energy and the availability of water and land, and reinforce extreme temperatures and weather events.

We are only beginning to understand the critical interdependence between the economy, the biosphere and human security. Take the Amazon rainforest, which pumps 8 trillion tonnes of water a year into the atmosphere, regulating rainfall from South America to Tibet. Deforestation in the Amazon will generate acute water shortages in Brazil (to take one example), whose energy supply is 70 per cent dependent on hydropower. But little of this has made it to the central debate on deforestation and sustainability in the Amazon. Why not?

Governing for the long term

Even with the stark evidence before us, as was the case in Copenhagen's COP15 summit, it is unclear whether governments, investors and businesses can act at the speed that is required. This 'governance gap' is not new: 2,300 years ago, in ancient Greece, Aristotle was already picking up that 'what is common to the greatest number gets the least amount of care'.[2]

People acting independently of one another have an incentive to deplete common resources even if it is crystal clear that the outcome is in no one's long-term interest. From fisheries to aquifers and forests, today this so-called 'tragedy of the commons' is being played out on a planetary scale. Our political systems, modelled on the ancient Greek idea of governance, remain poorly equipped to deal effectively with the management of our long-term interest.

Open a parenthesis. Zoom into a different region: East Africa. In Tanzania over 90 per cent of the population today depends on burning wood charcoal for cooking. The rural poor produce it as a source of income by cutting down the forest. Overall this market claims more than 300 hectares of forest a day, and is worth over $650 million a year. Kenya has already lost over 80 per cent of its original forest cover. The reduction in rainfall and the loss of natural temperature and humidity control mechanisms continue to have substantial financial and development costs for its population.

Entrepreneurial solutions in Tanzania, such as Joint Environmental Techniques, have proved that charcoal briquettes can be easily made from agricultural waste, providing jobs and avoiding deforestation (www.arti-africa.org/charcoal.html). But the market

infrastructure is lacking in comparison to that for wood charcoal, which has well-wired distribution channels and the patronage of local politicians. Thinking in terms of infrastructure is key to system change.

Close parenthesis. Enter Elinor Ostrom, who in 2009 was the first woman to receive the Nobel Prize for Economics for showing that it is possible for groups that use common resources to successfully manage them – without government regulation or privatization.[3] Among the requirements is the formal recognition by governments of the authority of self-organizing communities, and the creation of clear rules and accountability among the users involved. These experiments in governance illustrate the necessity of mainstreaming new forms of collaboration to manage long-term issues.

From experiments to system change

Many of the contributors to this *Alliance* special feature highlight the limitations of thinking 'incrementally' about social change. They see a need for social investors to move beyond growing organizations or replicating programmes to tackle the fundamentals of systems: the governance of institutions, markets and economies.

Just as the French Revolution laid the basis for new ways of organizing individual rights and freedoms, our century will be defined by experiments to reboot economic governance, so that issues like transparency, sustainability of the biosphere and equity become central aspects of business- and politics-as-usual.

The funding community is picking up the signal, too. Volans and *Alliance* conducted a survey among members of the European Foundation Centre, the European Venture Philanthropy Association, the Council on Foundations and the PRI Makers Network in the US. Of over 70 foundations that participated in the survey, 90 per cent said that creating a large-scale impact through their work is important in their investment strategies. More importantly, 70 per cent think that the issue of scale will become more important for their foundations in the next five years.

Humans have already, knowingly or not, borrowed the Fibonacci sequence for designing physical infrastructures, like spiral staircases. A question we explored in this issue is whether we can also learn from nature about how to create other types of infrastructure – social, political and economic – which can be best fitted to the governance of our long-term interests.

If these issues are already, at least to some extent, on the radar screens of social investors and foundations, what type of agenda will be relevant to their strategies and programmes in the next five to ten years?

An orderly revolution

In 1202 Leonardo of Pisa introduced the 'Fibonacci sequence' to western mathematics. This is a sequence of numbers which form a spiral shape, and whose proportions, it was then found, underpinned the design of a surprising number of natural forms: the curve of waves, the shape of some shells (see the magazine's cover), the coiling of plant offshoots, the shape of spiralling galaxies, and even the proportions of the human skeleton, among others.

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In this issue, Geoffrey West, a theoretical physicist and Distinguished Professor at the Santa Fe Institute, shares his insight on universal scaling laws in physics and biology, and how these are being applied to social organizations. In his work, he has found a constant equation in how most living organisms develop and scale. This is because all living organisms share a 'universal property of networks': the infrastructures that distribute nutrients and energy throughout their systems, and which enable phenomenal economies of scale.

Following this cue, other contributors to this issue of *Alliance* present a view of how new relationships, partnerships and networks can move particular solutions closer to a system-level intervention. Looking across the articles, the contributions can be organized into three broad themes, where investments in 'infrastructures for scale' are of critical importance.

1 Social infrastructures

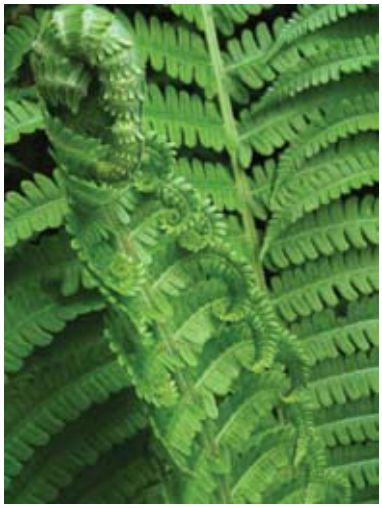
For a foundation or social investor, a social movement can look chaotic, unpredictable and prone to political risk. The experience of the AVINA Foundation in supporting Brazil's National Movement of Street Waste Pickers, as well as the insights from South Africa's Informal Settlement Network, provide compelling stories about the importance of building social networks where people self-organize to address problems and opportunities arising from issues like waste and housing.

Social movements provide one of the most powerful bases through which social investors and governments can invest in creating social capital.

The contributions by Oscar Fergutz of AVINA and Benjamin Bradlow of the Informal Settlement Network show that funders can act as brokers who level the playing field for these movements and provide access to other funders, as well as businesses and governments, helping them find opportunities to align their strategies in support of social infrastructures on the ground. Social movements provide one of the most powerful bases through which social investors and governments can invest in creating social capital.

2 Institutional infrastructures

Traditional institutions are failing to provide the space for effective cross-sector collaboration. The support of the Gates Foundation to partnerships like the Global Alliance for Vaccines and Immunization (GAVI) illustrates some of the new institutional vehicles that are being created to overcome those limitations and support government delivery in new ways. Following from the Gates Foundation's $10 billion commitment to develop and deliver vaccines worldwide, the interview with Jeff Raikes provides further thinking on how to govern these global institutions to avoid creating new global bureaucracies. The interview with Richard Branson, on the other hand, illustrates how Virgin Unite is helping create new and nimble 'global hubs', like the Carbon War Room, to accelerate action by brokering the much-needed collaboration between entrepreneurs, investors, business and governments.



The Fibonacci sequence: scaling codes in nature.

Nancy Kete's article on EMBARQ, the World Resources Institute Center for Sustainable Transport, explains how EMBARQ has helped leverage over $800 million in private investment for sustainable transport, as well as the pioneering role that the Shell Foundation has had in creating the initiative. Today EMBARQ is working in some of the world's most challenging cities, like Istanbul, Delhi and Mexico City, and finding ways to pool political will, technical expertise and investment to address transport problems. But it is also in itself an institutional innovation as a global network that links these cities and their solutions together to create global critical mass.

3 Market infrastructures

The phenomenal success of Skype created a welcome disruption of the mainstream market for long-distance calls, which is resulting in lower prices by larger telecom companies. Niklas Zennström, co-founder of Skype, reflects on how he is using the lessons learned from this success to inform the strategy of his social investment fund. Through his work he seeks to pull 'market levers' that can bring about larger changes in the economy. One example is his efforts to attract pension funds to invest in low-carbon innovation.

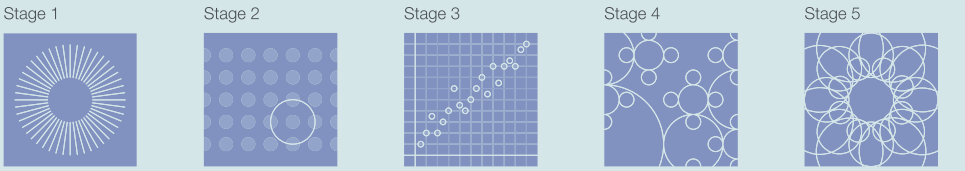
Iqbal Quadir, founder of Grameenphone in Bangladesh, talks about the market infrastructures needed to unleash innovation and how his work at the MIT Legatum Center aims to contribute to that. Anthony Bugg-Levine of the Rockefeller Foundation (whose interview with *Alliance*, published in May at www.alliancemagazine.org, previewed this special feature) thinks that growing the 'impact investment' community will require a market infrastructure similar to that in the venture capital market, which can redirect capital flows on a larger scale. Market infrastructures on the ground are also critical, and the articles about VisionSpring's experience in Bangladesh and Femina HIP's in Tanzania both demonstrate the importance of leveraging networks, such as distribution partnerships, to create momentum to scale good business model ideas.

Pathways to Scale

At Volans, we are exploring these questions further, framed with a simple five-stage model of change. Stages 1, 2 and 3 cover the 'Eureka!' moment for ideas and solutions; the early 'Experiments' and prototypes that follow; and the 'Enterprises' that are built – and invested in – as a result.

Stage 4 looks beyond single enterprises to the building of 'Ecosystems', where creative partnerships and alliances assemble new infrastructures for scale that can rewire the governance of markets and institutions,

The Pathways to Scale five-stage model



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building momentum for system change in Stage 5, the 'Economy'.

An important element of this agenda is the creation and dissemination of new blueprints for collaborative action, which signal opportunities for business, investors, governments and entrepreneurs to work together to assemble the social, market and institutional 'infrastructures for scale' that are needed.

One of the projects in which we are pursuing this is 'The Biosphere Economy', with the support of the Tellus Mater Foundation. Here we explore the market revolution ignited by the global ecological overshoot, and how business, investors and governments can work with innovators and entrepreneurs to change the way they view and manage natural capital (www.biosphereeconomy.com).

The project is working with particular innovators and their stakeholders, from Tanzania to Brazil. One example is Mathis Wackernagel of the Global Footprint Network (www.footprintnetwork.org), with whom we are exploring how their ideas might be taken up and furthered by governments around the world.

As part of this agenda, I was recently involved in designing and helping to lead an international 'learning journey' to the Ecuadorean Amazon, in partnership with the Tällberg Foundation and AVINA Foundation. The trip brought together an international group of scientists, entrepreneurs, business leaders and government stakeholders to explore how solutions to deforestation – from new satellite monitoring initiatives to regional networks of eco-journalists – can make a dent in the markets and institutions that govern the Amazon.[4] The challenges and the opportunities to help these solutions change the governance of the Amazon speak directly to the relevance of the different contributions in this issue of *Alliance*.

A new generation of high-impact investors, unafraid of politics, will need to have an appetite and freedom to take bold risks, informed by cutting-edge science, which attempt to redefine the basic rules and patterns that govern our economy.

What's next?

Some of today's changemakers undoubtedly identify with Christopher Columbus's spirit and appetite for risk. Beyond their 'Eureka' moments, their 'Experiments' double-guess and test the shortcuts to success, while their 'Enterprises' open new frontiers, even if it is with imperfect tools and limited resources and market intelligence.[5]

The French Revolution and most of the subsequent revolutionary experiments of the 20th century were violent mobilizations from below, aimed at toppling the elites that governed them. Today, the challenge is to grow more effective forms of governance that can manage markets, institutions and social capital more intelligently.

Some of the solutions to these problems already exist, at least in embryonic form. The collection of articles and interviews in this issue of *Alliance* suggests that in order to take those ideas to scale, a new generation of high-impact investors, unafraid of politics, will need to have an appetite and freedom to take bold risks, informed by cutting-edge science, which attempt to redefine the basic rules and patterns that govern our economy. The good news is that these pioneering investors are already out there, and the revolution might be under way.

1 The 'planetary boundaries' research was published in Johan Rockstrom, Will Steffen, Kevin Noone et al, 'A Safe Operating Space for Humanity', *Nature*, 23 September 2009.

2 Aristotle, *Politics*: Book III.

3 Elinor Ostrom (1990) *Governing the Commons: The Evolution of Institutions for Collective Action*, Cambridge University Press.

4 The 'Amazon Learning Journey' was part of the Tällberg Foundation's Whence & Wither Project: www.tallbergfoundation.org

5 On the logic of the Christopher Columbus discovery, see Umberto Eco (2000) *Serendipity: Language and Lunacy*, Phoenix.