

**Progress Report**  
**April 2013-June 2013**  
**Grand Challenges for International Development**  
**U.S. Agency for International Development**  
**Sponsor Award No: AID-OAA-A-11-00003**

Meetings and workshops:

A workshop on systems thinking and a committee meeting were held at the NAS on April 10<sup>th</sup> and 11<sup>th</sup>. The systems workshop was mainly organized by committee members, Eric Rasmussen and Bernard Amadei, and led by an outside moderator, Deborah Laufer. The morning session involved several speakers from a variety of organizations that use systems analysis frequently, as well as a panel of USAID staff that have been attempting to incorporate systems thinking into their USAID work. The afternoon session was composed of an exercise, led by the moderator, that encouraged participants to consider the Grand Challenges program using systems thinking. The group practiced creating problem trees, using Grand Challenges projects as examples. The workshop closed with the group creating double causality-matrix with several of the Grand Challenges projects.

The committee meeting started with a free-flowing discussion with OST leadership about the future of the Grand Challenges program and other related programs within OST. The committee was given an overview of the Monitoring & Evaluation framework that is being developed by OST. Ku McMahan presented the outline of the Water Grand Challenge that will likely be launched in September, which led to a vibrant discussion with the committee making suggestions, asking questions about the topic areas, and encouraging the Water team to consider certain essential issues. The committee meeting closed with the committee and OST leadership discussing next steps.

The systems thinking workshop and committee meeting summaries are attached at the end of this document.

Termination of Committee:

After discussions between OST leadership and PGA leadership, it was decided that the committee had served its purpose and it was time to move past the committee structure. Emails were sent to the committee by the Director of Policy and Global Affairs at the National Academies, informing them of this decision. In addition, letters were sent from the President of the National Research Council, Ralph Cicerone, thanking the committee for their service.

### Next Phase of the Project:

OST leadership met with Rich Bissell, John Boright, and Liz Sharp to discuss the future of this project. Several options were discussed as to how the National Academies could help further OST's mission. The option that rose to the top was for NAS staff to help improve and refine the application, review, and feedback processes for OST initiatives. Many other agencies and organizations run programs similar to OST programs that require developing calls for applications, review processes to determine grantees, communication with applicants post-review, and distributing feedback to applicants who do not receive funding. OST would like to refine their processes based on the many years of experience of other organizations.

## Thursday April 11, 2013: Systems Thinking Workshop

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### Committee members attending:

Christine Moe  
Jane Guyer

Eric Rasmussen  
Bernard Amadei

### USAID Grand Challenges Staff attending:

Dave Ferguson – Deputy Chief, OST  
Lanakila McMahan - OST  
Dave Kahler – Office of Water

Tony Bloome – Office of Education  
Karen Clune – Office of Global Health

### NRC Staff attending:

Rich Bissell  
Elizabeth Sharp  
Pat Koshel

Robert Gasior  
John Boright  
Kathrin Humphrey (on phone)

### Speakers:

Dave Batker, Earth Economics  
Steve Peterson, Dartmouth College  
John L. Newman, World Bank  
Elisa Teipel, University of Colorado

Tjip Walker, USAID  
Mike Colby, USAID  
Robert Ricigliano, University of Wisconsin, Milwaukee

### Workshop Goals

- 1) Expanding understanding of systems thinking/approaches in the international development context
- 2) Gaining a better understanding of ongoing systems approaches in USAID
- 3) Exploring the links between individual Grand Challenges
- 4) Exploring possible synergies between individual Grand Challenges

### **Welcome and Introductions**

Rich Bissell provided general welcoming remarks followed by Eric Rasmussen who introduced the topic of the workshop: Systems Thinking in International Development. Bernard Amadei outlined the goals of the workshop focusing on exploring the links between individual Grand Challenges (double causality table) and what emerges from such interaction and how better synergies can be created between them.

### **USAID – Grand Challenges and OST Update**

Dave Ferguson provided welcoming remarks from USAID. He stressed that the committee has been important in supporting the evolution of finding new ways to tackle development problems by inviting broad audiences of innovators and solvers together to work on solving these problems. He highlighted that the interconnectedness of various activities within OST is starting to show, and followed with a brief update of each Grand Challenge (GC):

- **Saving Lives at Birth** - completing Round 3 grant call; plans on a Development Xchange in July 2013 in Washington, DC; Wendy Taylor & team built an accelerator approach within the GH Bureau focusing on how health innovations can be scaled – GC are at the core of this approach and they are looking at how the work of grantees can be branched out; accelerator approach also focused on exposing and supporting new ideas: identification->application->bringing to scale.
- **All Children Reading** is designing Round 2 call, which will be more focused on leveled learning materials in mother tongue and community involvement; this GC also highlights the internal

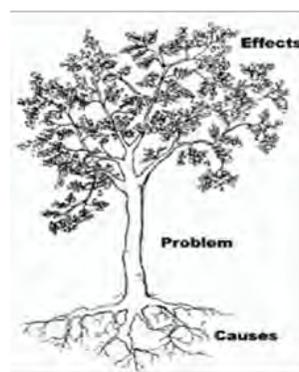
challenges within USAID due to the labor intensity required to support grantees and separate bureaus not having resources to address this.

- **Powering Agriculture** (focus on clean energy in agriculture) just completed Round 1 call and received over 475 applications which came as a surprise for this rather narrowly focused challenge. This shows that the GC program is getting better at reaching applicants, and this success will be parsed in order to duplicate it in other GC calls. Round 2 will likely focus on innovative financing and support from SIDA.
- **All Voices Count** was launched in Dec 2012 and took a new approach to managing a GC: the call, marketing and grant management is being outsourced to a group based in the Netherlands; done in part because of the labor challenge internally but also because the partners (DFID and SIDA) were not comfortable with a USG agency managing a program that is closely related to democracy work.
- **Water Scarcity Grand Challenge** will be launched later this year and is focused on scarcity, reuse, desalination and other topic areas are being considered; Swedish partner (SIDA) has committed \$30M; outreach to Dutch government as potential partner has been initiated and is encouraging.
- **Future Grand Challenge – Supporting Children in Adversity** is in response to a White House Action Plan ([Action Plan on Children in Adversity](#)) that came out last year. This GC will be approached in a very systems oriented way, focusing on
  - Build Strong Beginnings: Increase percentage of children surviving and reaching full developmental potential.
  - Put Family Care First: Reduce percentage of children living outside of family care.
  - Protect Children: Reduce percentage of girls and boys exposed to violence and exploitation.
 USAID will focus on family care aspect particularly of virtually invisible children (children outside of family care are virtually invisible – no data collected on them).
- **Overall Grand Challenge Program Update** - Phase I of the GC program is completed (proof of concept that GCs can be initiated and run). The program has been successful at attracting applications (400-600 per call); successful at attracting partners and leveraging funds (\$120M dollars committed from external sources and \$90M from within USAID). GC initiative has not yet proven that it will result in better development outcomes, this will be Phase II of the program. OST is hoping for more central allocation of resources (funds and labor), although experts from different bureaus will continue to be heavily involved in GC efforts. Administrator Shah has requested increased focus on innovation and acceleration. Progress has been made on M&E plans for overall GC initiative and individual GCs.

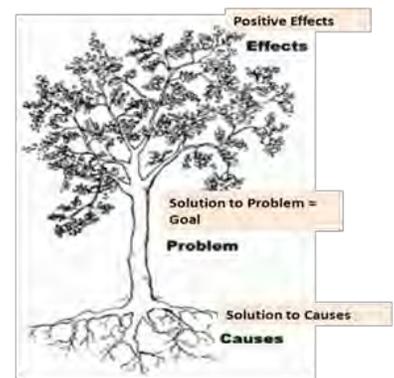
## Session 1: Introduction to Systems Thinking in International Development

This session provided an overview of systems dynamic approaches and a few select tools through case studies.

- **Bernard Amadei** started with an overview of systems thinking and highlighted that within each system there are sub-systems: Cross, inter and intra-interactions that lead to complexity. How can synergies be created between systems? When looking at systems it is important to identify consequences and effects – a good way to do that is to use a **problem tree**.



(a) Problem Tree



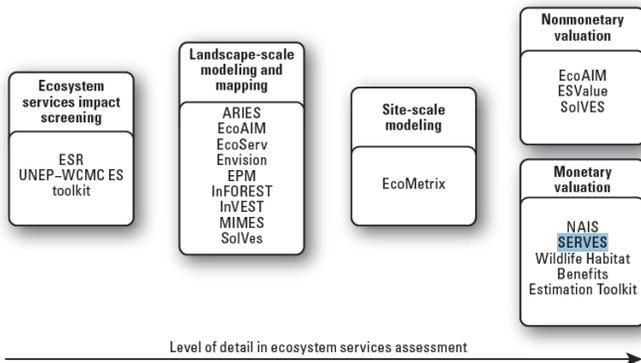
(b) Solution Tree

- Bernard further reintroduced the **double-causality matrix** which he adapted for the GC initiative and suggested that it be completed by workshop participants during the afternoon session.

Water	Impact of Water on All Children Reading	Impact of water on governance	Impact of water on empowering agriculture	Impact of water on Saving Lives at Birth
Impact of All Children Reading on Water	All Children Reading			
Impact of governance on water		Governance		
Impact of powering agriculture on water			Powering Agriculture	
Impact of Saving Lives at Birth on water				Saving Lives at Birth

- Dave Batker** showcased the importance of bringing economics into systems thinking when applying it to the GC. He reminded the group that the GCs outlined by USAID are not new but were grand challenges for a very long time in the U.S. Implementing one century's GC into another century requires attention to the transition of infrastructure: We are now faced with new goals and new measures, new policies, new tools. Challenges in the 20<sup>th</sup> century were about household-level or national-level problems. Now that we are thinking about challenges at a global scale we need to shift to a systems approach with multiples goals, multiple (and new) measure, tools and policies.

Batker classified these as: built capital (infrastructure), social capital (eg. governments and institutions), human capital (eg. health, education), and natural capital (eg. natural resources). While USAID and other actors have started doing this, it is important to continue to think about how science can be brought into GCs and other development approaches. How would you model different measures? How can we develop better funding



mechanism for Grand Challenges? Is there a provisioning aspect for each service? How can these aspects be identified? Who are beneficiaries? What are impairments? Batker explained that a systems approach can be very pragmatic and gave an example of how a separate flood district and drinking water district around Seattle merged into a more efficiently-managed watershed district.

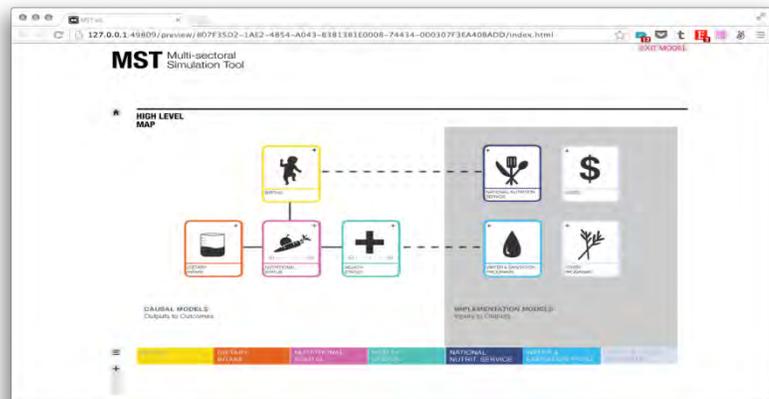
- Steve Peterson** started by reminding workshop participants of why systems thinking is critical:

<i>While systems are...</i>	<i>...our thinking processes often...</i>
Constantly changing	...are static, equilibrium oriented
Tightly coupled/interdependent	...draw very narrow boundaries around issues and problems
Rich in feedback	...treat drivers of performance as external and independent
Nonlinear	...assume linear responses

History dependent	...neglect to consider path dependence, accumulations, and delays
Adaptive and evolving	...fail to pay sufficient attention to the sources of unintended consequences

He further suggested looking at the dynamics in a system and how things change over time, looking at the internal structure of system, and understanding what the drivers of the system are. In this analysis, stocks and flows important are important (example of coffee in cup): What's accumulating, what's flowing? And he emphasized thinking in terms of feedback loops: A causes B, which influences C, etc. Steve then showed how the tool **STELLA** can be used by applying it to a case study of Youth Violence in Boston. He showed how you can change various parameters in the model and examine the effect on specific outcomes. Besides STELLA, he also pointed out other software that could be used such as **iThink**, **Vensim**, **PowerSim**.

- **John Newman** suggested that a systems approach can be used when dealing with development problems of two different types: very high level task (for example new global targets) and problems for which more specific objectives have been defined but achieving these objectives is a complex undertaking such as USAID's GCs. John suggested applying a **Multi-Sectoral Simulation Tool (MST)** in which both causal models and implementation models are developed in some depth, and thus the model captures key dynamics and feedback. Building a MST model helps show goals and connections, helps understand what drives results, reveals unexpected but critical questions, and identifies knowledge gaps and activities that should be monitored. A MST model can also serve as a tool to communicate about a system. Based on his experience of applying systems dynamics to his work at the World Bank, John made the following recommendations to USAID:



- Do not call “system dynamics” by its name but call it a “tool” and relate it to what’s already being done to the problem on hand.
  - Emphasize the structure (how can tools of System Dynamics help manage the complexity):
    - Can see both the forest and the trees;
    - Different stakeholders can see where their activities fit into the larger picture
  - Use modules to manage the overall model.
  - Consider what it would take institutionally to make use of the tool in planning.
  - Be willing to subject the approach to an impact evaluation.
- **Elisa Teipel** provided USAID with another example of how to use **STELLA** by introducing her work on “Waste to Wealth: Material Recovery Systems-Based Approach to Sustainable Community Development” that involves recycling coconut waste into composite materials.



- For aid to be truly effective we need to shift responsibility and power from the donors into the hands of people who have to own it in the long-term (ie. sustainability). Need to involve stakeholders much more.
- Several staff members /groups are trying to change the thinking around systems approaches and promote the idea that systems have to be owned by the beneficiaries in order to be truly successful

#### **Opportunities at USAID for pilot(s) to go alongside more traditional model for assessing aid**

- Certain country development cooperation strategies look promising. An early copy of a development plan from the Mission in the Congo is very forward leaning: It is looking at how one can bring different sectors together to address the Mission's strategic goals. The hope is to find more of these examples and build on them.

#### **Learning curve for adopting a more systems-based approaching an organization such as USAID**

- Huge difference in learning curve for an individual and that of an organization. Individually, you can run seminars, train the trainers, etc. Actually working these approaches into an organization's practices is much harder to achieve.
  - Helpful to think of systems practice as an evolution within organization over 5+ years. Most important piece is what needs to happen in year 1 and 2.

#### **Discussion on Integrating a Systems Approach**

- The GCs are helpful for getting people to think about a problem, but how do you tackle a systems problem? There is a tension between breaking down a problem into pieces so that you can solve them, and the risk of leaving something behind.
- The most useful activity is making the map. It forces you to document all your reasonings and assumptions.
- *Counterpoint:* Although there seems to be value in making a map and thinking about the system as a whole, you won't really know how it fits all together until you get in there and start working. Might waste time thinking about system when you should be getting in there and starting work.
  - *Response:* Get participants to make the map, instead of experts outside the environment. Often communities have the best whole picture of the environment. Even if illiterate, members of the community can explain in great detail the interactions of the system.
  - Fail smart and adapt fast. If something doesn't work as you expected respond quickly and minimize damage. Thinking ahead about the system helps you do this.
- Is USAID an innovative environment? Can we *build the capacity to innovate* – rather than simply promoting a collection of innovations? Can USAID become an enabling environment for innovation? Given limited resources and expansive vision, how do we find the best places for the flashlight effect of systems thinking in the Grand Challenges program?
  - *Response:* There are several ways in which systems thinking could be integrated into the GC endeavor: 1) develop an individual GC centered around systems thinking; 2) write RFPs to promote systems approach responses; 3) use systems approach as a judging criteria in choosing winners; 4) require that M&E plan contain systems component; 5) educate grant recipients that they need to (and how to) integrate systems thinking into the implementation and reporting; 6) choice of GC themes – themes that can be synergistically linked together.
  - Integrate Missions more deeply in effort to include systems approaches. That way it's not just HQ pushing this.
  - Possibly use term, "integrative and participatory approach" instead of "systems thinking". Less foreign and threatening.

- This should be seen as a multi-year process.
- The five silos (the separate GCs) are well defined and mapped. We want to encourage looking at the possible horizontal connections between each. No additional cost, just a matter of rephrasing what's expected from applications.
- The Grand Challenges Initiative is in a position to develop a culture of systems thinking from the beginning: Either you integrate it now or it will likely not ever happen.
- Reminder that USAID is not only player in the GC arena. USAID is hoping to (and will need to) use other partners to help in implementing an integrated approach.
- FEMA is doing more and more eco-mapping. Interest from FEMA in working together with USAID to see how their internal work on systems approach is related to what USAID is doing and how both agencies could possibly benefit.

#### **Closing Thoughts:**

- GC program (individual GCs and initiative as a whole) will need to determine where the leverage points are. Encouraged to think about:
  - What will ripple effects be?
  - How will your project relate to overall context of development problem – other key players
  - Need to engage complexity both internally (w/n USAID) and externally (bigger world)
  - Need to consider an adaptive management approach
- Going through the process of diagramming the system can shed light on where the leverage points might be.
- Emphasize importance of involving stakeholders in order for these efforts to be successful
  - Ask them, “What are we asking you to do that makes it harder for you to do what we are asking you to do?”. Important to clarify expectations.
- The GC initiative has tried, in less formal ways, to integrate systems approaches. For example, in Saving Lives at Birth, in order to get a large grant you need to propose an approach that integrates three different areas (science and technology; system delivery; and demand) and demonstrate you are thinking in an integrative way.
- The committee understands that the GCs were written to address a specific need, although initially the initiative was seen as a strategic portfolio. Possibly a good time to revisit thinking about the initiative as whole and strategically address integrating systems thinking into the larger effort. Develop future GCs that leverage connection better and create synergy.

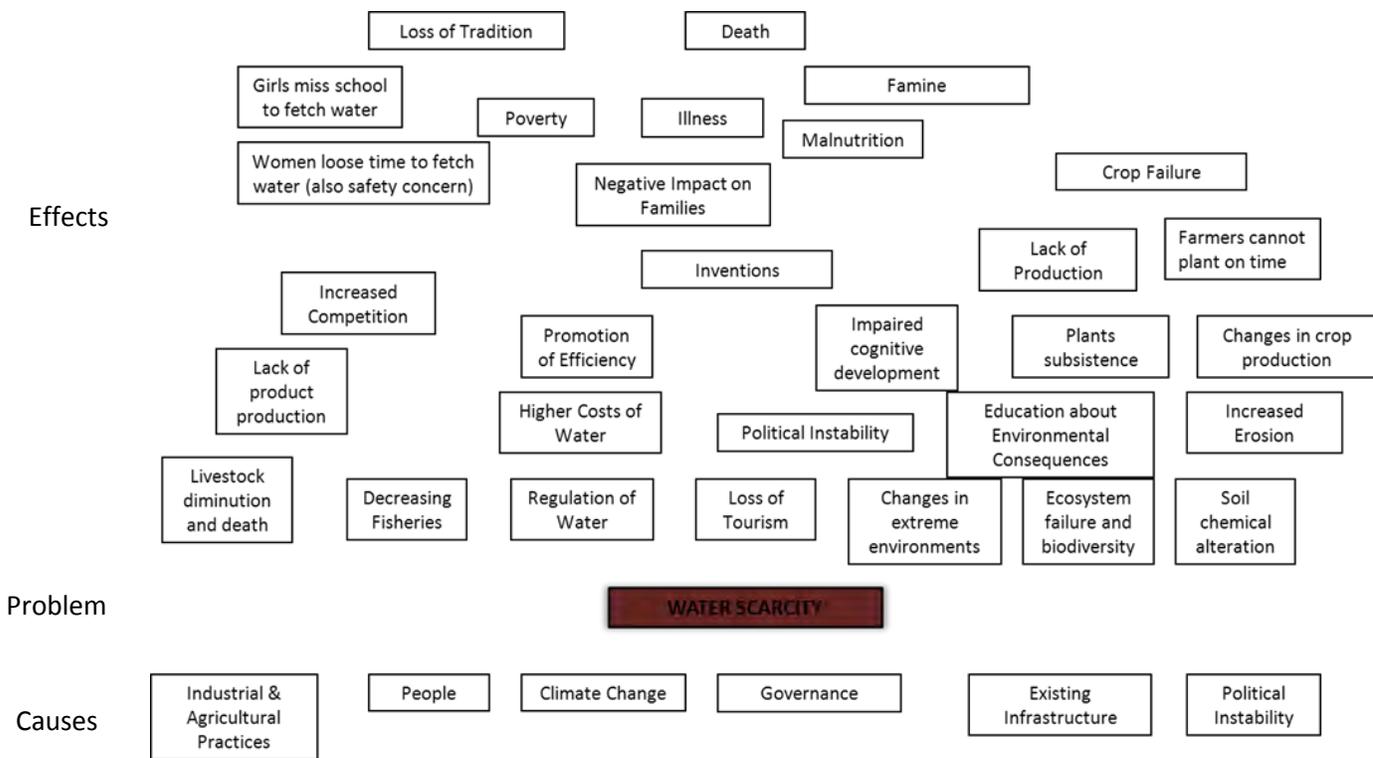
### Afternoon Session

Goals of Session: Demonstrate how to create problem and solution trees. Explore linkages/interplays between separate GCs.

The new Water Scarcity GC was used as an example for building a problem tree and how to begin to explore how each GC relates to the other GCs. This exercise thus introduced a methodology that USAID could apply when developing future Grand Challenges.

- Break-out groups developed a **problem tree** by focusing on common themes, root causes, and consequences of water scarcity. While some levels of details need to be thought about at a later stage, this exercise helped create a first map. Break-out groups identified the following overarching themes in terms of root causes:

- People
- Existing Infrastructure
- Industrial & agricultural practices
- Governance
- Political Instability
- Climate Change



- The break-out groups came together as a large group again and focused on identifying linkages to other Grand Challenges and worked on the following **double-causality matrix**:

Saving Lives At Birth	Impact of Saving Lives at Birth on Water Scarcity	Impact of Saving Lives at Birth on All Children Reading	Impact of Saving Lives at Birth on Making All Voices Count	Impact of Saving Lives at Birth on Powering Agriculture
Impact of Water Scarcity on Saving Lives At Birth *Water based sanitation *Stunting *Increase immigration/pop displacement – differences in tech/health delivery mechanisms *Poor hygiene *dec. in hospital infrastructure b/c of water scarcity > diseases *dehydration in mothers = miscarriages *lack of evaporative cooling > heat stress *consequences on family structure *abandonment of newborn *enriched milk for newborns	Water Scarcity	Impact of Water Scarcity on ACR -Illness/malnutrition impaired cog. development -Increase crime -school absenteeism -reading/education about water scarcity -resource competition sufficiency -political unrest -migration disrupt edu system -malnutrition affects cognition -child labor	Impact of Water Scarcity on MAVC * Power concentration * Breakdown of local level mgt * Lessen female voices * Border crossings * Population movement * Political unrest * change in media coverage * Change in activism levels * Redistricting of political districts * Change in politicians & election results * Change in upstream/downstream community relations * Change in relations between national/state/local governments - amplifies/oscillations * Regulation of use of water * Utility structure - voices included	Impact of Water Scarcity on Powering Ag *Decrease in options of biofuels that require water *wetlands and agriculture *shifting agro to perennials to conserve water *water scarcity>drylands>brush fires>
Impact of All Children Reading on Saving Lives at Birth		All Children Reading		
Impact of Making All Voices Count on Saving Lives at Birth			Making All Voices Count	
Impact of Powering Agriculture on Saving Lives at Birth				Powering Agriculture

### Discussion Based on Exercise

- These exercises seem most helpful for new, start-up GCs. But how can more developed GCs use this sort of approach moving forward?
  - *Response:* Is there a way to see how many proposals you have received are cross-cutting across multiple GCs and have more of a systems approach? This could help you hone your message in subsequent RFPs.
- One promising idea would be to develop a meta-Grand Challenge. Not introduce a new topic area, but instead ask applicants to address several GCs using a systems approach.
  - The committee is very enthusiastic about this idea.
  - Care would need to be taken in writing an RFP that would foster synergistic applications
- All Children Reading is considering focusing Round 2 RFP on disability and lowering the cost of technologies to help those with disabilities.
  - This topic area could naturally synergize with several GCs and tools developed for this challenge could be utilized across disciplines
  - Thinking about what data to collect on this and how it could be used for empowerment and decision-making.
- Improved strategic communications about development could be another potential product of taking systems approach

### Additional Discussion Topics

- How are all the different Grand Challenges (NAE, White House, Canada, Gates, etc.) working or not working together to ensure efforts are coordinated and not duplicated? What can be done better?
  - *Response:* USAID involved with Gates and Canada for SL@B, in order to define a Grand Challenge model and prove it could work.
    - Based on open, transparent RFP, merit-based judging, other basic principles that “define” GC
  - Too many good proposals. What do you do with the good ideas that were not funded? At last stage of competition, all “finalists” are brought together with sponsors and potential funders for a Development Exchange
    - Hope is that other sponsors might fund their ideas, or that networking among finalists could lead to improved proposal for next call.
  - All applications are public. Try to make everything as public as possible so it is simpler to see where possible duplication of effort could be occurring
  - One possible idea would to have an Grand Challenge “Market Place” – giant networking event and all GC finalists could have booths. Foundations, private sector could pick and choose which GC ideas they would like to engage with.
- For sustainability and scale-up, local institutions must be engaged and involved
  - Suggestion was made that an alum network of GC winners should be encouraged. Successful grantees could come back and help with sustainability efforts.
  - SL@B is currently funding only existing innovations. Innovative ideas that needed more development can receive incubator award = package of assistance such as proposal writing or networking workshops .

- A good sustainability resource is the Resilience Alliance – espouses the idea that some connections are easier to make and these may help keep the synergies from becoming so complex that nothing happens.
- GC Initiative should also think about soft systems methodology = approach for a groups that look at systems early. Can help answer: what are implications for evaluation and learning when you embrace complexity?

### Introduction of LAUNCH Initiative

- LAUNCH is a global initiative to identify and support innovative work poised to contribute to a sustainable future and accelerate solutions to meet urgent challenges facing our society (<http://www.launch.org/about>)
  - NASA, USAID, Department of State, and NIKE are founding partners
  - Brings together innovators with some of the greatest minds in the world on a particular sustainability topic.
  - There have been 4 different cycles during which 10 innovators met with 40 experts from different disciplines. The innovators then go through the LAUNCH Accelerator – 6 month program to increase potential for idea to lead to impact.
  - Nike is working on an approach to reach zero-waste.
    - How to decouple production from natural resources and extractive human capital?
    - Systems approach (very complicated system around manufacturing).

The workshop ended with a gathering of feedback on the utility of the day and some closing thoughts.

- Discussion about geographic opportunities for GCs to collaborate. Mapping GC and PEER program beneficiaries. This could be a way to better engage the Missions.
- When mapping complex systems, is there an effective way to identify key leverage points that should be the focus of problem-solving efforts?
- Intuition is an important part of understanding systems –can not rely only on quantitative methods.

During the working dinner, John Boright discussed the recent meeting of the InterAcademy Panel (IAP) on Grand Challenges for Development and Poverty Eradication, held in Rio de Janeiro, Brazil. The global network of 108 academies meets every 3 years for a business meeting, and for a substantive conference on a topic. Participants at this meeting emphasized the need for scientific literacy, as a tool for addressing many major development challenges and a potential common grand challenge for all academies. John also mentioned the expanded role played by young scientists in the IAP, with support from the Global Young Academy (GYA).

Calestous Juma talked very briefly about the Global Grand Challenges Summit, which was held with the sponsorship of the NAE, the Royal Society of Engineering and the Chinese Engineering Academy. Calestous, a member of the Grand Challenges standing committee, was one of the key note speakers. The summit was designed to provide a global platform for the development of international frameworks, tools and collaborative activities to address these challenges.

## Friday April 12, 2013: 6<sup>th</sup> Meeting of the Committee on GCs in International Development

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### Committee members attending:

Christine Moe

Jane Guyer

Eric Rasmussen

Bernard Amadei

### USAID Grand Challenges Staff attending:

Dave Ferguson – Deputy Chief, OST

Lanakila McMahan - OST

Will Schmitt – OST

Dave Kahler – Office of Water

Chris Holmes – Office of Water

### NRC Staff attending:

Rich Bissell

Elizabeth Sharp

Pat Koshel

Robert Gasior

John Boright

Kathrin Humphrey (on phone)

Jeff Jacobs - DELS

### Debrief from Workshop

Eric Rasmussen quickly summarized up what was accomplished in the previous day's workshop

- FEMA wants to work with USAID and Academies to generate ideas
  - Tricky bringing together FEMA and OFDA/USAID but conversation on collaboration on GCs could be initiated.
- Initial look at tools, at process, and at results
- Identified a couple of systems champions within USAID
- Water challenge had some input from the problem tree session
- Idea floated of a meta-Grand Challenge (systems approach to all existing GCs)
- Idea of encouraging cross-cutting challenges (with disability as an example of “inclusive development” goal)
- Recognition of the validity of work done in industrial design (there are techniques that have not yet been folded into systems thinking or work with USAID). Opportunities for other fields to be involved.

### USAID Updates on Grand Challenges Initiative

#### Mission Outreach:

- There are a number of large Missions (for example India & Indonesia) with rather large S&T domains.
- Missions have been told that one of three development objectives should focus on S&T.
- HQ is making sure Missions are aware of GC and trying to identify grantees through Missions.
  - Some engagement with Missions in countries of grantees but not great involvement from Mission with regards to managing grantees.
- Engaging Missions in pushing Calls for Applications out through their network.
- Pushing missions to develop better networks of potential applicants and in-country scientists and innovators that aren't expat international development people
  - Like the Academy's approach of finding scientific networks within the country.
- Missions are increasingly helpful in outreach but not much else.
- *Question from group:* Is it possible to recognize Missions who are most engaged? Can OST publicly recognize mission directors that best engage with GCs?

### Private Sector Outreach

- Thus far, GCs have not been very successful in attracting the private sector (except for Duke Energy for powering agriculture because of personal involvement of CEO).
- Companies unwilling to allocate \$1M to a cause such as All Children Reading without having their material involved/pushed.
- In other challenge areas, certain partners didn't want to muddy water with add'l sponsors at the beginning (especially in touchy areas such as democracy). Agreed to revisit after a year, but the biggest publicity opportunity for a private sponsor is during the launch.
- USAID is interested in suggestions about who to talk to in the private sector that would be appropriate to be talked to?
- *Response from group:*
  - Grainger could possibly be interested. Whole Foods has conservative leadership looking for opportunities of using CSR. Ikea. REI? Gaming companies? Others. Eric will follow up with Dave about possibilities
  - Proposed GC on science literacy. This might lead to opportunities for corporate involvement and also could cut across every GC. Would want to involve USAID Education Office in this.

### Details on Accelerator/Scale-up Processes

- Lots of ideas out there, but no sustained plan yet. Lots of focus on facilitating progress not necessarily through funding, but through other things such as networking.
- Labor constraint is a big issue within USAID. Certain things just can't be outsourced.
- *Questions from group:* what happened to the first three transition grants? Is there a point where an assessment is made as to whether scale-up needs more political will, more etc. ?
- *Response:* We try to do that constantly. We ask them to show their path to scale. In order to get transition funds, the applicant has to bring data to the table and show they have thought of the potential challenges, obstacles.
- Generating compelling effectiveness data is key in establishing sustainability (ie. getting line items in national budgets)

### Introduction of S&T prizes

- Difficult to learn what's going on in all Missions around the world. HQ is not allowed to send data call out to all Missions.
- Established an S&T prize: Anyone that can show data on a program implemented by USAID mission is eligible to be nominated for the prize. Looking for best examples of S&T that influence USAID programming
- Prize is up to \$200K depending on program
- Needs to be submitted by USAID staff - although most ideas that come from USAID staffers are implemented by outside organizations
- Received over 80 applications. 35 on shortlist. Working to get down to 20 which will be given to a senior panel which picks ten. So far proposals included:
  - Environmental programs using satellite data (GIS, small ICT components etc).
  - Health programs with device innovations (applications related to SL@B grantees, disease prevention).
  - A few related to agriculture work (seed intervention, GMO type).
- Goal is to make all data public. To show the S&T strengths of USAID. And encourage more focus on S&T.

- Leadership wants a physical catalogue of innovations you can hold, look at, and flip through that is device and product oriented.

#### Update on development of M&E guidelines/requirements

Ku McMahan gave a presentation on M&E efforts within OST and the Grand Challenges initiative (attached to meeting materials)

- OST is working with other parts of agency involved in GCs to develop overarching M&E framework as well as specific M&E guidelines for each individual GC.
- The overall GC process as they have envisioned it (and with M&E's role in each step) would be:
  - Define critical barriers
    - Develop problem statement based on diverse data
    - Use sound analysis of research data to define critical barrier
  - Engage and mobilize global community
    - Partners, involved community, networks
    - Innovation sourced from diverse group of solvers
  - Implement
    - Measuring how each GC does it differently
    - What is development impact?
  - Scale
    - Select best technologies, incubate, improve capacity
    - How many of them are moving towards adoption?
- Success will be measured by 4 pillars
  - Are we taking appropriate risks?
  - Is it really innovative?
  - Are solutions being adopted?
  - Is GC model effective?
- By September all of this will be included in grant call etc.
- Grantees will have annual performance evaluations
- At GC level, there will be mid-term evaluations. Impact evaluation including grantees, sponsors, and internal GC owners. Final evaluation will include USAID and external evaluator.
- More frequent reporting might be beneficial for improved learning at organizational level.
- Hard balance between wanting more information and not wanting it to be a hindrance to report
  - Want to automate this process as much as possible. For example, sensor technology could be used to collect real-time operational information.

#### **Introduction to and Brainstorming on Water Scarcity Grand Challenge**

Ku McMahan and Dave Kahler gave a presentation on the current thinking of the Water Scarcity Grand Challenge (included in meeting materials) and then asked the group for thoughts and suggestions.

#### Presentation of Water Scarcity GC

- GC will be focused on identifying new water sources as well as increasing water efficiency (reducing demand)
  - Increasing quantity as well as quality of water
- To address **identifying new water sources**, the proposed focus topic areas are:
  - Desalination (with focus on brackish water)
  - Innovative Water Capture

- Remote Sensing of Water Sources – this topic area may be dropped from the GC
- To address **increasing water efficiency**, the proposed focus topic areas are:
  - ~~Energy efficient movement of water~~ – this focus area has been dropped from the GC
  - Agricultural Water Re-use
  - Industrial Water Re-use

#### Discussion/Brainstorming of Water Scarcity GC

- Energy efficient movement was deleted because this GC will focus on solutions off the government grid. Government water utilities may be challenging to work with. GC is not looking for management projects, looking for S&T projects
- The group argued there might be a role for improved management technologies.
- The GC will not focus on just drinking water – will also look at water for agriculture
  - Think of it as a water challenge for food security – could include innovations for crops, fisheries, etc.
  - Based on these criteria, there is no target measure for how much water each innovation must provide
- GC will also look at how water quality and quantity successes apply to other areas (climate change, etc.) – water actually is a zero-sum situation.
- It will be critical to think about politics/water rights when considering applications
  - Great innovation/idea, but person might not have water rights
- This GC is not designed for capacity building, it is designed for innovation. The rest of USAID works on capacity building and systematic solutions.
- Group encourages USAID to look at case studies. Both success and failure examples
  - Jordan – law against using waste water for irrigating olive trees
  - CA – successful and unsuccessful attempts to sell public on re-using waste water
- It is great timing for this GC to come out, since USAID will be making important decisions on how to spend development money soon.
- Proposing a prize (in addition to the Water GC) that will focus on desalination of brackish water. This is an under-developed area of technology. It involves less intensive processes (ie. less expensive), and there is a lot less industry involvement and innovation. This would address a big need in Bangladesh and Indonesia and other populations in coastal areas affected by saltwater intrusion.
- The group encouraged the GC to think about salt-resistant crops as a possible innovation for saltwater intrusion
  - Suggest salinity lab at UC Riverside
  - Ben-Gurion University in Israel
- USAID looking for advice from committee on developing metrics for sustainability, scalability, and suitability
  - Suggestion of Jim Milletich at Univ. of Florida for sustainability metrics
- USAID also asking for advice on what aspects of sensor technology should be component of RFA.
- The group urged USAID to specify some metrics in the RFA

#### **Possible Next steps for Committee:**

- Read M&E framework ideas and GC- specific M&E guidelines and give input/suggestions on what can be measured and how it can be measured – ie. how to measure success

- Possibly develop a document to push cross-cutting issues - possibly an analysis of how disability crosscuts existing GCs and how a GC might be structured around it.
- Potentially have call for further discussions on the water scarcity Grand Challenge
  - If so, USAID would provide a set of questions/issues that they would like to discuss.
- Develop a list of recent NAS/IOM reports relevant to Grand Challenges that should be circulated