

Reflections

The SoL Journal
on Knowledge, Learning, and Change



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PUBLISHER'S NOTE 12.2



Frank Schneider

In January, the United Nations Secretary-General's High-Level Panel on Global Sustainability issued "a blueprint for sustainable development and low-carbon prosperity." In the report, "Resilient People, Resilient Planet: A Future Worth Choosing," the panel suggests

that sustainable development "is not a destination, but a dynamic process of adaptation, learning and action. It is about recognizing, understanding and acting on interconnections – above all those between the economy, society and the natural environment."

In choosing to devote this issue of *Reflections* to environmental and social sustainability, we hope to expand our understanding of the growing global crisis and to re-energize our commitment to being part of the process described above. These articles from around the world are inspiring examples of our ability to achieve individual, collective, and systemic well-being in challenging circumstances.

In the opening essay, Paul Gilding sees two options for our collective future: we allow global poverty to go untreated – at great peril to us all – or we redistribute the world's resources more equitably. Gilding reminds us that we can't rely on economic growth, because we are already living well beyond the planet's capacity. While he paints a dim picture of what could be, Gilding is confident that we will choose to do the right thing and in so doing experience a much-needed transformation of values.

Linda Booth Sweeny's interview with Riichiro Oda offers an example of what this kind of transformation might look like at the individual level. Once well entrenched in corporate life, Rich decided to pursue his vision of "doing something for the larger system." That "something" came at the cost of financial security, as Rich took a series of career risks to find work with an environmental NGO.

This issue's book excerpt, from *Infinite Vision: How Aravind Became the World's Greatest Business Case for Compassion*, continues on the theme of what one person can do in the face of overwhelming challenge. In 1976, Dr. Govindappa Venkataswamy founded the Aravind Eye Clinic to treat India's poorest populations for eye disease free of charge. Despite the challenges, over the past 35 years, Aravind has become a world-class organization characterized by all the hallmarks of sustainability – financial health, massive scale, continued relevance, and longevity.

Climate change and other factors are making it more difficult for global food and drink companies to meet the rising demand from a growing population. "Think Big. Go Small: The Benefits of Smallholder Sourcing" presents the business case for companies to integrate smallholder farms into their supply chains. This innovative strategy is beginning to accrue social, economic, and business benefits to both parties.

To round out this issue, we include a piece on creative expression as a tool for social change. Sculptor and puppeteer Jay Mead has found that by using objects from the surrounding landscape to create art or designing puppet shows together, people can connect with each other and with the natural resources around them. This positive and joyful experience generates a deep understanding of systems and a sense of hope for our planet's future.

I hope these articles will touch your mind and heart. While our minds help us understand, it is through our hearts that we act – not out of desperation, but aspiration; not out of selfishness or scarcity, but empathy, compassion, and abundance. It is these shared human emotions that promise to sustain our efforts over the long term.

A handwritten signature in black ink, appearing to read "Frank Schneider". The signature is fluid and cursive.

Frank Schneider
Publisher

No, the Poor Will Not Always Be with Us

Paul Gilding

We have long thought that the solution to poverty is economic growth. Despite some improvements over the last 35 years, the overall trend is not positive; 1.4 billion people continue to live in extreme poverty. Compounding the problem is the fact that because we are already running at 140 percent of the planet's capacity, it is impossible to expand the economy to the extent necessary to increase global incomes. In response to this perilous situation, Paul Gilding sees two alternatives: we "let nature take its course," and allow the poor to starve and their countries to collapse, or we spread the resources we have more equitably around the world, not only because it's the right thing to do, but because when confronted with the imminent social and ecological crises, it will be the only viable option.

Working for the Larger System: An Interview with Riichiro Oda

Riichiro Oda and Linda Booth Sweeney

A decade ago, Riichiro (Rich) Oda walked away from a corporate career to pursue his vision of "doing something for the larger system." Since then, he has partnered with others to work on sustainability issues and to expand the application of systems thinking and organizational learning principles within Japanese businesses and NGOs. After the earthquake, tsunami, and nuclear meltdown in Japan in March 2011, Rich supported the disaster relief efforts, where he gained a first-hand look at the dangers of relying on technology rather than working in tandem with natural systems. In this interview with systems educator Linda Booth Sweeney, Rich shares some of the learnings from Japan's response to the 2011 crisis that might serve us well as world citizens facing the uncertainty of large-scale climate change.

The Power of Creative Constraints

Pavithra K. Mehta and Suchitra Shenoy

An almost incomprehensively ambitious vision unsupported by any sort of business plan may sound like a vision doomed to fail. Yet more than 35 years after the first Aravind Eye Clinic was set up in South India, Dr. Govindappa Venkataswamy's mission to eliminate curable blindness in the country is surpassing even the most optimistic expectations. This excerpt from *Infinite Vision: How Aravind Became the World's Greatest Business Case for Compassion* describes how a precisely defined set of creative constraints, including never refusing to provide care, never compromising on quality, and never relying on outside funding for patient services, became the basis for a world-class organization. The story of Aravind's success, characterized by all the hallmarks of sustainability – financial health, massive scale, continued relevance, and longevity – demonstrates that charity and business can indeed be compatible.

Think Big. Go Small: The Benefits of Smallholder Sourcing

David Bright and Don Seville

Food and beverage companies are facing a rapidly changing world. Global demand is growing, yet the planet's ability to meet this demand is threatened by factors such as droughts, land degradation, and water shortages. Integrating smallholder farms into the supply chain is one promising way for companies to potentially increase production while contributing to rural development. At the same time, by sourcing from small-scale producers, companies can improve customer loyalty and enhance their brands. This briefing summarizes the business case for integrating smallholder farms into supply chains, the strategies used, and the advantages that have accrued to both companies and the poorest smallholders. While the challenges to integration are formidable and the risks for all involved are significant, they are far outweighed by the benefits.

EXECUTIVE DIGEST 12.2

**The Art of Sustainability:
Creative Expression as a Tool for
Social Change***Dominic Stucker and Johanna Bozuwa*

Much of the work to date on sustainability has relied on intellectual arguments, reams of compiled data, and complex charts and graphs. These tools are essential for developing an accurate understanding of social and ecological trends, but they often fail to engage people's emotions. Artist Jay Mead uses several different media, including creations made from found objects, shadow

puppet shows, and giant puppetry, to help people connect with nature and tap into their personal visions of a more sustainable future. According to Mead, by stimulating the right side of the brain, this kind of "heartwork" leads to an intuitive understanding of systems and new approaches to entrenched dilemmas. While our current socio-environmental challenges can be daunting, Mead finds that creating art in a group sparks a sense of hope as people concentrate on taking tangible action together.

No, the Poor Will *Not* Always Be with Us

PAUL GILDING

We have long thought that the solution to poverty is economic growth. Despite some improvements over the last 35 years, the overall trend is not positive; 1.4 billion people continue to live in extreme poverty. Compounding the problem is the fact that because we are already running at 140 percent of the planet's capacity, it is impossible to expand the economy to the extent necessary to increase global incomes. In response to this perilous situation, Paul Gilding sees two alternatives: we "let nature take its course," and allow the poor to starve and their countries to collapse, or we spread the resources we have more equitably around the world, not only because it's the right thing to do, but because when confronted with the imminent social and ecological crises, it will be the only viable option.



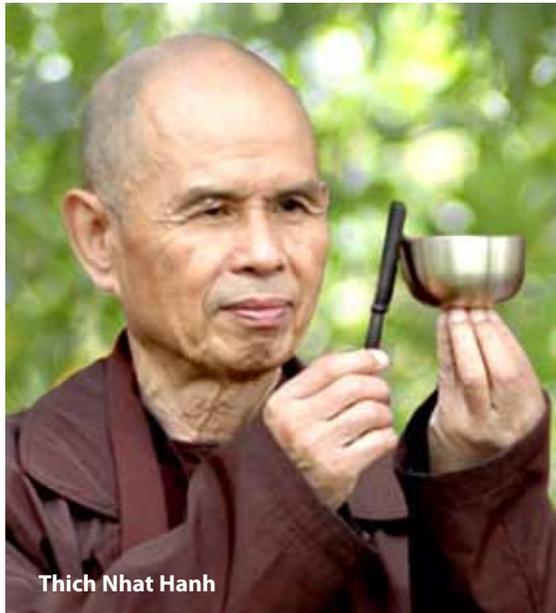
Paul Gilding

I was brought up in the Methodist Church, which has always had a particularly strong focus on social issues and poverty. My grandfather Jasper Gilding was a minister in the church, and he and my grandma Kathleen lived and breathed those values. As a result, they also manifested strongly in our upbringing, through the attitudes and level of community engagement I witnessed in my parents, Wesley and Ruth.

While we weren't a devoutly religious family, we went to church every Sunday, and my parents spent their working lives in jobs engaged with disadvantaged people, from children's homes to homeless shelters to elder care. One of the interesting side benefits, unusual for a family in suburban Adelaide [Australia], was that we often had people staying at our house from far-flung lands, generally visiting students or religious people engaged in social issues. One of these visitors was a Vietnamese monk, Thich Nhat Hanh. Little did I know back in 1965 that he would go on to become one of the world's great Zen masters and peace activists, giving birth to the concept of engaged Buddhism. Nhat Hanh formed a friendship with Martin Luther King Jr., convincing him to publicly oppose the Vietnam War. King nominated Nhat Hanh for the Nobel Peace Prize in 1967.

We can certainly not consider ourselves to be civilized while we accept extreme poverty.

In a rare interview in 2010, Nhat Hanh, now 84, commented on the issues we are discussing here, saying, "The situation the Earth is in today has been created by unmindful production and unmindful consumption. We consume to forget our worries and our anxieties. Tranquilizing ourselves with over-consumption is not the way."



Thich Nhat Hanh

“The situation the Earth is in today has been created by unmindful production and unmindful consumption.”

– Thich Nhat Hanh

Very insightful comments, but back when I was six years old he was just a kind and gentle man wearing funny clothes! We lived in a simple house in the suburbs, and all this was a natural part of our lives. Perhaps as a result of this upbringing and cultural context, I grew up thinking it was ridiculous that society tolerated so many of our people suffering grinding multigenerational poverty. The older I get, the more ridiculous it seems.

There are deep and complex issues involved here that go to the core of who we are and, more important, who we want to be. They are central to the questions we’re covering in this book because as we respond to the coming crisis, our focus is on building a civilized and sustainable society. We can certainly not consider ourselves to be civilized while we accept extreme poverty.

Our solution to poverty has for a long time focused around economic growth. We thought we could

lift people out of poverty simply by increasing the amount of stuff and wealth in the whole system, without having to engage in the difficult question of redistribution of wealth – everyone could have more, so everyone could be happy!

Of course, there has long been a significant social movement calling for us to take stronger action to eliminate poverty and realize our full potential as humanity. Joining millions of people around the world who campaign on such issues have been rock star activists like Bob Geldof and Bono, who have engaged the broad public with excellent campaigns like “Make Poverty History.” But fundamentally, the response has still been premised on economic growth, the idea that everyone could have more.

The logic and morality of this call to end poverty have grown stronger as we have grown richer. Global economic growth has meant that there is now more than enough to go around. We produce more calories, for example, than are needed to sustain the world population. What is true of food is also true of water, energy, and other resources – economic growth has ensured that today we live in a world of plenty where no one need suffer extreme poverty with respect to global capacity – the problems lie elsewhere.

And yet, as we know and to our great shame, 1.4 billion people continue to live in extreme poverty, generally defined as living on less than \$1.25 a day. Free marketers have long argued that economic growth and global markets would sort this out, and that argument was not without merit. Especially in China and India, economic growth has lifted millions out of poverty and created a new global middle class. The income differential between China and the West has decreased substantially, with GDP per capita increasing in China a huge sevenfold between 1978 and 2004.¹ Throughout this period, China has sustained growth rates that are the envy of the developed world.

But along with these success stories, there are significant failures. The UNDP calculated in 2002

that assuming global progress continued at the same pace, it would take 130 years to rid the world of hunger. Progress is also inconsistent among countries. While the West experienced two decades of sustained economic growth in the 1980s and 1990s, only twenty developing countries managed to experience sustained growth over that period. No fewer than forty other developing countries went through at least five years of stagnation or a fall in per capita income.

While some of this economic growth trickled down, a disproportionate amount stayed at the top. In 2000 the top 1 percent of the world's population owned around 40 percent of the world's wealth, with the top 10 percent owning 85 percent. At the other end, the bottom half of the world's

The UNDP calculated that assuming global progress continued at the same pace, it would take 130 years to rid the world of hunger.

people share just 1 percent of the world's wealth among them.² The story on income is no better, with the top 20 percent of people earning 74 percent of it. Despite improvement in some countries, the trends are not all good. Whereas the average African was almost eleven times poorer than the average North American or Australian/New Zealander in 1950, they were over nineteen times poorer by 2000.³ It seems the economic growth

What Is "The Great Disruption"?

In *The Great Disruption: Why the Climate Crisis Will Bring On the End of Shopping and the Birth of a New World* (Bloomsbury Press, 2011), Paul Gilding makes the case for the inevitability of some kind of major economic and ecological crisis on Earth, what he calls "The Great Disruption." As partial evidence of this downward trend, he observes:

The year 2011 saw more extreme weather, with droughts, floods, and wildfires breaking records across the United States, while famine gripped the Horn of Africa. The United Kingdom faced widespread rioting, global stock markets saw unprecedented volatility, and more countries teetered on the edge of debt default. To top it off, food prices hit record highs while Arctic sea-ice volumes hit record lows.

According to Gilding, despite the fact that these economic and environmental extremes indicate that we are bumping up against the limits to growth on our planet, we remain deeply entrenched in our current ways of thinking and acting. We assume that our economy and our lives will continue on as they have in the past until we *choose* to change them. Gilding believes, however, that because we have not responded sooner to these irrefutable signs of upheaval, we will now be *forced* to change in dramatic ways.

And yet, rather than preach a message of doom and gloom, Gilding remains optimistic, which is why he uses the phrase "The Great Disruption" rather than "The Great Collapse" or "The End of the World." Although he believes that our addiction to economic growth will cause us great pain and lead to a mad scramble for diminishing resources, he is confident that, in the long run, we will get through the disruption. He sees on the other side a more sustainable, more equitable society that will adequately meet people's needs while also significantly reducing our reliance on global resources.

over the last 50 years has defied gravity and floated up rather than trickled down as the theory argued it would. This is not just about inequality and fairness, this is often grinding, brutal poverty. According to UNICEF, in 2001, 51 percent of Ethiopian children under five were stunted because of chronic malnutrition. Such stories and statistics can be found around the world.

Unfortunately, even though economic growth has been fostering some admirable improvements, it clearly hasn't been going far enough. When faced with such absolute and despairing poverty in the context of such massive global wealth, waiting another 130 years to eliminate hunger is not a projection to be proud of. Not to mention the questionable morality of the basic idea – that if we let the rich get richer and richer, little amounts of their leftover wealth would trickle down to the poor, bringing them out of extreme poverty. Explain that to an Ethiopian mother with a child stunted from malnutrition.

Of course, I'm just summarizing here the arguments that have been put forward for many decades. The

immorality of poverty, the power of markets and growth to drive change, the need for a fairer distribution of growth, the importance of poor countries having strong economies and open markets, and so on have all attracted significant discussion.

It's time to move on. None of these arguments matter much anymore.

That game is up. As we covered earlier, our current model of economic growth, the one that is bringing some of the poor out of poverty, works to make the rich richer as well. Of course, this isn't a practical problem for the poor if it brings them out of extreme poverty. The problem is that the size of the economy needed to achieve this outcome is not possible. So, for example, if we were to aspire to global incomes at, say, EU levels and have them grow modestly at 2 percent per year, with the poor being brought up to that level over the next forty years, the global economy would have to increase to fifteen times today's size by 2050. Remembering we're currently running at 140 percent of the planet's capacity this is of course an absurd proposition.



Even assuming dramatically less progress on poverty than that, we would still be so far past the physical limits that it would remain impossible. Remember, not difficult or inconvenient or challenging. Impossible.

Understanding this profoundly changes the game in many areas, but perhaps nowhere more so than with respect to poverty and inequality. As well as removing the solution we've been investing our hope in, the end of growth has far-reaching impacts on global geopolitics and national social stability. Perhaps most critical – and affecting every country, not just the poor ones – it smashes the general consensus among the public upon which our economic model relies: that the system will ultimately work for everyone if we give it time.

Economic growth has for a long time been the relief valve on the pressure cooker of global society.⁴ For the poor, whether defined as those in extreme poverty or those at the bottom end of wealthy countries, the hope of one day being lifted from poverty is what often makes the huge differentials in wealth tolerable. Never having experienced growing prosperity themselves, some of the poorest do not cling to this hope. But their leaders and the developing countries' elite certainly do, and their complete geopolitical focus is on lifting their countries and their people out of poverty through economic growth. They see successes in other countries, and they want their turn. With the end of growth, this source of hope and focus disappears. Do we expect the poor to now accept their poverty as permanent, since no more economic wealth can be created?

In a similar way, the mentality that embraces the principle of economic growth allows us to morally justify the poor in the West as well. The Great American Dream, built upon the foundation of economic growth, suggests that anyone who works hard can improve himself and increase his wealth. In this context, many believe the poor are at least to some degree lazy or incompetent. They are poor by their own actions or lack thereof. Accepting the end of economic growth means that this idea, at

best highly debatable, can no longer be argued. If the amount of wealth overall can't increase, you can improve your wealth only by taking away from someone else. The American Dream is dead. The only way to lift the bottom is to drop the top.

Do we expect the poor to now accept their poverty as permanent, since no more economic wealth can be created?

Ouch. Not only do we have to face the end of economic growth, but now we have to discuss the most heretical idea of all: redistribution. We'll come back to this shortly.

So the stability of our system has depended upon a gigantic relief valve, which is now broken. To make matters worse, we can reliably assume the unfolding crisis that is forcing the end of economic growth will not only undermine *reductions* in poverty, it will reverse them and drive the poor back down the scale, because of the severe challenges to water and food supply and an increase in climatic extremes.

With disparity rapidly worsening and the escape route closing, pressure in the system will build up until it explodes, unless we take alternative action.

How can we respond? I see two alternatives. One that is put to me when I present on this topic is that we "let nature take its course," that this process is the system getting back into balance. While people rarely put it to me in these terms, what they mean is we let the poor starve and their countries collapse. Leaving aside the morality of this position, it is inconceivable this could happen without massive disruption globally, including profound and destabilizing global security impacts.

What people don't think through is what that actually looks like. We would not, if we took that choice, have two, three, or four billion poor people

quietly going away to die in a far-flung corner of the world. While we can't know just how it will develop, it doesn't take much to imagine how it might unfold.

A global economic crash combined with widespread food shortages would probably see the desperate slide of nations and regions into chaos.

A global economic crash combined with widespread food shortages would probably see the desperate slide of nations and regions into chaos. We would see failed states with nuclear arms and countless other weapons being taken over by dictators and terrorists. We would see refugees by the hundreds of millions, if not billions. Yes, some would be too weak or ill equipped to travel far, but many would move first as their countries collapsed around them.

This would not be, as we have seen in past crises, a few million people on isolated roads moving into refugee camps. This would be whole countries of people walking into neighboring states, and they would be desperate, starving people with nothing to lose.

So when we think about "nature taking its course," we should consider what that means and how we would respond at the time. What would we do if whole nations started to collapse, and what would the implications be for the global economy? We could not then deliver widespread aid because the conditions would be overwhelming and highly unstable in terms of security. At its most simple and brutal, would we let whole regions collapse into chaos and draw lines on the map we would "defend" – declaring no-go zones of regions of the world? Would our militaries be able to defend these lines if hundreds of millions of starving, desperate people approached them? How would the politics of the countries that hadn't collapsed respond to such human calamity?

In a globalized world there is nowhere to hide, no barricade high enough, and the whole thing would be live on the TV in your lounge room. It is a short journey from this kind of situation to the global collapse we need to avoid at all costs.

This is why, as we discussed earlier, our militaries are looking at these issues very seriously. They see these trends emerging, and they don't intend to wait until then to think them through.

The respected British defense think tank the Royal United Services Institute concluded in a comprehensive review of the subject in 2008: "In the next decades, climate change will drive as significant a change in the strategic security environment as the end of the Cold War. If uncontrolled, climate change will have security implications of similar magnitude to the World Wars, but which will last for centuries."⁵ Take particular note of the last two words – "for centuries."

Another study looking at the relationship between temperatures and civil war in sub-Saharan Africa in recent decades concluded that civil wars there are likely to increase 50 percent by 2030. That level of conflict likely means millions of deaths – and an international impact.⁶ A more complete – and more disturbing – picture is provided in Gwynne Dyer's book *Climate Wars*.⁷ Dyer, a military and international affairs journalist with a good understanding of the science, portrays the collapse of the European Union in the 2030s as northern African refugees overrun southern Europe and southern Europeans flee to the northern states to escape an expanding Sahara. In his scenario, the 2030s also see nuclear war between India and Pakistan over water resources and a completely militarized U.S.–Mexican border as America seeks to keep out massive waves of immigrants.

Of course, this might unfold in many different ways, some far less dramatic than that, but it is certainly not possible to imagine letting "nature take its course" not having profound impacts on the global economy, including developed

countries. The idea that we could pursue a strategy of what Indian ecologist Madhav Gadgil called islands of prosperity within oceans of poverty is a fantasy that would simply not work in practice.

So we need to consider this option carefully before we assume it is a realistic one.

Personally, I would vote against option one. What is option two, you say? I hope it's better than the first choice!

We have to go back to kindergarten. We have to learn to share with our friends. Unlike in kindergarten, however, now we know that having more toys doesn't make us happy, so we can rest easy that sharing won't decrease our happiness.

The math of this situation is clear. Remember where we started this journey. The earth is full. It is not possible for the future to have nine billion people in a growing quantitative economy. We can argue we should have fewer people, but most of the people we are going to have in this situation are either already born or soon will be. Given that we have limited resources and wealth and can't grow either significantly, we have to share. We have to accept that the only way forward that is acceptable to any of us is to spread the resources we have more equally around the world.

Let's be blunt and clear that this is going to involve those of us in rich countries having less – not just less growth, but less than we have now. Less stuff, less money, less capacity to build wealth and consume. How tragic is this? Not very tragic, really, not even sad. In fact, the lesson learned by those who've tried having less, like Colin Beavan and Michelle Conlin of No Impact fame, and John Perry from the Compact, is that having less actually made them happier. Scary thought given how hard we've been working to have more, isn't it.

If you don't like the idea, then you have to be able to look yourself in the mirror and accept that the world's militaries will be taking control of the process that sees option one unfold. These will

be our militaries, our planes, our guns, "defending" us from billions of innocent, starving, desperate people. It will have been our choice, conscious, clear, and premeditated. Sharing doesn't seem so hard, does it?



Given that we have limited resources and wealth and can't grow either significantly, we have to share.

If we are to choose option two, then we must recognize that our current approach of relying on liberalizing markets and unleashing economic growth is not going to work. We can't afford the risk that the situation will spiral out of control as I have described, because it will then be too late to do anything other than survive.

What we can do right now is launch a significant shift in how we treat poverty alleviation and development. We need to unleash a flood of people, funds, technology, and intellect to rapidly address these issues. The sooner we act, the better our chances of preventing the chaos that we will certainly otherwise face when the Great Disruption is in full swing.

Let's take this away from the practical level for a moment and consider it in the largest possible

The sooner we act, the better our chances of preventing the chaos that we will certainly otherwise face when the Great Disruption is in full swing.

context. What kind of world do we want? It is incomprehensible that if we put our minds to it, we couldn't fix poverty. I'm not saying it's simple, but putting all the information in the world into a phone in my shirt pocket wasn't simple either, but we did it. Unpacking the human genome wasn't simple, but we did it. So fixing poverty permanently won't be simple and it won't be quick, but we can certainly do it. We have the resources now to do it, we just have to make the decision.

And how cool would it be if we did? Imagine a world where no one was starving, where everyone had basic health care and education, where we

could look around the world and say: "You know what? We're doing okay."

What we're going to experience is a profound transformation in values, one that will see us address what has for so long been a blight on our civilization. We'll adopt this course not just because it's the right thing to do, but because when confronted with the Great Disruption, it will be the only socially and ecologically viable option available. This doesn't make the values shift any less important or profound – it just makes the fact that it will happen a lot more certain.

This is not an argument for utopian equality, just for the elimination of grinding, soul-destroying poverty. I can't see any justification that explains a society where some have private jets while some die for the want of a bowl of rice or a glass of clean water. It's just not right.

We should stop now, while we still have the chance. ■

ENDNOTES

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ABOUT THE AUTHOR

Paul Gilding is an international thought leader and advocate for sustainability. He has served as head of Greenpeace International, built and led two companies, and advised both Fortune 500 corporations and community-based NGOs. His website is www.paulgilding.com.

Working for the Larger System: An Interview with Riichiro Oda

RIICHIRO ODA AND LINDA BOOTH SWEENEY

A decade ago, Riichiro (Rich) Oda walked away from a corporate career to pursue his vision of “doing something for the larger system.” Since then, he has partnered with others to work on sustainability issues and to expand the application of systems thinking and organizational learning principles within Japanese businesses and NGOs. After the earthquake, tsunami, and nuclear meltdown in Japan in March 2011, Rich supported the disaster relief efforts, where he gained a first-hand look at the dangers of relying on technology rather than working in tandem with natural systems. In this interview with systems educator Linda Booth Sweeney, Rich shares some of the learnings from Japan’s response to the 2011 crisis that might serve us well as world citizens facing the uncertainty of large-scale climate change.



Riichiro Oda



Linda Booth Sweeney

Linda Booth Sweeney: Let’s start by giving readers a sense of your background. How did you become exposed to the fields of systems thinking and organizational learning? What drew you to working with companies and Japanese government agencies on issues ranging from climate change to corporate social responsibility?

Rich Oda: After working for a small factory for 10 years, I went to the United States for graduate school. I got my MBA and then spent a decade with a multinational corporation. Both in business school and when working on organizational and strategy development for this corporation, I was exposed to some of the principles and techniques of systems thinking. But my real exposure to the heart of systems thinking came in 2000 when I received a chain email from a friend. It started by saying, “More than 6 billion people live in the world today. If this world were shrunk to the size of a village of 100 people, what would it look like?” It went on to describe the world’s basic demographics, such as distribution of wealth, health, education, security, and so on.

Sweeney: Was that email based on the work of Dana Meadows?

Oda: Yes, exactly. I didn’t know that at the time, but I later learned that it was a piece derived from the “State of the Village Report” by Dana Meadows in 1990.

After reading the email, a couple of things struck me. Working for a multinational corporation with a good mission, vision, and strategy, I was pretty much content with what I was doing. But then looking at what was happening in the whole world, I concluded that my scope was not big enough. To be working

State of the Village Report 2005

If the world were a village of only 100 people, there would be:

- 60 Asians
- 14 Africans
- 12 Europeans
- 8 people from Central and South America, Mexico, and the Caribbean
- 5 from the USA and Canada
- 1 person from Australia or New Zealand

The people of the village would have considerable difficulty communicating:

- 14 people would speak Mandarin
- 8 people would speak Hindi/Urdu
- 8 English
- 7 Spanish
- 4 Russian
- 4 Arabic
- This list accounts for less than half the villagers. The others speak (in descending order of frequency) Bengali, Portuguese, Indonesian, Japanese, German, French, and 200 other languages.

In the village there would be:

- 33 Christians
- 22 Moslems
- 15 Hindus
- 14 Nonreligious, Agnostics, or Atheists
- 6 Buddhists
- 10 all other religions

In this 100-person community:

- 80 would live in substandard housing.
- 67 adults live in the village; and half of them would be illiterate.
- 50 would suffer from malnutrition.
- 33 would not have access to clean, safe drinking water.
- 24 people would not have any electricity.

- Of the 76 who do have electricity, most would use it only for light at night.
- In the village would be 42 radios, 24 televisions, 14 telephones, and 7 computers (some villagers own more than one of each).
- 7 people would own an automobile (some of them more than one).
- 5 people would possess 32% of the entire village's wealth, and these would all be from the USA.
- The poorest one-third of the people would receive only 3% of the income of the village.

The following is also something to ponder:

- If you woke up this morning healthy . . . you are more blessed than the million who will not survive this week.
- If you have never experienced the danger of battle, the fear and loneliness of imprisonment, the agony of torture, or the pain of starvation . . . you are better off than 500 million people in the world.
- If you have food in the refrigerator, clothes on your back, a roof overhead, and a place to sleep . . . you are more comfortable than 75% of the people in this world.
- If you have money in the bank, in your wallet, and spare change in a dish someplace . . . you are among the top 8% of the world's wealthy.
- If you can read this, you are more blessed than over two billion people in the world who cannot read at all.

When one considers our world from such a compressed perspective, it becomes both evident and vital that education, acceptance, and compassion are essential for the progress of humankind.

for one company was not enough – I needed to be doing something for the larger system.

The other thing that struck me about the email was that while it showed the big picture, it didn't cast blame on anyone. I realized how lucky I was that I could read, had a job, had something to eat, had a house to live in, and so on. The email didn't make me feel guilty but instead invited me to exercise my free will and do something positive regarding the big picture. I found this possibility very exciting. That was when I decided to leave my corporate job.

In 2002, I became a freelance consultant and wanted to work with NGOs. But making the switch wasn't

easy. I knew of many environmental NGOs but I didn't have a story to tell to help me sell my management skills. Then I received an email newsletter from Lester Brown, the founder of Worldwatch and the Earth Policy Institute, who wrote about a newly founded NGO in Japan, Japan for Sustainability (JFS). I thought, "This must be it." I contacted JFS and offered my help. They needed a lot of volunteer work, and I came to know Junko Eda, who is the head of JFS. Over time, I became more involved in the management side.

Dana Meadows died in 2001, and in her memory, the Balaton Group established the Donella Meadows Fellowship. Junko became one of the first Fellows. Through the Balaton Group, Junko met Dennis

The Balaton Group

The International Network of Resource Information Centers, more commonly known as the [Balaton Group](#), is an international network of researchers and practitioners in fields related to systems and sustainability. Founded in 1982 by Dennis Meadows and Donella Meadows – co-authors of the ground-breaking book *The Limits to Growth* – the Group is a cross-disciplinary, multicultural, and intergenerational meeting point for leaders and thinkers in sustainable development.

Small ad hoc teams of Balaton Group members convene someplace on the planet physically or virtually almost every day of the year. They work together on projects that are often initiated at the annual Balaton Group Meeting or facilitated through the Group's active network. Balaton Group members have consistently advanced the boundaries of research and strategy for sustainable development. Over 30 books, more than a hundred conferences, and uncounted computer models, training programs, planning methods, and educational games have emerged from collaboration among its members. Balaton Group members and processes also support the work of many other organizations, such as the Intergovernmental Panel on Climate Change.

By investing in its members and supporting them in their professional work, the Balaton Group accelerates and deepens the world's general understanding of three factors that are fundamental to sustainable development: a systems orientation, a long-term perspective, and an unshakeable personal commitment to achieving positive change. Equally important, the Balaton Group members strive to be a model of global collaboration, a fundamental requirement for turning "sustainability" from abstract idea into on-the-ground reality.

Membership in the Balaton Group is by invitation only. Since its first meeting, nearly 400 participants from over 40 countries have participated in the group. For further information, please explore the group's [website](#).

Meadows, Alan AtKisson, Gillian Martin-Mehers, and other systems thinkers. She became convinced that we needed systems thinking in Japan. We invited them to Japan to hold a series of workshops on systems thinking and organizational learning while we simultaneously translated their books into Japanese.

After learning about the heart of systems thinking from Dana Meadows, I learned a lot about modeling, shared vision, and dialogue from Dennis Meadows through the workshops we organized and through his guidance as a mentor. So that's how I became exposed to systems thinking and the learning organization.

A Risk Worth Taking

Sweeney: Let me ask you, Rich, about your transition from the corporate world to your work on sustainability. At first, you didn't have a job, and then eventually you worked for a start-up NGO. How did you support yourself financially, and how did you convince your family that this was the right move?

After learning about the heart of systems thinking from Dana Meadows, I learned a lot about modeling, shared vision, and dialogue from Dennis Meadows.

Oda: Well, initially I had a sharp income cut; it went down to a fraction of what I used to earn. When making the transition, I reflected on my family's spending, the amount of income we needed, and the lifestyle we wanted to pursue. My wife and I determined that we could settle with a lower income, just enough to keep going. I also calculated how much time I could forfeit an income in order to study and develop professionally. I figured out that I had about one year, so if I could develop strong enough skills within a year to start earning income, then I would be OK.

Sure, there was a risk, but I had calculated it and deemed it reasonable. I also had the support of my family, so I took it.

Sweeney: Looking back, what would you say about that risk?

Oda: It was a risk worth taking. To change patterns of behavior, we first need to change the structure. The challenge was to change the structures of how I live and work but more importantly of how I think. Dana Meadows's message moved my heart. I then used my head to figure out how to achieve what my heart wanted to do. It worked out very well. It is so liberating not to lead my life the other way around, guided solely by my head!

Organizational Learning in Japan

Sweeney: I think that story will be helpful for a lot of people. How did you become involved with SoL?

Oda: Actually, in 2006, Dennis Meadows recommended that we go to your house for a party where we could meet prominent systems thinkers such as Jay Forrester, Peter Senge, and John Sterman. [laughter] Junko and I met Peter for the first time at your house. We spoke with him about Dana Meadows, about how *The Fifth Discipline* had been received in Japan, and about our work in sustainability. Peter Senge is such an inspirational person that I got interested and decided to help build a SoL community in Japan.

Sweeney: How many people are in this community now?

Oda: We have more than 100 people on our mailing list. People come and go, but roughly 40 members are active at any given time. We have a variety of events and opportunities to meet and have dialogue every month.

Sweeney: How are systems thinking and organizational learning generally received in Japanese companies?

Oda: Right now, they are well received. But in the 1990s, when the first translation of *The Fifth Discipline* was published, they weren't, for a couple of reasons. First, many Japanese companies traditionally had a learning orientation and spirit of teamwork, so people didn't see these as new ideas. Second, the 1990s were a time when growth in Japan started stagnating after the burst of the economic bubble. Many Japanese companies sought an MBA-type approach, seeking to incorporate finance, marketing, and performance-based human resource systems, among others. So they paid more attention to the technical aspects of management than to getting a big picture and creating true learning organizations.

But after taking this approach for a decade, Japanese companies realized that they might be heading in the wrong direction. After 2000, we started seeing more interest in systems thinking and learning organization-type approaches. And then SoL Japan invited Peter Senge to Japan in 2008. I was amazed by how many people were eager to hear him. When we made the announcement about his talk, within 36 hours, the 300 public seats were fully booked, and we had a long waiting list.

In the diffusion of innovation curve defined by Everett Rogers, we're just now shifting from the early adopter stage to the mainstream stage. His theory says that, when one-sixth of the people have adopted a new idea, then the mainstream will quickly start adopting it as well. Until recently, I worked mainly with innovators and early adopters in this field. Since around the time we published the translation of the second edition of *The Fifth Discipline* in June 2011, we have started to see and welcome many mainstreamers to the field of organizational learning.

A Devil's Dilemma

Sweeney: In your work with companies and the Japanese government, what trends have you seen in the level of concern regarding climate and key social issues?

Oda: Right now, the situation is very complex because of last year's earthquake and tsunami. But first let me briefly mention the history of sustainability in Japan.

After the United Nations Conference on Environment and Development in Rio de Janeiro in 1992, some innovative companies saw the importance of environmental management. In 2002, we

Junko Edahiro



Junko Edahiro

In 1993, Junko Edahiro was inspired to work in the environmental arena after her encounter with Lester R. Brown, then-president of the Worldwatch Institute and a renowned thinker and writer on environmental and global issues. She has since translated dozens of books on the environment and sustainability, including *Eco-Economy* by Lester

Brown, *Believing in Cassandra* by Alan AtKisson, and *An Inconvenient Truth* by Al Gore. She has also written dozens of books, including *How to Fix the Earth*, and has delivered hundreds of lectures on sustainability and related topics.

In 2002, along with other collaborators, she founded [Japan for Sustainability \(JFS\)](#), which publishes weekly digests and monthly newsletters that go to more than 7,000 subscribers. Junko is also an initiator of the [Candle Night campaign](#), in which more than 5 million people turn off their lights on the nights of the summer and winter solstices to think about the environment and peace.

Junko is the founder of three companies, all related to sustainability: E's Inc., Eco Networks, Inc., and [Change Agent, Inc.](#) In 2011, she initiated [the Institute of Studies on Happiness, Economy and Society](#). Junko has served on many national government boards and committees on sustainability policy issues. She is a visiting researcher at the University of Tokyo and a senior advisor to the Balaton Group. Junko was chosen as a most successful career woman by *Nikkei Career Women* magazine in 2003 and as one of the "100 Planet Earth Lovers" at the 2005 World Expo.

Aerial view of the Japanese Ground Self-Defense Force and disaster relief crews.



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passed a tipping point, and most major companies and many medium-sized companies started implementing environmental management systems, sustainability reporting, and multistakeholder dialogues. Japan for Sustainability was one of the forces driving this shift. Many companies embraced climate change, waste management, and resource efficiency as their key issues, and then gradually took on other environmental and social issues.

In 2008, Japan hosted the G8 Summit, during which the developed countries decided that we should cut greenhouse gas emissions by at least 50 percent by 2050. Junko was an advisor to then-Prime Minister Yasuo Fukuda, and she strongly urged him to create a vision statement in which Japan would strive to cut 60-80 percent of emissions by 2050. He took that advice. So, 2008 was a highlight for Japan in terms of climate change policy.

The global economic crisis naturally decreased greenhouse gas emissions, and just when economic activities were picking up again, we had a severe earthquake and the Fukushima Daiichi Nuclear

Power Plant accident in 2011. Even now, 160,000 people who were evacuated due to high radiation levels cannot go back their hometowns, and they don't know when and if they can ever return.

After this horrible, tragic accident, we are reconsidering our energy policy. Thirty percent of our electricity in 2010 came from nuclear power, but after the disaster, the nuclear power plants stopped their operations one-by-one for inspection and maintenance. For the plants to restart, the local governments need to give their approval, which is currently a delicate and difficult decision. As of the end of May 2012, no nuclear power plant is operating in Japan.

This turn of events puts climate change policy in a dilemma. In the short term, we need to fill a 30-percent gap in the supply of electricity through energy conservation, renewable energy sources, and fossil fuels. We have made progress in energy conservation. We have only had a slight increase in the use of renewables such as solar and wind power, because the development of this capacity takes time and capital. These two strategies have

not been enough to offset the loss of nuclear power, so we must rely heavily on fossil fuel, which emits a lot of CO₂ and is expensive.

Japan's commitment to a 50-percent reduction in greenhouse gases by 2050 relied on an increase in nuclear power. But the accident shattered the myth of safe nuclear power in this earthquake-prone country (we expect that a plant will experience a large-scale earthquake every 35 years or so). We're in a "devil's dilemma" – caught between the desire to reduce greenhouse gas emissions and the desire to reduce nuclear hazards. We need to reframe this dilemma so that we can both mitigate climate change and reduce nuclear hazards, but this shift in mindset has been difficult so far.

"We Could Have Saved More"

Sweeney: I can see why. Since the earthquake, you and others have focused a lot of your attention on the disaster relief effort. Can you tell us a little about what is happening in that area?

Oda: The earthquake and tsunami on March 11, 2011, affected a large area in eastern Japan, resulting in about 20,000 casualties, 380,000 houses fully or mostly destroyed, more than 22 million tons of debris, and at least 17 trillion yens worth of damage to the economic infrastructure. The tsunami did most of the destruction; it surged 20 to 40 meters over sea level and damaged 500-square kilometers along the Pacific coast. It also triggered three meltdown accidents at the Fukushima Daiichi Nuclear Power Plant. At the peak, almost a half million people stayed in shelters; about a million were displaced from their homes.

Even though many, many public servants and volunteers went to help the affected people, the scale of the relief effort wasn't enough. Roughly speaking, more than a year after the disaster, we have managed to recover or reconstruct only about 20 percent of the overall infrastructure. Debris, radioactive contamination, mental illness, unemployment, and the collapse of communities are still major challenges.

Some local governments worked effectively, while others didn't. The lack of effective coordination between the national and local governments was disastrous. While government officials were debating and discussing, not enough resources were put on the ground for several months. We could have saved much more, but the overall response was very slow.

The communities that did well tended to have good teamwork. They didn't wait for the national government but utilized resources they had on hand and focused on what they could do immediately.

Some local municipalities did well because of shared leadership and solidarity. The communities that did well tended to have good teamwork. They didn't wait for the national government but utilized resources they had on hand and focused on what they could do immediately.

Rebuilding Trust

Sweeney: What was the immediate impact of the earthquake on the food systems and social systems in Japan? Do you have a sense of what the long-term effect might be?

Oda: Three prefectures known for fishing and agricultural production, Miyagi, Iwate, and Fukushima, accounted for 99 percent of the losses. The fishing communities in Miyagi and Iwate lost virtually all the ports and more than 90 percent of the fishing fleet. The supply chain has bottlenecks everywhere, with severe damage to the freezing, processing, and packaging facilities. Near the coastline, 26,000 hectares of cropland were soaked with salt water, and only 40 percent has been recovered. The damage to the agricultural and fishing sectors is estimated to be 1.7 trillion yen.

On top of it all, radioactive substances from the damaged nuclear power plants are still leaking into the ocean and atmosphere. The government found levels of radiation in certain foods that exceeded the standards and has banned those products from distribution.

What complicates the matter is that some consumers tend to categorically reject produce from Fukushima and the surrounding areas even though only certain foods from specific areas pose safety

The good news is that some local leaders stood up, called for solidarity, and worked across traditional boundaries. The long-term prospects for recovery depend on our ability to learn and adapt.

risks. For consumers, it is not just about safety from a scientific point of view but also about trust. We need to rebuild a trustworthy food system, as the government did a poor job of communicating the risk of radiation in the early months of the crisis.

Restoring lost capital, soil, and trust takes time. The affected areas are also home to an aging population, and over the past several decades, fewer people have been drawn to fishing and farming. The crisis could further fuel the collapse of traditional communities in the region.

The good news is that some local leaders stood up, called for solidarity, and worked across traditional boundaries. The long-term prospects for recovery depend on our ability to learn and adapt.

Sources of Resilience

Sweeney: What is the learning opportunity from the country's response to the 2011 crisis that might serve us well as world citizens facing an uncertain future?

Oda: Preserving and restoring resilience is so important in facing crises. Right after the earthquake and tsunami, some communities were in dire need of water, food, and basic hygiene, but they were so remote that help did not arrive for several days. Residents relied on each other and on traditional wisdom to find ways to fill those needs. Some elders remembered where they could get water from wells or mountain springs that had been used long ago. When people needed toilets, they created ones with what they had.

Similar stories exist in industry. Japanese manufacturers are famous for just-in-time (JIT) production systems. Because of the extremely low levels of inventory they carry, when something happens to stop the production of even one supplier, it soon affects the entire supply chain. So, it is natural to think that JIT is not resilient, and certainly after the crisis, the Japanese automotive and other industries reviewed their policies regarding inventory levels and dependence on suppliers.

But what also happened is that when suppliers in Tohoku ceased their operations, virtually all of the companies in the supply chain showed superb levels of solidarity by dispatching people, know-how, production equipment, material, and other resources to restore and restart the suppliers' production lines. We can consider this rapid effort to restore capacity as "meta-resilience."

When we seek to be efficient, we often neglect the importance of communities, diversity, and redundancy. But for the long-term sustainability of systems, we have found that you need both efficiency and resilience.

The other lesson is to learn from the past and listen to ancient wisdom. In Tohoku, over the centuries, large tsunamis have come every 50 years or so, and older residents know how high the water can reach. In some communities, ancestors left markers saying, "Don't build a house below this level." Those who followed this advice had minimal damage from the tsunami. But many other communities installed sea walls and felt safe building



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Pilots fly over the Sendai Airport in Japan to survey the tsunami aftermath.

on low land near the coastline. By doing so, they increased the potential for disaster.

In speaking with local residents, I learned that many recognized that we caused the crisis. Of course, we didn't cause the earthquake or tsunami, but we are certainly responsible for the multiplying impact of the disaster. We had so much confidence in technology that we assumed we were safe and took risks beyond a reasonable level. Building high sea walls may have delayed the arrival of tsunamis but it also reduced the feedback that people received. Where people didn't have artificial breakwaters, they tended to rely more on feedback and to follow intuition.

Blind Faith in "Hardware"

Sweeney: It would be really useful for people to understand how building the breakwaters prevented feedback. You're saying that if certain communities didn't have the breakwaters, they would be more in tune with nature and with working with it and adjusting to it, right?

Oda: Yes. Many towns along the coast created sea walls, often as high as 6 meters, and the city

We had so much confidence in technology that we assumed we were safe and took risks beyond a reasonable level.

of Kamaishi had just completed construction of a breakwater that was recognized by Guinness World Records as the world's deepest. The structures seemed robust, and thus laypeople thought they were safe from high tsunamis. But a few problems persisted. First, the historical data shows that the highest tsunamis exceeded 6 meters, but many government planners considered 6-meter sea walls to be high enough. Second, a large-scale tsunami is not just a few high waves but rather massive walls of water that keep coming at a high speed. With a 7-meter-high tsunami, water can actually reach 20 to 30 meters on land.

People couldn't imagine a high tsunami going over a state-of-the-art breakwater, especially members of younger generations who had not experienced previous tsunamis. They constructed



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houses, schools, train stations, and other structures in low-lying areas. As more buildings went up, people felt even safer and took more risks.

When the tsunami hit, many younger people did not climb high enough into the hills. Some even tried to go back to their homes near the coast after the first tsunami hit, and they were swallowed by the bigger second wave. On the other hand, those who survived, often listening to ancient wisdom, did not assume that the artificial breakwater would prevent inundation from the tsunami. When they heard the tsunami was coming, they climbed into the hills. When their intuition told them that the evacuation areas were not high enough, they kept running up. We don't mean that breakwaters are useless, but in the face of nature, our blind faith in artificial "hardware" can be dangerous. We also need to rely on our "software" and our own good judgment.

This tendency is happening elsewhere in the globe as well. The number of fatal natural disasters has been increasing at an exponential rate over the last century. Dennis Meadows explains the

reasons as increased population, people moving into hazardous areas based on the expectation that development has reduced the risks, and more extreme events caused by climate change.

A Hunger for More Expansive Thinking

Sweeney: Tell us about the organizational change work you're currently doing.

Oda: Junko Eda Hiro and I co-founded Change Agent, Inc., in 2005. We offer workshops on systems thinking and the learning organization, ranging from training programs to strategic planning workshops for government officers and corporate managers. We use organizational development methods, primarily with companies but also with NGOs. We try to expand people's time horizons and the boundaries of their thoughts and imagination. We show them that systems can behave in surprising ways through dynamics such as tipping points and systems resistance, and we teach them important systems principles such as resilience and self-organization. We also help them realize that things are interconnected and that their choices, such as purchasing and invest-

ment, have effects on their environment and vice versa.

Our organizations work extensively in the area of sustainability and corporate social responsibility. We have created several learning communities on climate change, food sustainability, and studies of happiness, economics, and society. We have promoted multi-stakeholder dialogues on climate change, energy, and food issues.

I have also found systems thinking to be useful in my relief work. I helped an NGO conduct a needs assessment of refugees in Miyagi. I heard many people say, “We have eaten nothing but rice for two months; we want vegetables.” But the real issue isn’t getting someone to bring vegetables into the area; it is restoring people’s capacity to fulfill their own needs by rebuilding communities, providing jobs, and so on. Systems thinking helps people to see past the obvious quick fixes to get to the fundamental issue or challenge.

Sweeney: Systems thinking is fundamental to thinking about change. It’s not something that ends up being taught in school or business. I think people and organizations are hungry for that kind of more comprehensive, more integrated, more expansive thinking, especially when they are not in a crisis.

Oda: I agree. During a crisis, people rely on the skills they already have. Thus, expanding our capacity before disasters occur is fundamental for crisis management.

By focusing on and feeding people’s positive aspects, we can achieve our highest aspirations.

Sweeney: Is there any last thing you can tell us about your hope for our ability to adapt to the changes that are coming? That would be a great way to end.

Oda: One lesson I learned from Dana Meadows’s work is that people are capable of rising to a challenge. During the disaster in Japan, despite poor leadership at the top level, poor coordination, and limited human resources, many wonderful people stood up and took action to make a difference. In both my work with change agents and my relief work, I have found that by focusing on and feeding people’s positive aspects, we can achieve our highest aspirations. So despite the many challenges I’ve seen in our relief work and sustainability efforts, I trust and am hopeful in our human potential to achieve great things. ■

RESOURCE

[Junko Edahiro, TEDx Tokyo, The “De” Generation](#)

ABOUT THE AUTHORS

Riichiro (Rich) Oda is the CEO of Change Agent, Inc., and is general manager of Japan for Sustainability. He is on the Global SoL Transition Team and is treasurer of the Balaton Group’s board of directors. Rich is the co-author of several systems thinking guidebooks.

Linda Booth Sweeney is a systems educator and is the author of numerous articles and several books, including *The Systems Thinking Playbook* (co-authored with Dennis Meadows) and *Connected Wisdom: Living Stories about Living Systems*. Linda serves on the Balaton Group’s steering committee.

Janice Molloy provided editorial support for this article.

COMMENTARY 12.2

Commentary

BOB STILGER



Bob Stilger

was having lunch in a Tokyo hotel with the Masami Saionji, leader of Byakko Shinko Kai, a spiritual association that promotes world peace. It was just a month after the triple disasters of earthquake, tsunami, and nuclear meltdown that battered Japan in March 2011. Masami looked at me across the table and spoke with a level of clarity I had only previously heard from the Dalai Lama and said, “*We caused this.*” I immediately understood what she meant. As Rich says in his article, there’s no denying that a natural disaster occurred. There’s also no denying that our hubris and greed opened the way for wide-spread destruction.

Long before there was systems thinking, there was systems *living*. We lived as part of natural systems.

Rich opens his article by describing his first exposure to systems thinking, which came from reading a version of Dana Meadows’s 1990 “State of the Village Report.” What impressed him most was that “it didn’t cast blame on anyone.” I think we need to take that statement a step further. A famous quote, attributed to various sources, states, “If you’re not part of the problem, you can’t be part of the solution.” It’s a waste of time to look for where to assign blame in a crisis. The real question is, what are *we* going to

do now? How will we step in and acknowledge our own part in the problem and begin to be part of the solution? How will we begin to understand our human roles in causing the disaster and discover our human capacity to cause something different to happen now?

Rich’s article provides some of the starting points.

Systems Living

Long before there was systems thinking, there was systems *living*. We lived as part of natural systems. Turn back the clock a few thousand years, and Japan was a land of small villages isolated in valleys and framed by precipitous mountains. The main food was rice cultivated in wet fields, and it took a village to plant and harvest the crop. Humans worked with each other and the surrounding ecosystem, or they died. No big mysteries here. Nature wasn’t an adversary to be controlled; it was something to be listened to and worked with. Death was the only alternative.

Shinto, the belief structure and worldview that lies beneath Japanese culture, is a systemic understanding of the world. Everything is connected. Everything contains the face and the essence of god. Everything must be honored and appreciated. Over the last 60 or so years, this way of seeing and being in the world has been increasingly ignored. Japan, like its modern counterparts in the rest of the planet, has used technology to control nature and act as if using planetary resources to create more and more consumable goods would produce happiness.

Japan lost a world war, and the victors restructured the country to be a more viable economic partner. More linear, “modern” management practices were brought into Japanese business. Unrestrained growth to compete in a growing global economy became the primary objective. Nature could be controlled through a variety of technical interventions. Compartmentalization could enhance productivity. Business, and the world, could be organized and controlled.

But Japan prospered for eons because it stood with nature rather than against it. Rich writes about how, in some villages, the tsunami damage was minimized because people listened to the elders who warned about the long reach of future tsunamis. This wasn’t just an oral tradition; along Japan’s entire coast, one finds stone markers carved with the words *“Do not build below this point; the tsunamis will come again.”* This ancient knowledge of living as part of a system was disregarded as Japan’s so-called modernization continued after the war.

What Happens Now?

The question, of course, is what happens now? How will Japan respond to the triple disasters of March 2011? How might Japan’s way forward provide an example for the rest of the world?

The government is working as fast as it can to rebuild the region. In a crisis, most people just want to get back to the old normal, and that’s what government almost inevitably tries to do. It’s almost impossible for it to do any more than try to rebuild the past. It doesn’t matter that the past wasn’t working so well. Aging population, low birthrate, deteriorating infrastructure, stagnant economies were already problematic in the Tohoku region where the earthquake, tsunami, and nuclear meltdowns occurred. But how does something else get created?

I remember hosting a meeting in Tokyo just a few weeks after the triple disasters. About 50 businesspeople arrived quietly, not sure they were ready to talk with anyone about what happens next. The air was still, tentative, careful. Three hours later, the room was filled with excitement, as a feeling subtly emerged that “we’ve been released from a future we did not want.”

This is the impulse, the yearning present just beneath the surface these days. What does it mean? Rich touches on this in his article as well. People are turning to one another again. They are beginning to have conversations about the things they actually care about. The wisdom of the elders is being sought out and listened to. Equally important, elders are listening to the younger generation as well. Building resilient communities is an intergenerational phenomenon. We can only do it together.

People are stepping outside the notion that someone else will fix things for them. Many no longer believe that they can rely on government to be responsible for their lives. They are using the energy of the crisis to step forward with their ideas and resources and insights – differentiating themselves within the collective rather than standing apart.

People are stepping outside the notion that someone else will fix things for them. They are using the energy of the crisis to step forward with their ideas and resources and insights – differentiating themselves within the collective rather than standing apart.



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This is the force that is currently arising in Japan. People want to think about how to be happy. Perhaps that is what a crisis provokes. It is a big slap in the face, a wakeup call.

Perhaps that is what a crisis provokes. It is a big slap in the face, a wakeup call. When the immediate threat has subsided and at least a temporary respite created, people ask more fundamental questions about the nature of our lives. Joy and grief are close companions, and both are brought to light when disaster strikes.

I don't have a crystal ball. The future looks very uncertain. But the one thing I am willing to predict is that we're going to have more and more disasters and systems that collapse. How will we use these to create a new future? How will we transform our unsustainable practices into more resilient ones? Japan may help us learn some of the answers. ■

Much of what is being proposed won't work in the short run. That's always the way when something new is tried. But if people can stay connected with each other and remember the power of their dreams, another world is possible.

"Learning How to Find Happiness"

I first came to Japan as a student in 1970. The woman who would become my spouse and the mother of our now 25-year-old daughter was also a student. Our personal lives have been enriched by Japan and a vibrant multigenerational relationship with our host family in Kyoto. In those 40 years, I don't think I ever heard people in Japan talk about happiness. Since March 11, it comes up constantly when we draw people together to talk with each other about the future. In fact, in a community workshop I recently hosted in Shikoku, the smallest of the four main islands, one person remarked, "I've never thought about the future very much before, but when I think about it now, I realize that the future is about learning how to find happiness."

This is the force that is currently arising in Japan. People want to think about how to be happy.

ABOUT THE AUTHOR

Bob Stilger, PhD, spent 25 years as the co-founder and executive director of a community development corporation in Spokane, Washington, and then a decade with [The Berkana Institute](#). Bob recently founded [The Transformation Institute](#) to work with ideas for how disaster can be a springboard to create resilient communities.

The Power of Creative Constraints

PAVITHRA K. MEHTA AND SUCHITRA SHENOY

An almost incomprehensibly ambitious vision unsupported by any sort of business plan may sound like a vision doomed to fail. Yet more than 35 years after the first Aravind Eye Clinic was set up in South India, Dr. Govindappa Venkataswamy's mission to eliminate curable blindness in the country is surpassing even the most optimistic expectations. This excerpt from *Infinite Vision: How Aravind Became the World's Greatest Business Case for Compassion* describes how a precisely defined set of creative constraints, including never refusing to provide care, never compromising on quality, and never relying on outside funding for patient services, became the basis for a world-class organization. The story of Aravind's success, characterized by all the hallmarks of sustainability – financial health, massive scale, continued relevance, and longevity – demonstrates that charity and business can indeed be compatible.



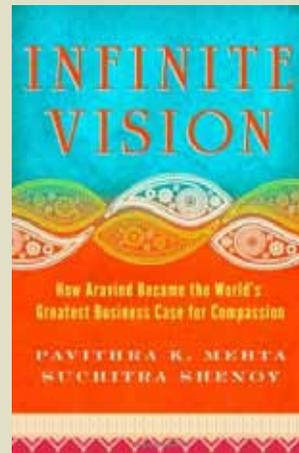
Pavithra K. Mehta

"All meaningful design begins with empathy," says Tim Brown, "and to me, Aravind is a model of what can be achieved through design."¹ Coming from him, this is no small praise. Brown is CEO of IDEO, one of the most influential design firms in the world.



Suchitra Shenoy

In 2005, he visited Aravind on a tour coordinated by Acumen Fund, an organization that uses philanthropic capital for social investments (Acumen had supported Aravind in a tele-medicine initiative). "What I saw in India, and particularly at Aravind, played a big part in how I've moved forward with IDEO," says Brown. How so? "Innovation, in some fundamental way, is linked to constraints," he says, "and Aravind is an organization that operates within a very unique set of self-imposed constraints. That automatically eliminates ordinary solutions."



**Adapted from
*Infinite Wisdom:
How Aravind Became
the World's Greatest
Business Case for
Compassion***

Pavithra K. Mehta and
Suchitra Shenoy
Berrett-Koehler, 2011

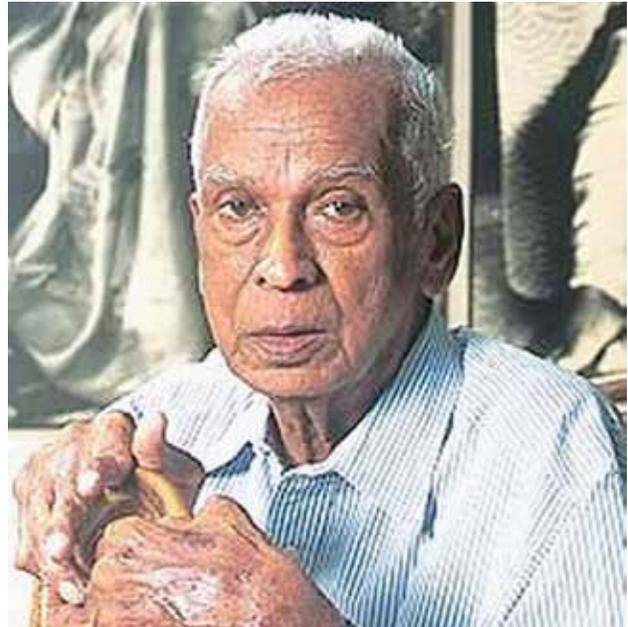
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Brown's argument is compelling: Empathy and self-imposed constraints can force you beyond obvious options. What you then get, he points out, is "the chance of a breakthrough solution instead of an incremental innovation."

The developing world faces constraints of money, skilled labor, and other resources. But Brown is talking about something other than these obvious limitations. “Dr. V brought in his own set of constraints when he insisted on a particular mode of delivering care. He said it had to be high-quality, compassionate care, and that it also had to be affordable and sustainable,” Brown says. He is referring to the unwritten rules that Dr. V decided Aravind would follow:

1. We cannot turn anyone away
2. We cannot compromise on quality
3. We must be self-reliant

In summary, these rules meant that whatever Aravind chose to do, it would have to do it with uncompromising compassion, excellence – and its own resources.



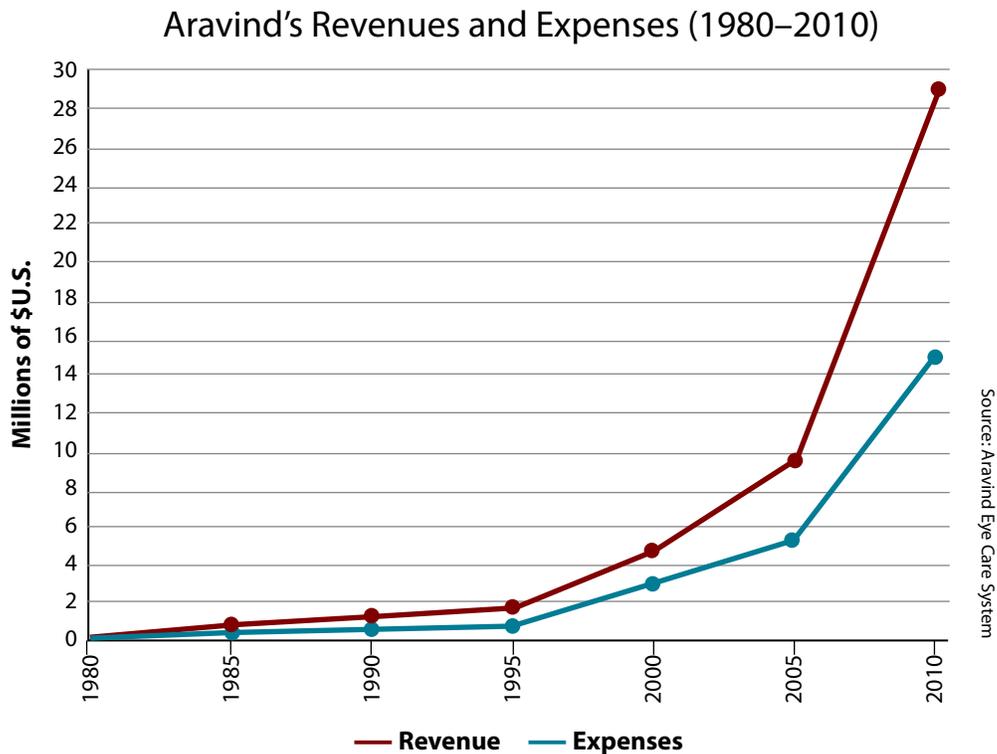
Dr. Govindappa Venkataswamy

The History of the Aravind Eye Care System

In 1976, Dr. Govindappa Venkataswamy, a retired surgeon, founded an eye clinic in South India with his siblings and their spouses. Dr. V, as he became known, didn't have a business plan or money, but he had a mission to eliminate curable blindness. Today, the Aravind Eye Care System is the largest and most productive blindness-prevention organization in the world. During the last 35 years, its six eye hospitals have treated more than 32 million patients and performed more than 4 million surgeries, the majority either ultrasubsidized or free. Even more remarkable, Dr. V has insisted on financial self-reliance, resolving not to depend on government aid, private donations, or foreign funding.

The organization invests tremendous energy in bringing eye care to villagers too poor to seek out its services. Its policies ensure that all patients get the same high standard of care. The same doctors work across both free and paid services. Defying the assumption that high-quality surgery cannot be performed at high volumes, Aravind's doctors are among the most productive in the world, averaging 2,000 cataract surgeries a year, against the United States' average of under 200. The efficiencies that enable this achievement help make Aravind one of the lowest-cost, highest-quality eye care systems in the world.

Dr. V passed away in 2006, but Aravind continues to thrive. Based on his vision, the Aravind model demonstrates the power of integrating innovation with empathy, and business principles with service.



Today, numerous initiatives in India provide free eye care to those in need, and at least a dozen of them offer quality that is world-class. Where Aravind differs dramatically from these other efforts is the magnitude of its work coupled with its astonishing financial self-reliance. No other eye hospital in the world comes close to handling Aravind's routine outpatient and surgical volumes. And no other organization in the field provides its services to the poor at this scale, within such a robustly *self-sufficient* model.



Over the years, Aravind has proved sustainable in multiple ways. It is an organization that has quadrupled its growth every decade, successfully navigated multiple leadership transitions, and consistently upgraded the quality and range of services provided. It demonstrates all the boons of sustainability: financial health, massive scale, continued relevance, and longevity.

Naturally it is Aravind's financial sustainability that attracts the most attention. In 2009–2010, Aravind made an operating surplus of approximately \$13 million on revenues of \$29 million.² A *Forbes* magazine article in 2010 reviewing Aravind's profitability called it "a performance worthy of any commercial venture."³

Oddly enough, financial self-reliance started out low on Dr. V's list of priorities. Certain unpleasant experiences bumped it up very quickly. Dr. V's first application for a bank loan to start Aravind was rejected, and his sole attempt at fund-raising yielded more embarrassment than riches. He had visited a neighboring industrial town to solicit donations, and "he came back with about 1,500 rupees [roughly \$33]," says his brother GS. "He said, 'Because people don't know us, they thought that this was some sort of begging.'" The misconceptions came as a painful shock. It had not crossed Dr. V's mind that people might view his fund-raising efforts as an attempt to secure easy cash for his retirement.

In retrospect, the sting of that experience proved invaluable. It spurred Dr. V to explicitly redefine the role of money in his organization. “We’re not going to ask people for donations anymore,” he announced to his brothers and sisters. “We just have to do the work. The money will follow.” It became one of his most-repeated phrases: Do the work. The money will follow. This serve-and-deserve rule of Dr. V’s forced the organization into an improvised independence and fostered some of its most novel systems.



In the field of international development, money can be a touchy subject. To carry out their core work, many nonprofit organizations rely on external funding from individual donations or grants from foundations. An unspoken assumption that business and charity do not mix often gives rise to a tension between purse strings and heartstrings.

An unspoken assumption that business and charity do not mix often gives rise to a tension between purse strings and heartstrings.

In this context, Aravind manages to hold two seemingly contradictory principles with ease: self-sustainability and universal access to its services. Dr. V seeded these “constraints” in the organization without a preset plan. But the founding team, over time, evolved effective systems for working within them. “In our experience, self-sustainability is a dynamic process, not a static destination,” says Thulsi [Ravilla, executive director of Aravind’s training and consulting division]. “It emerges from a complex interaction of organizational, technical, and human factors.” He maintains that Aravind’s own financial health and independence are by-products

of careful attention to pricing structures, free and paying patient volumes, effective resource utilization, standardization, and an extremely cost-conscious leadership. In other words, at Aravind, self-reliance is more of an ethos than an end goal.



“Zero can be a legitimate price point,” declares Thulsi. This is his succinct response to the to-charge-or-not-to-charge dilemma. Aravind’s pricing strategy goes beyond the traditional notions of free care. It positions free service not as a charitable handout but as one of many options in a self-selecting fee system. Its price range – from zero to market rates – is built around a culture that respects every patient’s right to selection. “Choice is fundamentally important,” says Dr. Aravind Srinivasan, the hospital’s administrator. “We all exercise it when we go to a supermarket and choose what we want from an array of options. Our choices are based on subjective combinations of aspiration and affordability. We believe in empowering our patients with that kind of choice.”

The organization also believes that a pricing model offering free service as one option within a broader range can serve more patients in need than a system that does only charity. Aravind’s consulting work with an eye hospital named Sadguru Netra Chikitsalaya, in the town of Chitrakoot in rural Madhya Pradesh, is a case in point.

Until 2002, the Chitrakoot hospital relied heavily on donor funding and focused exclusively on the very poor. The hospital’s trustees believed that charging patients would corrupt the institution’s charitable focus. Most of its patients paid nothing, and the hospital ran at a loss. But when B. K. Jain, the hospital’s director, visited Aravind, he experienced the power of a different approach.

With Aravind’s assistance, Jain persuaded the Chitrakoot trustees to adopt a tiered pricing system and to broaden its patient base to include wealthier patients.



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They sought Aravind's expertise to put together a detailed plan of action. Along with implementing the new fee structure, they developed the skills to do cataract surgery with intraocular lens implants (replacing a less advanced procedure) and also began running free eye camps in the community. The ripple effect was dramatic. Five years later, for the first time in its existence the Chitrakoot hospital was breaking even. And it was actually making a surplus.⁴

Most significant was the fact that the number of free and highly subsidized patients served annually had increased by as much as 45 percent, and the hospital's cataract surgery volumes had more than doubled.⁵ The profits from paid services made it possible to provide cataract surgery with IOLs for its free patients as well – something it had not been able to do before. In addition, the hospital was able to develop specialty services and retain five times the number of ophthalmologists,

The organization believes that a pricing model offering free service as one option within a broader range can serve more patients in need than a system that does only charity.

drastically reducing its earlier dependence on volunteer medical expertise.

In these ways, the user-fee system at Chitrakoot, far from compromising the mission, proved a tremendous tool for reliably reaching more people in need. It also enabled significant upgrades to services and overall program strength. To Aravind's leadership, financial

Most of Aravind’s paying patients have no idea that by choosing to pay for services, they are indirectly contributing to someone else’s care.

autonomy is important not in and of itself, but precisely because it allows for this greater command over the many dimensions of quality.

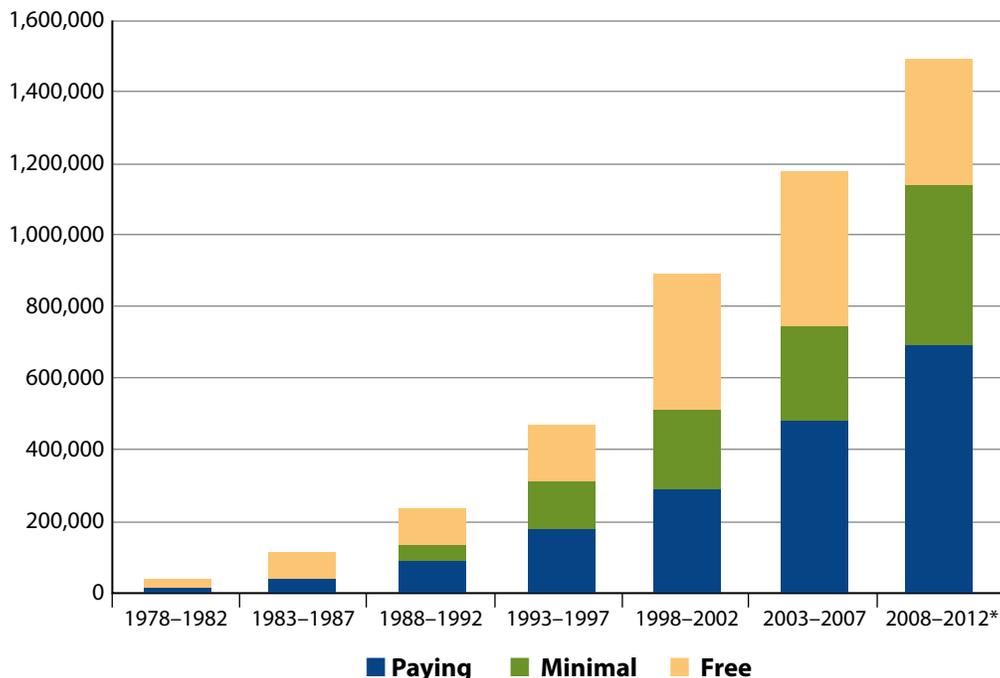


People often wonder if mistrust creeps in when organizations serving the poor charge market rates for some patients. “That kind of confusion doesn’t happen at Aravind,” says Thulsi, “because our prices are transparent and compare favorable with local markets.”

Aravind’s pricing strategy aims to make it easy for patients to seek treatment; there are no hidden costs. “We don’t add on charges for individual tests – like refraction, ocular pressure, urine sugar,” Thulsi explains. “To us, it is unethical to offer those services with separate price tags. These are basic tests that need to be done. They are all included in the \$1 consultation fee that is valid for up to three visits.” This outpatient fee (which applies only to paying patients) has not been increased in over ten years.

“From the very beginning, our systems have been designed so that there is no incentive for us to exploit a patient financially,” Thulsi says. “For instance, we don’t accept commission for patients that we refer outside for MRI or CAT scans.” The management regularly reviews clinical protocols to eliminate any tests or medications that do not contribute to improving outcomes or

Total Surgeries Performed as of May 2011: 4,035,582



Source: Aravind Eye Care System *2012 Data Projected

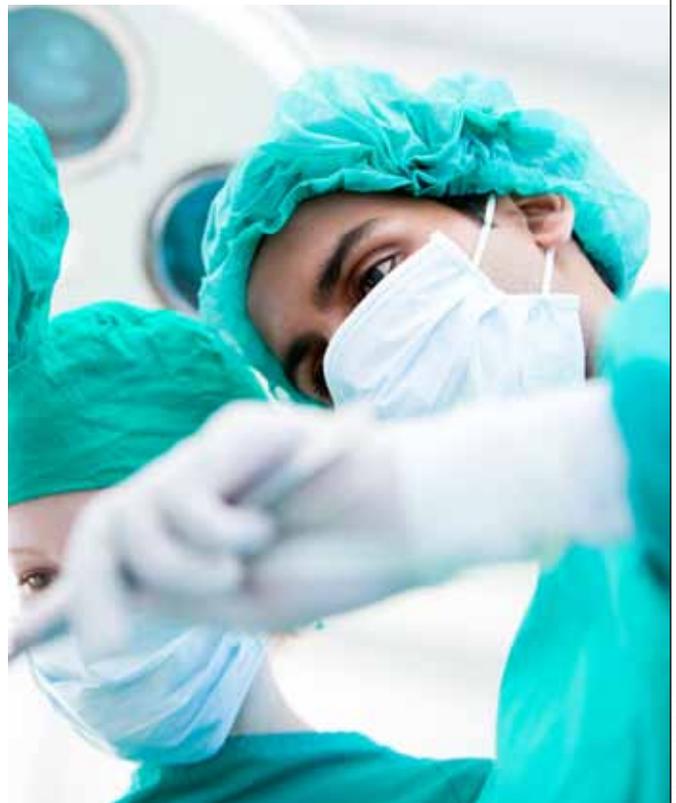
patient comfort. Meetings are held to analyze the number of re-operations, lengths of stay at the hospital, and the reasons behind postponed surgeries. Prescriptions for medicines and tests are scrutinized to ensure that they are advised only when necessary and of real benefit to the patient. The overall goal is to reduce any needless cost and inconvenience to those seeking care. It is an approach that continuously builds fiscal and operational efficiency into the system, as well as patient trust.

There is an interesting flip side to the issue of public perception. Most of Aravind's paying patients, while aware of Aravind's vast work in the community, have no idea that by choosing to pay for services, they are indirectly contributing to someone else's care. Aravind deliberately steers clear of advertising this pay-it-forward angle to its high-end customers. Touting charitable services can work against your reputation in a world where quality and charity are not necessarily linked, and Aravind leadership believes that when it comes to personal health, value for money and quality of care are priorities that tend to outweigh generosity.



"I would very much like to come to Aravind Eye Hospital to spend some time learning and to seek your advice" is a sentiment that Thulasi encounters in his inbox with increasing frequency. It is March 2010, and the man writing in today is Dr. Bharatendu Swain, a plastic surgeon with decades of experience at one of India's well-known corporate hospitals. His passion, however, is Aakar Asha, a grassroots, nonprofit initiative he founded. It performs free restorative surgery for people who are motor impaired and unable to afford the medical attention they need. Swain has studied Aravind's model from a distance and wants to learn more about it in order to better shape his own initiative.

The easy accessibility of Aravind's leadership would surprise most in the private sector. The door to Dr. V's office, for instance, is always open. Anyone can walk in



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"Where large need exists, you can build a much more sophisticated organization with a roadmap aimed at scale. Boutique interventions, even if they bring some kind of personal satisfaction, won't make the needed impact."

without an appointment. Thulasi's response to Swain is swift, warm, and encouraging. He intuits a genuine dedication and resonance of approach, and soon after Swain's e-mail, a full two-day itinerary is set up, including meals and a stay at the Aravind guesthouse. In Madurai, Swain will tour the hospital, watch live surgeries, meet Aravind's senior management, and be escorted to an

eye camp. This hospitality is typical of Aravind – even, as in this case, with a stranger whose work is tangential to its own mission.



Swain has a neatly trimmed salt-and-pepper mustache and a courteous air. Seated in Thulsi's office, he quickly turns the discussion to questions of scale. His team is now doing 500 complex reconstructive surgeries a year, at no cost to their patients.⁶ Swain wants to expand

Trust must be built and maintained across the entire patient spectrum.

to do ten times that number and asks Thulsi for his thoughts. Thulsi is candid in his answer: "Where large need exists, you can build a much more sophisticated organization with a roadmap aimed at scale. Boutique interventions, even if they bring some kind of personal satisfaction, won't make the needed impact. What's the estimated need where you are?" Swain has done his homework. "Roughly 415,000 people in my home state suffer from disability issues that we can treat," he says. "There's your case for scale," says Thulsi.

The people whom Swain's organization treats are typically healthy, apart from their motor impairment. All they require is a one-time surgical intervention. The needed intervention has low morbidity and next to zero mortality rates. The transformation in a patient's life is dramatic (in all these respects, the treatment parallels cataract surgery). But Swain must consider the issue of sustainability as his initiative grows. He is curious about Aravind's enviable patient equation that balances its service between the very poor and those able to pay.

"So how *did* you arrive at the 60:40 ratio between your poor and well-to-do patients?" Swain asks. Thulsi smiles. "It just happened," he says, adding, "that ratio isn't

fixed – the break-up is actually slightly different now." In Aravind's initial years, he explains, free services were provided on an ad hoc basis at the discretion of its doctors. If the attending surgeon knew or suspected that a patient could not afford surgery, then he or she waived the charge. Often the hospital had sufficient income to cover the expense, but when it did not, Aravind's founders dug into their own pockets to make up the difference. By 1980, the leaders created a formal policy giving patients the freedom to choose whether or not to pay for services. The 60:40 ratio of nonpaying and ultrasubsidized patients to those paying market rates emerged organically from there. In recent times, with the growth of the economy, that ration has shifted to 53:47.

"Currently at Aravind, for every 100 patients treated, the typical breakdown is that 47 will choose to pay close to market rate, 26 will come to us on their own and opt for care at very minimal cost [roughly \$15], 27 will choose to come in through our outreach efforts and be treated for free," Thulsi tells Swain. "The annual growth rate in terms of patient volume is about 10 percent," he says, "but the revenue growth rate is much more, because we are finding in recent years there is a real migration from free to paying. Our eye camps influence health care-seeking behavior in the community. Now the percentage of patients opting for free treatment is coming down, and the percentage electing to pay steeply subsidized rates is increasing."

While the paying-to-free ratio is not set in stone, it is closely monitored. Trust must be built and maintained across the entire patient spectrum. If either end loses faith in Aravind's services, the entire ecosystem of the organization is thrown off balance. Losing free patients increases unit costs, affects Aravind's reputation in the community, and reduces training capacity. Losing paying patients augurs a different set of ills. The organization knows this from walking the delicate balance between the two.



Thulsi briefly sketches for Swain a situation in the late 1990s when the proportion of paying patients at Aravind plunged to 18 percent. Projections showed that in as little as two years that figure would plummet to 10 percent. Senior leadership held a series of emergency hospital-wide meetings. It wasn't just the percentages that triggered the red flag. "The real concern was that we were off-sync. We weren't reflecting the market," Thulsi says. There was an upward mobility in the environment that was not showing up in Aravind's patient trends. Once the crisis was spotted, patient surveys were conducted and the results scrutinized for insights. Aravind's leaders learned that the problem was not because something had changed – it was because *not enough had*. As India's economy had grown and standards of living had gone up, patients were willing to pay more

for a more comfortable and modernized setting. But in the 25 years since its inception, Aravind's inpatient facility had not undergone any major renovations.

It was time to update more than the hospital's accommodations and amenities. Aravind's leadership also realized that it needed to place more emphasis on additional surgeries beyond cataract. The market for cataract surgery had matured and was becoming highly competitive. Pushed by this reality and by its own mission, the leadership decided to identify other areas of dormant need in eye care. Community surveys for the potentially

While the large volume of patients at Aravind forms the engine of the model, the system needs a *regular* flow of patients in order to be optimally efficient.

blinding conditions of glaucoma and diabetic retinopathy revealed a high number of undiagnosed patients. Not as common as cataract, these conditions would require a certain scale to make delivery viable and to develop the necessary treatment expertise. With its ability to provide high-quality, high-volume care, Aravind was well placed to provide such treatment. A more deliberate focus on subspecialties was thus born.

"We also looked at the surgical acceptance rate, patient counseling methods, waiting room ambiance, and cafeteria food," says Thulsi. "Then we worked on improving all these different things simultaneously. It took us about two to three years to course-correct and bring the ratio back to healthy equilibrium."

The experience strengthened the case for paying patients in the Aravind system. While providing high-quality eye care to those who can afford to pay little or nothing is an integral part of serving its mission,

Aravind's paying patients are key drivers for advancing quality, service breadth, and medical expertise. "We look at financial viability as an indicator of our relevance," says Thulsi. "If people are willing to pay [for something], then there is a need for it. Serving people who can pay helps keep you on your toes."

Self-reliance is more about a mindset than it is about money. It is a particular way of viewing your resources and putting them to the best use possible.

"Do you have a donor strategy?" Swain queries. Thulsi breaks into one of his infectious laughs. "We're not a good group to ask that question to because fund-raising really isn't one of our strengths," he says. "Dr. V chose to grow slowly and with internal resources."

He shares that Aravind's core patient care services as well as all of its new hospitals are entirely funded by revenue from its paying patients. "The founders did not want the eyesight of the community held ransom by external resources," he explains. "In the past, we have even turned down people's offers to support our free surgeries." He then makes an important clarification: "But for other areas, like eye care research, we welcome outside funding, and for many of our pilot initiatives we often actively seek grants."

Over the years, Aravind has received funding and technical support from an array of foundations, grant agencies, companies, and individual donors. These contributions are expressly earmarked for areas outside of core patient services and represent only a small percentage of Aravind's total income. In 2009, for instance, grants and donations accounted for 6 percent (roughly

\$1.8 million) of Aravind's income, compared with the 72 percent that was earned through patient revenue.⁷

Ultimately, in Thulsi's view, where money comes from is not nearly as important as how it is put to use. One organization might be extravagant with earned resources while another is frugal with donations. Based on Aravind's experience, Thulsi has come to believe that self-reliance is more about a mindset than it is about money. It is a particular way of viewing your resources and putting them to the best use possible.



Outside Aravind-Madurai, an orange bus rumbles down the street, lopsided with four young men hanging on for dear life in the open doorway. Behind it comes a man on a bicycle, with egg crates stacked higher than his head, wobbling precariously. There is a widespread talent in India for carrying more than what is considered sensible, and doing so with unruffled ease. You see it at Aravind too. Throngs of patients that would overwhelm many care providers are considered par for the course here. Aravind's hospital in Madurai alone sees roughly 2,000 patients every day. Collectively, its entire network of hospitals examines 7,500 patients daily.

While the large volume of patients at Aravind forms the engine of the model, the system needs a *regular* flow of patients in order to be optimally efficient. "Managing demand fluctuation is critical to maintaining quality and controlling costs," says Thulsi. Patient volumes are regularly scrutinized. Using data from past years, seasonal trends, and real-time monitoring, the management works hard to smooth out demand patterns and protect against dramatic peaks and troughs that stress the system. For the convenience of their patients, Aravind's hospitals have a walk-in, no-appointment-needed policy that makes it harder to control volumes. This vulnerability is further compounded by Aravind's practice of conducting eye camps.



© Anita Shao/Community Eye Health Journal

In the mid-1980s, the surgical load on Mondays would shoot up drastically because of the busloads of people brought in from weekend camps. By Wednesday, patient numbers would drop back to a more normal level.

Dealing with this spike-and-dip cycle was frustrating for staff and created inefficiencies. Aravind's approach to the situation was interesting. Instead of doing the most obvious thing and redistributing camps across the week to comfortably flatten the spike, it looked for ways to significantly *increase* patient volumes throughout the whole week – so that old “surge” numbers would be the new norm.

To pull this off, Aravind's leaders first analyzed the bottleneck in patient admissions. Looking at the data, they realized that a considerable number of patients were dropping out of the system after being told by a doctor that they needed surgery. Further investigation revealed a missing step in the process. Patients needed an opportunity to have their doubts and fears about undergoing surgery addressed at length by a staff member. A cadre of counselors was promptly conceived and a new division for patient counseling implemented.

Aravind's hospital network now has 164 patient counselors. Its systems ensure that a counselor meets with each patient advised to have surgery; she explains the entire process, along with all the various options available, and fields any questions the patient might have. Within two years of introducing counselors, direct admissions per week increased fourfold. In the same period, Aravind's eye camp volume also increased by 20 percent. But by then, the systems in place were robust enough to handle the increase without a hitch.

This approach to bottlenecks and capacity barriers at Aravind leaves no room for complacency. Dr. Usha Kim, one of the organization's senior doctors, recalls walking into Dr. V's office with two other colleagues in 1999 after first hearing of his plans to build a fifth hospital in Pondicherry. “We said to him, ‘Look, this is a bad idea. We don't even have enough doctors in Madurai right now. We have four hospitals already; we're not interested in starting another one,’” says Usha.⁸ Dr. V listened to them quietly and nodded his head. “If you feel that way, we won't do it,” he said. “But then after that, he called us each in to meet him individually,” says Usha, laughing at the memory. “He called me the next day and

said, 'You know, when you think you've grown enough, that's when you start to decline. It means you're walking downhill instead of climbing.'" Aravind-Pondicherry was inaugurated in 2003, and Dr. V's perspective on growth would slowly filter through the organization's leadership. "I've matured into the idea that when you're in a comfort zone, you start to deteriorate," Usha says. "You need to have some kind of pressure or you don't evolve. Dr. V was right – it isn't about staying where you are and feeling cozy." ■

Where Aravind differs dramatically from these other efforts is the magnitude of its work coupled with its astonishing financial self-reliance.

ENDNOTES

- 1 Tim Brown, interviewed at the IDEO offices in Palo Alto, California, December 2007.
- 2 Data supplied by Finance Department, Aravind Eye Care System, 2010.
- 3 [Karmali, N. \(2010\). "Aravind Eye Care's Vision for India," *Forbes Asia* \(March 15 issue\).](#)
- 4 Aravind Eye Care System. (2008). "A Debate on Funding Eye Care Fee for Service—Yes or No?" PowerPoint presentation.
- 5 Ibid.
- 6 Swain, B. (2010). "The Forgotten Tribe—Persons with Disability," PowerPoint presentation, Aakar Asha.
- 7 The remainder of the income comes from such sources as interest and dividends; tuition fees for its courses; and sales of its books, manuals, and various applications. Based on Income Statement, Aravind Eye Care System, 2009–2010.
- 8 Comments from Dr. Usha Kim are drawn from interviews, informal conversations, and other interactions between 2003 and 2011.

ABOUT THE AUTHORS

Pavithra K. Mehta is a writer and filmmaker whose award-winning documentary *Infinite Vision* followed the life and work of Dr. V, who was her granduncle. She is on the boards of the Aravind Eye Foundation and ServiceSpace, and co-leads ServiceSpace's DailyGood news portal and Karma Kitchen.

Suchitra Shenoy is the co-founder of a start-up dedicated to financial services for the poor. She was a founding member of the Inclusive Markets team at the Monitor Group and is on the advisory board of the Youth 4 Jobs Foundation.

Think Big. Go Small: The Benefits of Smallholder Sourcing

DAVID BRIGHT AND DON SEVILLE

Food and beverage companies are facing a rapidly changing world. Global demand is growing, yet the planet's ability to meet this demand is threatened by factors such as droughts, land degradation, and water shortages. Integrating smallholder farms into the supply chain is one promising way for companies to potentially increase production while contributing to rural development. At the same time, by sourcing from small-scale producers, companies can improve customer loyalty and enhance their brands. This briefing summarizes the business case for integrating smallholder farms into supply chains, the strategies used, and the advantages that have accrued to both companies and the poorest smallholders. While the challenges to integration are formidable and the risks for all involved are significant, they are far outweighed by the benefits.



David Bright

Consumers everywhere are growing more knowledgeable and concerned about the ethics of where and how their food and drink are produced. Food and beverage companies face a rapidly changing world, and global demand for their products is rising as the world's population grows. By 2050, the world will have approximately 9 billion people, which will require an estimated 70 percent increase in agriculture production over today.¹

However, factors such as drought, the consequences of climate change, land degradation, and biofuel production increasingly threaten the ability of agricultural companies to meet this demand. Some companies have found that including smallholder farmers in their supply chains is one way to mitigate such threats.

When their yields are pooled, smallholder farms can bolster a company's production capabilities by providing adequate supplies of key agricultural products.

In addition, smallholder sourcing is one way of managing a company's reputational risk.



Don Seville

A chink in a company's reputational armor, such as public revelations about exploitation, can significantly damage brand value. Consumers often react positively when they know that part of a company's sustainability strategy involves purchasing from small-scale rural farmers. While consumers will always care about price and value, they also hold companies accountable for how they treat the environment, how they treat their employees, particularly with respect to working

Smallholder Farmers

Smallholder farmers around the world produce a large range of crops from small plots of land that result in varying but small yields. They typically raise staples sufficient for feeding their families and sometimes producing small incomes. Crops vary by country. Cassava, for example, is raised in Africa, and soybeans, coffee, and sugar are raised in Brazil.

Agriculture remains the best opportunity for the estimated 1.5 to 2 billion people worldwide living in smallholder households to work and trade their way out of poverty.

conditions, and to what extent their business practices harm or benefit local communities.

The Development Case for Smallholder Sourcing

Agriculture remains the best opportunity for the estimated 1.5 to 2 billion people worldwide living in smallholder households to work and trade their way out of poverty.² Studies have shown that linking smallholders with well-functioning local or global markets plays a critical role in long-term strategies to reduce rural poverty and hunger. By including smallholder farms in their supply chain, companies are investing in the rural sector. As a result, local farmers and communities benefit from

improved productivity, increased income, access to technical services and training, and improved infrastructure.

For example, Alpina Foundation is working with Oxfam in Colombia to develop efficient small-scale dairies that can each process milk from up to 200 smallholder dairy farmers. If the pilot project proves commercially and socially successful, the aim is to scale it up to integrate thousands of small dairy farmers into the company's supply chain. In addition, Hariyali Kisaan Bazaar of India, a chain of more than 300 collection and distribution centers, provides small-scale farmers with a local "hub" for affordable farm goods and a link to the market through its buy-back scheme. To meet the needs of small-scale producers, these centers provide access to agronomists, insurance services, and mobile phone technology through which producers can gain up-to-date prices and special deals. And Sodexo factored in the effects of smallholders' fluctuating household incomes over the year when purchasing supplies for its canteens in Madagascar. The company offered advance payments and created a "buffer fund" to enable smallholders



FIGURE 1 **Leveraging Impact**

For companies investing in smallholders, it is not simply about brand value or poverty reduction. Other benefits do exist, and all reinforce one another. This enables any investment to be leveraged to increase both commercial and development impact.

From Think Big, Go Small. Adapting Business Models to Incorporate Smallholders into Supply Chains

to maintain production when household incomes were low. It also sourced from alternative regional suppliers at times when smallholders could get higher prices in local markets.

In addition to helping combat rural poverty and hunger, sourcing from smallholders can also help reduce gender bias. Agriculture offers an opportunity for women to run their own enterprises on or off farm, and if companies include these enterprises in their supply chains, they are also helping to reduce gender-based constraints on access to

training and opportunities for investment. Numerous studies have shown that, compared to men, female small producers engage disproportionately in local markets and domestic food production, and when given the opportunity can boost overall development in a community. For example, in Zambia, enabling women to invest in agriculture has increased overall outputs by an estimated 15 percent.³ Evidence also exists that income placed directly in the hands of women often translates to improved nutrition and education, especially for girls.⁴

Principles for Sustaining Successful Trading Relationships

Despite the considerable challenges of linking small-scale producers to formal markets, evidence shows that smallholder farms can be successfully incorporated with positive impact. The Sustainable Food Lab and Oxfam have identified five success factors that ensure corporate and smallholder value in trading relationships.

1. **Chain-wide collaboration** with shared goals and mutually agreed upon returns is essential to successful trading relationships. This kind of collaboration across the supply chain aids in the identification and resolution of performance issues before they negatively impact the partner relationship. Likewise, transparency is critical to the success of the process, especially when perishable commodities, which require traceability and management of food safety risks, are involved. In addition, as members of the supply chain come to understand their interdependencies and their ability to adapt to shifting markets, chain-wide collaboration serves to stimulate innovation and creativity. Finally, collaboration with stakeholders outside the supply chain has the potential to attract further investment.
2. **Market linkages**, which are common weak points between informal smallholder farmers and formal supply chains, need careful monitoring. This is generally done through intermediaries. Intermediaries aggregate production from multiple small-scale growers and make sure that the growers have the support services they need to guarantee high-quality and consistent output. Intermediaries can also help smallholders distribute their risks by helping them diversify into other markets.
3. **Fair and transparent governance** is also important to incorporating small-scale farms into the supply chain. This includes defining mutually agreed-to terms of trade, quality standards, and pricing structures. It also involves dispute resolution mechanisms, which are essential to improving understanding within and among supply chains. Clearly defined on-farm management standards and incentives are part of good governance and play an important role in promoting and maintaining sustainable social and environmental farming practices. Good governance should also include a mechanism for organized groups of farmers to contract with each other, as such groups can more effectively negotiate fair prices and obtain financing than individual smallholder farmers can.
4. **The equitable sharing of costs and risks** underpins successful trading relationships. Typically lead companies, which have the advantage in their ability to directly access customers, take the lion's share of the profit, leaving smallholders to bear much of the risk without a commensurate reward. Deciding which crops to grow, when to plant them, and how much to invest are risks for all small-scale farmers. Lead companies must be willing to share in these risks by educating smallholders about the principles of supply and demand and about available financial risk management schemes.
5. **Equitable access to services** ensures that smallholder farmers have ready access to technical expertise, business training, fertilizers and high-germinating seed, and appropriate financing. These producers also generally need help in developing best practices for soil, water, chemical, and labor management. Partnership with other companies, NGOs, and governments can often provide such expertise, but for smallholders to achieve long-term success, such services must be embedded in the day-to-day functioning of the supply chain. The way in which access to services is managed will determine whether small-scale farms remain dependent or become self-sufficient and truly developed.

Despite the considerable challenges of linking small-scale producers to formal markets, evidence shows that smallholder farms can be successfully incorporated with positive impact.

“Helping the poorest small-holder farmers grow more crops and get them to market is the world’s single most powerful lever for reducing hunger and poverty.”

– Bill Gates, World Food Prize speech, October 15, 2009

Challenges of Linking Small-Scale Producers to Formal Markets

Successfully incorporating smallholders into domestic and global supply chains in a way that delivers commercially viable products and value to smallholders has its challenges. Owing to a long history of underdevelopment, small-scale producers often operate in areas with inadequate infrastructure and insufficient access to skills and services. Compounding these challenges, they lack uniformity in the way they operate and exist



FIGURE 2 **Adapting the Business Model**



The critical change for a company is to adapt its practices for sourcing and purchasing and to work with key partners in the supply chain to restructure trading relationships or develop new chains. However, to enable change of this kind to happen, companies also need to adapt their:

- **Corporate Culture** – From a competitive mindset to a partnership-oriented outlook;
- **Operations** – To create incentives for buyers to invest in creating long-term stability and development benefits in supply chains;
- **Corporate or Brand Communications** – To integrate verified commercial and development benefits delivered through these changes.

From Think Big. Go Small. Adapting Business Models to Incorporate Smallholders into Supply Chains

in scattered locations. Because of their substandard level of living, smallholders are generally uneducated, have restricted access to healthcare, and are often limited in their ability to deal with extreme weather conditions that threaten their crops. Basic elements of responsible farming, such as waste management, safe use and storage of chemicals, water quality, soil management, and fair treatment of farm labor, all need to be addressed if supply chains are to be environmentally and socially responsible. Without adequate investment to manage these issues, problems can easily arise, reinforcing a widely held impression



that smallholder involvement creates more challenges than it solves.

The Adaptation of Business Models

A number of global consumer goods companies have invested in the practice of including smallholders in their supply chains as a core business

Incorporating smallholders into supply chains is proving to be a winning strategy for many mainstream businesses.

strategy and not as an afterthought. Some companies that have adapted their business models have done so by making relatively small but consistent investments through agreeing to forward contracts, sharing technology, and paying quality premiums to farmers. Many that are not trading directly with smallholders are working with

intermediary suppliers to engage indirectly with farmers. So as not to undermine their investments in new trade relationships, some companies are providing specialist training for their purchasing teams whose strategies in the past have focused on faster, more flexible, and cheaper production – strategies counter to those used for incorporating smallholder farms into supply chain management.

The Pay-Off

Incorporating smallholders into supply chains is proving to be a winning strategy for many mainstream businesses. For example, companies sourcing from the global south, where most suppliers are smallholders, have built retail sales of almost €3bn, the equivalent of approximately US \$3.625 billion.⁵ Working with mainstream companies, the Rainforest Alliance certification program for small farms has seen a 5 to 11 percent increase in sales in a one-year period. And in emerging markets such as Brazil and India, an estimated 2 billion more urban middle-class consumers with increasingly

higher disposable incomes will boost demand for higher-value processed food and drink by 2030.

The business case and the development case for mainstream companies to include smallholder farms in their supply chains are compelling. In order for this change to be successful, however, companies must be willing to risk making systemic changes in their organizations. They must shift their corporate culture from a mindset of zero-sum competition to one of partnership and

collaboration. Their operations will have to include incentives for buyers to invest in creating long-term stability and development benefits in their supply chains. And their communications, both corporate and branding, need to include *verified* commercial and development benefits that have been delivered through these changes. The task is daunting, but the consequences of not stepping up to the challenge are even more so. ■

ENDNOTES

- 1 [Food and Agriculture Organization of the United Nations](#)
- 2 World Development Report (2008) "Agriculture for Development" states that there are 1.5 billion people in smallholder households; P. Hazell, C. Poulton, S. Wiggins, & A. Dorward (2006) "The Future of Small Farms" (Synthesis Paper) states over 2 billion. These smallholders include half of the world's undernourished people, three-quarters of Africa's malnourished children, and the majority of people living in absolute poverty (IFPRI, 2005).
- 3 Gates Foundation, Gender Portfolio White Paper, 14 November 2008, p. 7.
- 4 Hoddinott, J. & Haddad, L. (1995). "Does Female Income Share Influence Household Expenditure Patterns?"
- 5 Fairtrade Labelling Organisation Annual Report, 2008–2009.

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COMMENTARY 12.2

Commentary

GUSTAVO SETRINI



Gustavo Setrini

“**T**hink Big. Go Small: The Benefits of Smallholder Sourcing” makes a strong case for why businesses should adopt small-farmer sourcing. Drawing successful examples from around the world, it also offers important insights for other companies that wish to so incorporate smallholders into their supply chain. But what about the inverse question? How do small farmers successfully become suppliers for global food companies? Under what circumstances do they benefit from participation in global supply chains? And what can we learn by studying global supply chains from a farmer’s point of view?

Multinational food companies must incorporate smallholders in their supply chains to achieve a socially sustainable food system. As the article points out, investing in small-scale agriculture is a powerful strategy to address poverty, hunger, and inequality at a time when consumers are demanding ever-greater social accountability from businesses. Economic efficiency alone demands a shift toward small-farmer sourcing. The negative relationship between landholding size and land productivity is one of the most established empirical findings in the field of economics.¹ On average, small and medium farms produce more goods per unit of land than large farms, given equal access to transport infrastructure, credit, educational opportunities, and other productive assets. This fact means the world could feed itself more cheaply by supporting small-farmer development. It also shows that we need not accept increasing levels of inequality in order to feed ourselves efficiently.

However, small farmers confront globalization under tremendous economic, political, and social disadvantages, and, under these conditions, the consolidation of global supply chains is linked more closely to their exclusion than to their development. In most places, small farmers are trapped by a series of tightly linked problems. First, they lack the production infrastructure, technology, and knowledge to meet new and demanding global quality standards. Second, they lack access to information about which investments are most valuable in the global marketplace. Third, even when they can identify profitable investments, farmers generally lack access to credit. Fourth, farmers often access these assets through intermediaries that perpetuate farmers’ dependence and isolation. And fifth, farmers occupy the riskiest and least rewarded node in the agricultural value chain, weakening their incentives to invest in agriculture and pushing them into other sectors and toward urban or international migration.

Moreover, integrating small farmers into global supply chains requires institutions capable of negotiating formidable discontinuities of scale and power. Global companies operate on a very large scale and aim their products at global consumer markets. They require large volumes of uniformly high-quality goods on short delivery schedules. Small farmers operate on a very small scale, and historically their produce is directed toward subsistence and local markets. To make small-farmer sourcing a reality, mechanisms must be established to coordinate learning, investment, and production activity among hundreds or even thousands of small farmers so their individual efforts combine to increase volume of the right kinds of goods at the right time. Furthermore, global buyers are vastly more powerful than even well-organized farmers. Ensuring that small farmers benefit from globalization requires putting structures in place for them to articulate and defend their interests.

As the preceding article suggests, CSR initiatives, corporate sustainability programs, and third-party certification may represent one set of institutional innovations necessary to make globalization more inclusive of small farmers. They work on the global demand side of the equation to expand the markets available for small farmers, creating opportunities for them to adjust their production strategies and become competitive in global markets. However, research on these initiatives has shown market incentives are insufficient to drive small-farmer development, and their effect can be limited or perverse when local support systems are not in place.

The Limits of Market-Driven Development

Third-party certification has been among the most promoted market-driven methods to support socially and environmentally responsible trade. The label “market-driven” suggests that the social conditions and environmental impact of production will adjust in response to market incentives. Thus, groups like Fairtrade and Rainforest Alliance harness the economic power of concerned consumers in order to offer increased market share to companies that source in responsible ways and to grant market premiums for their suppliers. They also establish auditing protocols to guarantee that consumers get what they pay for and to ensure that positive incentives reach only those companies and suppliers that comply with high social and environmental standards. By providing information about how goods are produced, certification is meant to encourage companies to do well by doing good.

Research has shown, however, that certification is costly to farmers in terms of financial, human, and time resources and that the market premium it brings can be entirely absorbed by certification costs.² Furthermore, while the most committed “mission-driven” buyers of certified goods invest in long-term, collaborative supply relationships of the sort described by Oxfam and the Sustainable Food Lab, “market-driven” buyers tend to favor traditional short-term and arms-length relationships with suppliers, thus viewing certification as a supply-chain management tool to guard brand reputation and court affluent consumers. For the latter, certification does not preclude business practices such as “withholding market information, competing with other buyers, and fueling competition between suppliers”³ that limit small farmers’ success in conventional markets.

All of the factors listed above as causes for small farmers’ marginalization also limit their ability to respond to the incentives provided by third-party certifications and corporate sourcing programs primarily driven by market and marketing incentives. To overcome their dependence and vulnerability, small farmers require a network of support organizations at the local level, which is costly to establish. This type of intervention goes well beyond the capacity and commitment of most buyers, and, where they are able to source from small farmers, global companies often rely on previous work undertaken by farmer organizations, NGOs, government, and international donor groups.

Local Partnerships for Global Sourcing

Effective farmer organizations and cooperatives are crucial for making global supply chains more inclusive. They can coordinate the set of educational, technological, and infrastructure investments that small farmers are unable to pursue on their own. Moreover, they give small farmers access to the managerial services and expertise necessary for managing the quality, logistics, and legal demands of formal international markets. When they are democratically governed, farmer organizations help ensure that the benefits from international trade are spread broadly by disseminating a variety of goods and services to their members, including effective marketing and negotiation strategies with powerful buyers.

However, farmer organizations and cooperatives have a mixed reputation and an uneven record of success. On the one hand, students of smallholder development have consistently identified cooperatives as a factor in small-farmer competitiveness and advocate broader use. On the other hand, researchers who have examined cooperatives as a business strategy describe them as woefully inefficient and doomed to marginality. These observations reflect the difficult and often contradictory task that farmer organizations face: they must balance an economic function with democratic representative functions in a competitive marketplace. Farmer organizations often sustain decades of financial insolvency, mismanagement, and corruption before emerging as successful enterprises developed through organizational learning and democratization processes.

This slow process can be aided by global market incentives, but it especially depends on the support network available to farmers and their organizations at the local level. When farmer organizations are connected to multiple buyers and a variety of other institutions, such as government extension agencies, microfinance and other lenders, NGOs and training institutes, and other farmer organizations, they develop independent resources to support learning and capacity building among their members. In turn, as their farmers upgrade their individual capacities, they are better able to hold their organizations and their leaders accountable.

This experience suggests that a shift toward small-farmer sourcing will likely be a corporate response to what small farmers accomplish on their own and in collaboration with government, NGOs, and international donors. However, this work will be much easier in collaboration with committed buyers who can provide market outlets and information about demand to small farmers. Third-party certification and corporate sourcing decisions have already created markets that privilege smallholders. This access has provided venues for organizational learning and upgrading among small farmers at a time when private-sector demands on them have escalated rapidly. To the extent that third-party and corporate initiatives support the development of local institutions that are responsive to small farmers, they provide a key strategy for building a more sustainable global food and agriculture system. ■

ENDNOTES

- 1 For a review of this literature and an examination of its enduring relevance to contemporary conditions, see Lipton, M. (2009). *Land Reform in Developing Countries: Property Rights and Property Wrongs*. Routledge.
- 2 Mutersbaugh, T. (2005). "Fighting standards with standards: harmonization, rents, and social accountability in certified agrofood networks." *Environment and Planning A*. Volume 37, 2033-2051.
- 3 Reynolds, L.T. (2009). "Mainstreaming Fair Trade Coffee: From Partnership to Traceability." *World Development*, vol. 37, issue 6.

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The Art of Sustainability: Creative Expression as a Tool for Social Change

DOMINIC STUCKER AND JOHANNA BOZUWA

Much of the work to date on sustainability has relied on intellectual arguments, reams of compiled data, and complex charts and graphs. These tools are essential for developing an accurate understanding of social and ecological trends, but they often fail to engage people's emotions. Artist Jay Mead uses several different media, including creations made from found objects, shadow puppet shows, and giant puppetry, to help people connect with nature and tap into their personal visions of a more sustainable future. According to Mead, by stimulating the right side of the brain, this kind of "heartwork" leads to an intuitive understanding of systems and new approaches to entrenched dilemmas. While our current socio-environmental challenges can be daunting, Mead finds that creating art in a group sparks a sense of hope as people concentrate on taking tangible action together.



Dominic Stucker



Johanna Bozuwa

According to recent research, our climate is changing faster than anticipated, and the Earth is headed toward largely irreversible global tipping points (see Barnosky et al, "[Approaching a state shift in Earth's biosphere](#)," *Nature*, June 7, 2012). While many are convinced that we can innovate our way out of our problems using science, technology, and policy changes, it is becoming increasingly clear that such solutions alone will not suffice – we also need new ways of being, communicating, and collaborating to address the current and inevitable environmental and social challenges we face.

The good news is that we already have many of the tools we need to make the transition to sustainability, including systems thinking and creativity. A systems approach encourages us to convene diverse stakeholders to better understand the integrated economic, social, and environmental systems we seek to change. Creativity and the arts help us gain clarity of vision and tap into the breakthrough thinking necessary for innovating a new reality and a new relationship between people and planet.

We already have many of the tools we need to make the transition to sustainability, including systems thinking and creativity.

In this article, we introduce artist Jay Mead and his philosophy of art as a way to enhance systems thinking and promote social change, all in service of achieving environmental and social sustainability. We describe his unique and engaging approach to helping people tap into their often-latent creativity and ability to be in tune with and learn from nature. By inviting people to let go of inhibitions and

assumptions, Jay supports them in deepening their capacity for creative expression and their relationships with one another and their surroundings. In this way, they develop fresh perspectives and shared visions of a vibrant future.

Hunger for a Different Kind of Experience

Jay Mead coined the phrase the “[art of sustainability](#)” to refer to the technique of applying creative

expression to advance the principles and aspirations of sustainability. Much of the work to date on sustainability and systems has been portrayed in graphs and diagrams through a logical, scientific lens. While these tools and perspectives are essential to developing an understanding of the world, they are abstractions that can leave people wanting. “People are hungry for a different kind of experience,” Jay comments. Art makes systems more

Artist Jay Mead



My life has been a journey down a path of design and creation. From a young age, I was enamored of art and have experimented with many different media. While at Dart-

mouth College, I became involved with and was deeply affected by the political and community aspects of [Bread and Puppet's](#) work. (Vermont-based Bread and Puppet has been performing its unique style of political theater since the mid-1960s.) Through various demonstrations in New York City and Washington, DC, in the 1980s, I discovered that art could be a tool for activism. I began teaching art at a high school and, realizing the great potential for promoting personal and global change through creativity, have continued to teach throughout my life.

I also ventured into community art as a core member of [Wise Fool Puppet Intervention](#), a giant puppet company that formed in San Francisco in the late 1980s and performed political theater for 10 years in the Bay Area, Central America, Germany, and the Czech Republic. We were involved in using art to send a social message. My seminal piece during that time, which combined my studio work with environmental activism, was “[Found Stump](#).” Commissioned by the San Francisco

Arts Commission, the 20-foot-tall piece was made entirely of recycled wood. It highlighted the destruction of California's ancient redwoods and the misuse of this extraordinary resource.

The instructional part of my career has increasingly moved outside of the classroom and into residencies and workshops, including programs at the University of Chicago and Vassar College as part of the “Big Art” project; a performance residency at [Visão Futuro](#) in Purangaba, Brazil; and multiple residencies with the Donella Meadows Leadership Fellows in Vermont. This work is as much about empowering people of all ages to create as it is about seeking social transformation through art.

Other projects include numerous sculptures for the Sculpture Fest in Woodstock, Vermont, my first book, *A Little Farm Story* (Harbor Mountain Press 2011), and one-of-a-kind shadow puppet shows. I am currently adapting “The Turning,” a shadow puppet show I created with Elizabeth Sawin on climate change and a vision of the future, into a graphic novel.

I work with Sustainability Leaders Network, bringing the “Art of Sustainability” to leaders in the social and environment change movement. We see creative, out-of-the-box problem solving as essential for addressing the many challenges we face in bringing about a life-sustaining future for people and planet.

visible while creating a sense of immediacy and adding resonance to a given problem.

The picture book *A Little Farm Story* (Harbor Mountain Press, 2011) is a good example of Jay's artistic rendering of systems. With vibrant illustrations and haiku-style writing, he portrays the interconnectedness of a farm, the seasons, and the role of humans in those systems. The illustrations bring the concept of local agriculture to life for readers. Rather than using complex diagrams, Jay translates the systems thinking ideas of interrelationship and feedback into beautiful, moving, and accessible paintings.

Jay describes this deepening of systems thinking as a move from head to heart, and he therefore refers to his pieces as "heartwork." Sculpture, painting, and performance can generate an emotional response and novel insights into a social or environmental system. For Jay, this kind of heartwork allows him and others to reflect on and process life-changing events, whether a personal tragedy or the clear-cutting of an ancient forest.

Through art, people can grasp the magnitude of a challenge. For instance, Jay recalls a thought-provoking exercise, originally carried out by 140 students, faculty, and staff at Dartmouth College, in which people collected and carried all of their garbage in a plastic sack for a week. This activity had two purposes: to make the carrier and others more conscious of the amount of waste they generated, and to create a moving art installment. "Because some of us live in an abundant place, the amount of waste we produce isn't obvious," says Jay. When the problem is hanging on the actor's back, it is impossible to ignore.

What If?

In addition to making problems visible, art also engenders hope. In her syndicated *Dear Folks* column, the late Donella (Dana) Meadows, professor, farmer, and co-author of *The Limits to Growth* (Club of Rome, 1972), shared her reflections on the state of the world and the long road to sustainability.

Sustainability Fellows

Convened by [Sustainability Leaders Network](#), the Fellows Network consists of 80 leaders from around the world who are alumni of the Donella Meadows Leadership Fellows Program. Fellows strive to address social, economic, and environmental issues at their root causes, as taught by Donella Meadows, the inspiration for the program. They are active across sectors and issues areas, bringing a wide range of representation into conversations. Fellows learn to apply a suite of leadership practices – visioning, systems thinking, reflective conversation, and creative expression – to many fields, from renewable energy and climate to water and sustainable agriculture, from poverty eradication and social entrepreneurship to corporate social responsibility and media for social change.

Jay Mead has worked closely with the Fellows Network to pilot the Art of Sustainability approach, offering participants hands-on opportunities for creativity, spontaneity, and reflection. As Fellow Kristi Kimball, program officer with the William and Flora Hewlett Foundation in California, put it, "[Through the Art of Sustainability workshop] I gained a new sense of hope and inspiration, the re-ignition of the creative side of my brain, and a recommitment to and refinement of my original vision for my professional and personal development."

Art makes systems more visible while creating a sense of immediacy and adding resonance to a given problem.

She always ended her letters with the inspiration she took from what was just outside her window, such as a bee collecting honey. In these seemingly inconsequential details, she drew hope from her surroundings and from nature's resilience. Dana's engaging and poignant writings are another example of the art of sustainability.

As an artist and teacher, Jay finds inspiration in Dana's visionary words and applies them to his art. He says, "My artistic passion is driven by the question 'what if?'" The question "what if?" represents an unknowing and a trust that new insights and ideas will emerge that lead to the discovery of one's personal vision, connection to nature, and care for the greater community of life. In Jay's view, this inquiry involves expanding possibilities and a different type of intelligence than the rational one on which we generally rely. We spend much of our daily life using the left side of our brains and looking logically at the world around us. By engaging in the artistic process, our minds tap into a wealth of knowledge that, for many of us, has been dormant since childhood. Allowing ourselves to consider the "what if" can stimulate the right side of the brain, opening up expansive possibilities, an intuitive understanding of systems, and new approaches to entrenched dilemmas.

Some of Jay's most powerful workshops involve groups of participants creating art in nature and in community. By being present in the moment, participants draw inspiration from natural ecosystems and human interactions. The immediacy of the experience creates a visceral understanding of the given system and engenders innovative ways of thinking, being, and acting.

By engaging in the artistic process, our minds tap into a wealth of knowledge that, for many of us, has been dormant since childhood.

Art in Nature Workshop

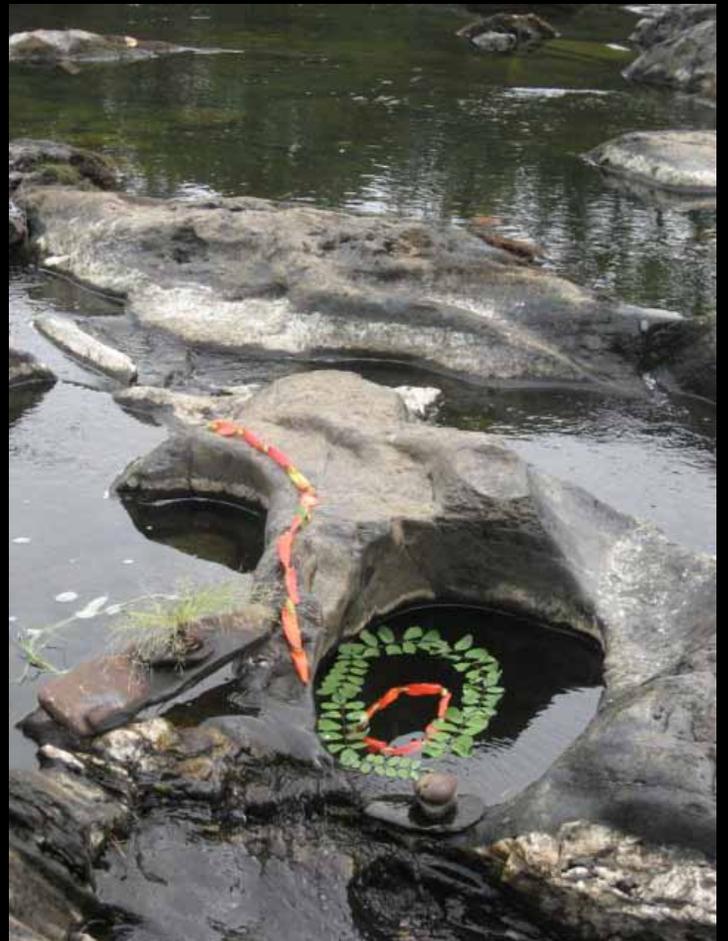
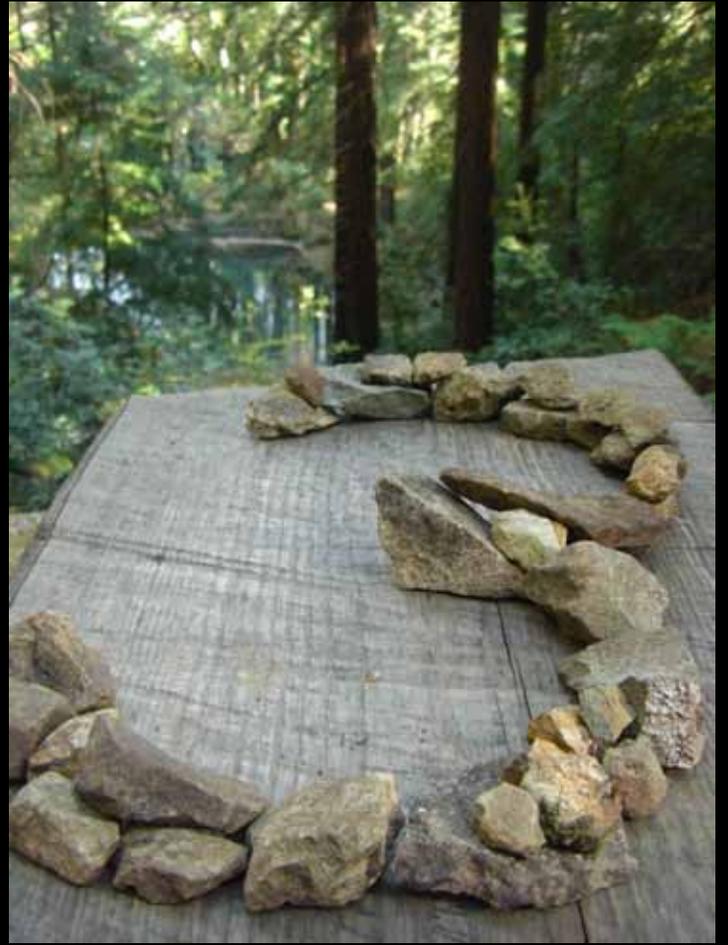
One kind of nature workshop that Jay offers is inspired by the work of British artist Andrew Goldsworthy. Goldsworthy uses natural material, including snow, ice, leaves, bark, rock, clay, stones, petals, and twigs, to create outdoor sculptures inspired by and part of nature. Jay encourages participants to follow Goldsworthy's lead by immersing themselves in the outdoors and creating their own in situ pieces employing found objects.

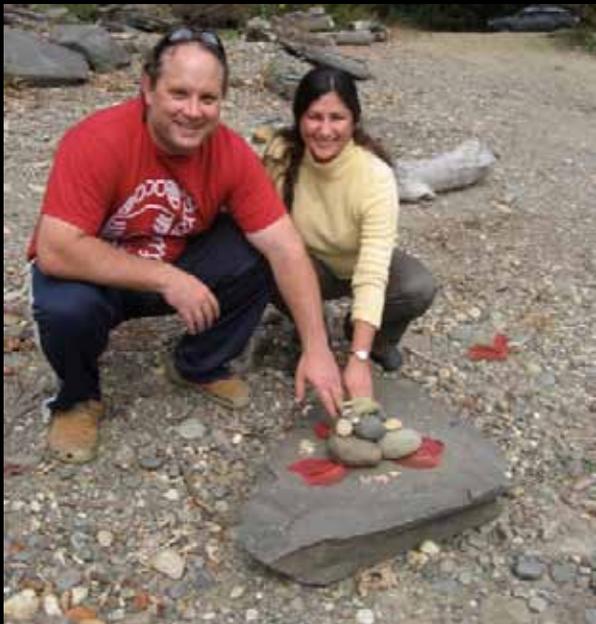
Participants find that, by sitting quietly, eyes opened or closed, they hone their skills of observation, noticing patterns and processes that have evolved over millennia. Using all their senses, they experience and learn from nature. Perhaps they see the streams, brooks, and river in a basin, noticing nature's nested hierarchies. Gazing skyward from a soft bed of pine needles, they might observe the forest's resilience in flexibility, trees swaying in the wind. Or they smell the pungent soil, part of the annual cycle that returns sustenance to the trees' roots. Perhaps they see the genius in a flower, tracking the sun and folding its petals at dusk; or in the capacity of a cactus to store water; or in the design of a feather. Through the "playful meditation" of this art exercise, participants learn from and create in tandem with these natural systems.

As a result, people tap into their own creativity as a way to explore, express, and clarify their visions for the future. In addition to personal discoveries, people often gain a greater sense of connection to the group and the place. Michael Dupee, senior vice president for corporate social responsibility at Green Mountain Coffee Roasters in Vermont, notes:

The Art of Sustainability session helped me to profoundly reconnect with the natural system in which we live and my own potential as a creative being. The result for me has been a deepening experience of a very powerful way of being in the world – a way of being that creates the space for me to show up for life differently, to connect with people differently, to ask different questions, and to generate different responses to the challenges I encounter. I hesitate to describe this as a *new* way of being – rather, in my heart, it feels like an entirely *old* way of being . . . but a way of being to which I had lost my connection.

In this activity, the creative process is one of humility and co-creation with nature, with the vision for the piece often emerging throughout the process. For example, Trista Patterson, an





ecological economist with the United States Forest Service in Alaska, collected small red berries and wanted to create a heart shape alongside a forested stream. The water, however, pulled some of the berries into the current, carrying them into eddies downstream and highlighting flows not visible to the casual observer. The lesson was one of letting go, of collaboration, of fully participating in the process and being open to an array of outcomes. Ultimately, the creative process helps us learn about ourselves, gain insights about our place in the world, and clarify our visions for the future.

Puppetry for Social Change

While the global process toward sustainability can be daunting, Jay finds that creating art in a group sparks a sense of hope, as people concentrate on the beauty of the moment and on taking tangible action. Jay has found that shadow puppetry and giant puppetry are useful tools for social change, because these art forms cannot be created or performed without a community effort. By developing and telling a specific story, the players have made something that they can see, hear, feel, and share with others. Their work can have a transformational effect on themselves and on the audience.

Shadow puppetry is an ancient form of art that uses light or fire to create shadows behind a screen to tell a story. The most classic versions of shadow puppetry are found in Bali and greater Indonesia. The art form is one of the oldest, going back to the time of cave dwellers. By using this medium, Jay connects his art to something ancient, while dealing with contemporary issues.

The Turning

An example of one of Jay's shadow puppet plays is "The Turning," which he wrote in collaboration with climate scientist Elizabeth Sawin. "The Turning" tells the story of a complex, global challenge we currently face, while also inspiring hope.

The story takes place in a future city where the mayor announces that the world has not only achieved a zero carbon footprint, but has started

to decrease the amount of carbon dioxide in the atmosphere. With this news, the city celebrates the hard won victory of sustainability. The mayor describes the struggles that the world has surmounted before achieving this goal, such as starvation in some areas and the extinction of different species. Among the festive crowd, a grandmother takes her granddaughter through the city, describing the times before sustainability (our current reality). They also walk past examples of the elements that helped bring about a more sustainable world, such as wind turbines, community gardens, bicycles, solar installations, and mass transit.

Creating art in a group sparks a sense of hope, as people concentrate on the beauty of the moment and on taking tangible action.

This particular play highlights essential leadership practices for social change work, such as systems thinking, visioning, reflective conversation, and creative expression. People often look at the world around them and see problems. The next step after problem identification is visioning, in which people envision solutions and ways of being that transcend the challenges they see. Jay and Elizabeth intentionally incorporated real-world solutions in the play to help the audience envision how the described future can become reality.

In the first few performances, Elizabeth began by speaking about the current reality of climate change and sustainability, leaving most of the audience feeling discouraged. She then changed roles and became the storyteller of the shadow puppet play. Jay comments, "Beth hit you with the hard reality of the present and then the promise of the future." Workshop participants were solely audience members and not players.

For later performances, however, Elizabeth and Jay involved participants as performers. Being part of

The incorporation of what the area had to offer opened up possibilities for reuse along with broadening perspectives of what is beautiful.

the performance drew the group into the vision being portrayed. Many saw this art medium as a practical tool for effecting change within their own communities and lives; some have even brought shadow puppetry into their work.

Giant Puppetry at Visão Futuro

Jay also uses the related medium of giant puppetry to create change. These puppets are larger than life, and the players do not hide behind a screen but are within the puppets. The giant puppets are best suited for pageantry and outdoor performances. A good example of Jay's work in

giant puppetry was his facilitation of a community performance in Brazil in 2006 at Visão Futuro.

Visão Futuro is an eco-village outside of São Paulo. Jay worked with community members to put on a giant puppetry performance highlighting environmental and sustainability issues relevant to Brazil. For two weeks, Jay and the Visão Futuro community collaborated on the vision and realization of what was to be portrayed during the play. Given the grand scale of the puppets, the performance had to be a community event. Jay taught the group how to create the puppets, write a storyboard, and animate these giant theatrical elements.

Jay and the Visão Futuro community created characters and props that depicted the greed, fear, and apathy that the current economic system perpetuates. Questions arose about humans' relationship with and place within nature. By personifying these ideas in giant puppets, the artists

Co-Creating with Nature

I [Dominic] participated in two of Jay's art in nature workshops along rivers in Vermont and Connecticut. In his workshops, Jay invites participants to see nature anew through quiet observation, sensing, and play. The invitation includes being fully present, setting aside transient to-do lists and deep-seated preconceptions about how the world works. Participants are asked to start from a place of unknowing – playful for some, meditative for others – allowing deeper wisdom to emerge.

Encouraged to accentuate patterns in nature, we created a wide variety of art from found materials. I was drawn to the flow of water in each basin and created pieces that traced these lines. Personally, I think I wanted greater flow in my own life, a balance of the dynamism and confidence of water as it makes its way through the world. Professionally, I am now conducting research on how we can cooperate in shared river basins to adapt to climate change impacts.



Dominic Stucker along Connecticut River, Vermont, October 2011

made emotions and abstract concepts tangible. Participants used art as a tool to describe and to better “feel” the systems around them.

The group used raw materials from their surroundings, for instance bamboo and recycled materials found on site, to create the giant puppets. The incorporation of what the area had to offer opened up possibilities for reuse along with broadening perspectives of what is beautiful. In this process of rediscovering the environment, new opportunities arose. Also, by incorporating the four major elements of earth, air, water, and fire, the community was able to further understand the interconnectedness of different natural systems.

Participants used the natural landscape to tell their story. The play moved throughout the community’s grounds, with players walking up and down the rolling hills, stopping within the forest, and finally launching a giant puppet across the water to an island where audience members stood chanting. Through the performance, the community of Visão Futuro journeyed into a story that continues to be told every day in Brazil: the balance between struggle and celebration.

This collaborative approach exemplifies Jay’s emphasis on process. Through the construction of colossal pieces of art, he and the community bonded around a shared vision – to instruct the audience about sustainability and the role of community in Brazil. In the group’s work together, new connections were made and new ideas were accepted to further the vision. Although the performance was specific to Brazil and to the site, this type of small-scale cooperation exemplifies the change in interactions needed on a global scale. As Jay comments, “A lot can be done with committed people, and the people of Visão Futuro are committed to the betterment of humanity.”

In Jay’s shadow and giant puppetry productions, the common threads of community, rediscovery, systems, visioning, and hope emerge – key components in creating social change.

Art from a Systems Perspective

As we have seen in the above examples of art in nature, shadow puppetry, and giant puppetry, the creation of art can help us better experience, understand, and act within the systems we seek to change. In fact, systems thinkers encourage many of the same approaches that are found in

Systems thinkers encourage many of the same approaches that are found in the creative process.

the creative process. In her classic article, “[Dancing with Systems](#),” Dana Meadows describes the importance of letting go, applicable to both creating and thinking in systems:

The future can’t be predicted, but it can be envisioned and brought lovingly into being. Systems can’t be controlled, but they can be designed and redesigned. . . . We can listen to what the system tells us, and discover how its properties and our values can work together to bring forth something much better than could ever be produced by our will alone. We can’t control systems or figure them out. But we can dance with them!

Dana goes on to highlight some of the same qualities practiced in Jay’s Art of Sustainability sessions as guidance for navigating complex systems. At least four are about observation and learning:

- Get the beat
- Listen to the wisdom of the system
- Expose your mental models to the open air
- Stay humble, stay a learner

These guidelines encourage us to notice the diversity of stakeholders, flows of information, and behavior of the system over time. Dana encourages us to notice what works well before making changes and, when we intervene, to do so in the spirit of experimentation and humility, learning from our mistakes.

In order to achieve an inclusive view, she urges us to:

- Expand time horizons
- Expand thought horizons
- Expand the boundary of caring

When creating art with nature or engaging in a community puppetry performance for social change, we see that all things are interconnected. For example, when we observe a particular ecosystem, we see the links between the different forms of flora and fauna. By expanding the geographic and temporal scope of care, we become better informed about the decisions we make,

decisions that impact people in distant places and futures, thus increasing our collective chances to survive and thrive.

These nuggets of wisdom, present both in systems thinking and in creativity, are essential for addressing the many challenges we face in bringing about a sustainable future for people and planet. They provide meaning, expansive possibilities, and a view of the big picture, offering a profound sense of new possibilities. Sustainability is an art. And art helps us break through old ways of thinking and our sense of isolation to get to sustainable solutions together. ■

ADDITIONAL RESOURCES

[Video](#) by Colleen Bozuwa of an art-in-nature session led by Jay Mead along the Housatonic River, Connecticut, 2009.

[Video](#) by Colleen Bozuwa, documenting the creation of a giant puppetry performance led by Jay Mead at the Visão Futuro ecovillage, Brazil, 2006.

ART & PHOTO CREDITS

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Upper left: Michaelyn Bachhuber along Connecticut River, Vermont, October 2011

Upper right: Chris Page on Mt. Tamalpais, California, November 2010

Lower left: Nirmala Nair along Connecticut River, Vermont, October 2011

Lower right: Anonymous along Connecticut River, Vermont, October 2010

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Upper left: Alex Bauermeister and Maria Kogan with Maria's piece along Connecticut River, Vermont, October 2010

Upper right: Huma Beg along Connecticut River, Vermont, October 2011

Middle left: Maria Latumahina along Connecticut River, Vermont, October 2011

Middle right: Catharina (Any) Sulistyowati on Mt. Tamalpais, California, November 2010

Lower left: Michael Dupee and Carmen Negron-Dupee with her piece along Connecticut River, Vermont, October 2010

Lower right: Carmen Negron-Dupee along Connecticut River, Vermont, October 2010

Thank you to Edie Farwell, Carla Kimball, Clemens Kalischer, and Dominic Stucker for the art-in-nature photos.

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Commentary

ANDREA ATHANAS



Andrea Athanas

These are momentous times. After decades of consolidation around industrial models of production and consumption, we are now entering into a period of a radical rethinking about how we live on this Earth. The innovations that emerge over the next decade are likely to set us on a path that will take us through the 21st century. While the innovations of the 20th century were dominated by breakthroughs in industrial and technological thinking, the innovations of the 21st century will require breakthroughs in how we connect to our intuition and emotion.

The times ahead ask us to engage with complex, interconnected systems. Art is a thrilling way of tapping into our inner core and releasing insights that can't easily be accessed through a rational, logical process. As Dominic Stucker and Johanna Bozuwa describe in their article, through art, we can connect with ways of being that, in many western cultures and settings, are less nurtured.

Art also provides us with a way of understanding and processing change. When our family moved from Switzerland to Tanzania, our daughter was four. At the time, she was captivated by drawing marvelous princesses, a traditional figure in Swiss stories. Her world turned on its head when we moved, and for weeks she stopped drawing. She was sad. She missed her friends, her school, her home. But within a week of starting at her new school, she was drawing again . . . this time pictures of Maasai warriors dancing. Art was her way of coping with the changes in her life.

The times ahead require us to embrace the wisdom of all our cultures. Art provides us with a way of connecting across boundaries. Although language is an amazing way of communicating specific thoughts and ideas, it can be a barrier when it is not shared. Sometimes what we need first is a way to connect with each other at a deeper level. Art communicates across cultures. The Maasai dance, a colorful and energetic performance of jumping and chants, welcomes people from all walks of life into a *boma* (homestead). The meaning of the dance is clear, and the connection is made instinctively.

The times ahead call for innovation. Art helps us see things differently and shows us pathways that are not logical. The Art of Sustainability session opened my mind to see the possibilities for change. Stepping out of the dogma of logical progression and into a space of creating something from pieces of what was around me illuminated a vision of a future that I had never imagined.

Visioning, acting with compassion, and coping with change are strategies necessary for these challenging times. The creative process builds our strength in these areas in ways that are fun and inspiring – and, at times, it produces magic. ■

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Commentary

AMBA JAMIR

**Amba Jamir**

To communicate a personal vision is easier said than done. Before you can begin to articulate your vision, you have to understand and define just exactly what it is. This can be quite a challenge. Although I have been successful in achieving what I set out to do, one of the greatest difficulties for me has been clearly envisioning what I want to accomplish or be in life. I have always been a doer and thinker when it comes to helping others refine their visions or engage in strategic planning. But when it came to my own choices or strategies, I often felt paralyzed and confused by indecision.

My inability to have a clear, defined vision left me feeling scattered as I attempted to do different projects at the local, national, and international levels. As a result of juggling so many things, I lost the balance between my professional and personal lives. I realized that my inability to visualize or, more accurately, connect to a defined vision was causing me to compromise those things that mattered most as I spent too much of my time working to reach less important goals.

The Donella Meadows Leadership Fellows program was, in many ways, the catalyst I needed. The program broadened my understanding of myself and my relationship to the larger system. The various modules, especially the creative sessions, helped me appreciate the complexity of relationships. I began to fully understand that interdependence is of much greater value than independence – in social systems as in nature. My interactions with the other Fellows, their perceptions and experiences, and the cross-pollination of learning have all greatly influenced my thinking and acting.

More than any other activity, the Art of Sustainability session allowed me to let go of all my inhibitions and consciously connect with my inner self. I became aware of the source from which my thoughts and vision were emerging and of how to relate these to the larger system in which I co-exist. The sessions helped me rediscover the innocent, free, and childlike way of being inquisitive, observant, and sensitive to things around me, as well as within me. I became aware that we, as adults and as trained professionals, tend to complicate matters. We often miss the woods for the trees because we do not ask the simplest of questions such as “what if?” or “but why?” as Jay Mead invited us to do.

The sessions showed me that people ultimately relate to stories with which they can connect. Therefore, as a leader or a member of any community, it is not so much *what* I think or say, but *how* I make a connection to the people around me that matters. This realization has greatly influenced my way of thinking and working, at both the professional and the personal levels. ■

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Commentary

PHONCHAN (NEWHEY) KRAIWATNUTSORN



**Phonchan (Newey)
Kraiwatnutsorn**

As a person who draws on art as a path for self-realization and who works in the area of social entrepreneurship, I cannot agree more with the points emphasized in the article. For almost a decade, I have observed and supported the work of social innovators who offer solutions to our world's pressing problems. These passionate people start with an insight and then focus on the particular part of the system they want to engage. In order to create systematic change, they seek to generate tremendous creativity to change society's long-established patterns.

As director of Ashoka's Youth Venture Thailand program, a significant part of my work involves supporting the Millennial Generation in starting social ventures and gaining change-making experience. Young people come to me with their heads full of information but also concern that the world is deteriorating. I have come to realize that not until they engage in "heartwork" exercises, like those I learned from Jay Mead, can they connect with their hopes and dreams by creating projects that address their true passions.

To help young entrepreneurs make this connection, I adapted what I learned in Jay's amazing session and created a workshop called "Feeling Climate Change," in which youth walk around and observe our hot, polluted city of Bangkok. It is amazing to notice how much we overlook in daily life. We sometimes need a focused exercise to see our surroundings as a part of us and to see us as a part of our surroundings.

In the Youth Venture Program, we have found that the young people who go through these kinds of learning experiences start their change projects based on their real passions and feelings. In the long run, they are more likely to accomplish better and more sustainable outcomes than if they had solely applied a logical approach to try to solve a problem. Statistics and data are important but they aren't the key factors in motivating youth to take innovative and impactful actions.

Whereas in the past, art was my personal journey of self-discovery, I now see it as part of a group process. Our group work brings out a collective dream that can be turned into a shared vision and common goals, leading to action and collaboration for a better future. Visual art was already within my comfort zone, and Jay further inspired me with the process of how to use it to engage people. ■

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Reflections

The SoL Journal

on Knowledge, Learning, and Change

Volume 12, Number 2

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Reflections: The SoL Journal is published quarterly by the Society for Organizational Learning. Inquiries regarding subscriptions, address changes, back issues, reprints, and permission requests should be directed to:

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Agnieszka Rawa and Analia Souza

ISSN 1524-1734
EISSN 1536-0148

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Design & Production: DG Communications (NonprofitDesign.com)

