Katoomba XVIII: Forests, Water, and People
Beijing, China – May 2013

Participant Recommendations for Catalyzing Innovation for Sustainable Watersheds

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Policymakers, natural resource managers, researchers, and expert practitioners from 13 Chinese provinces and 15 countries recently convened at *Katoomba XVIII: Forests, Water, and People* in Beijing to advance investments in natural infrastructure for water security in an urbanizing world. The setting reflected China's global leadership in eco-compensation as well as regional opportunities to improve the efficiency and effectiveness of investments in watershed services.

Over the four-day meeting, participants presented and discussed innovative approaches from China and around the world for addressing water risk through investments in natural infrastructure. Sessions focused on innovative financing for natural infrastructure, new approaches by governments and business, managing the water-energy-food-nexus, and urban partnerships for watershed protection. Participants also delved into ongoing investments in Beijing's watershed, focusing on efforts led by the neighboring Beijing Municipality and Hebei Province. Drawing on insights and observations during the meeting as well as experience from around the world, meeting participants developed recommendations for action for three audiences (see Figure 1). Recommendations for the global community of practice are the focus of this document; recommendations for the regional policy makers and pilot project developers may also be accessed at http://www.forest-trends.org/katoombachina.php.

Figure 1. Three nested levels of action for strengthening investments in watershed services

Changing the Water Paradigm – Moving Natural Infrastructure into the Mainstream of Water Management

Meeting participants recognized the enormous opportunity to integrate green and natural infrastructure into conventional water resource management, and they articulated a vision of mainstreaming consideration of nature-based alternatives into integrated water resources management processes by highlighting the social, economic, hydrological, and ecological benefits of investments in watershed services (IWS).

To realize this vision, participants recommended that the global community of practice, including the Katoomba Group:

- Fully engage water resource managers and water infrastructure developers to move toward incorporating natural infrastructure solutions as best practice;
- Develop data and knowledge sharing networks to advance scientific understanding of natural infrastructure solutions;
- Learn from and work with the engineering community to integrate natural infrastructure approaches into engineering disciplines; and
- Ensure creative, effective communication of the value and impact of IWS.

Fully engage water resource managers and infrastructure developers to move toward incorporating natural infrastructure solutions as best practice

- **Actively engage networks of water resources professionals** (e.g., International Water Resource Association, International Water Association, American Water Works Association) to effectively generate and disseminate knowledge and information about IWS.
- **Advance the case for requirements for full consideration of complementary and alternative green infrastructure in financing decisions**, particularly among institutions like the International Finance Corporation, World Bank, and Equator Banks.
- **Engage with the International Association for Impact Assessment** to develop guidance for how explicit consideration of natural infrastructure alternatives could be included in Environmental Impact Assessments as best practice.
- **Develop a demonstration of best practice for mainstreaming nature-based solutions in integrated watershed resource management** in partnership with a major development bank, illustrating in particular how IWS can complement or replace conventional gray infrastructure while providing measurable social, environmental, and economic co-benefits.

Develop data and knowledge sharing networks to advance scientific understanding of natural infrastructure solutions

- **Ensure the monitoring of outcomes** – especially hydrological and social. A data-driven understanding of the impact of management interventions on water quality and quantity outcomes can be invaluable for changing policy and generating new sources of finance. Programs should use cost-effective technologies and monitoring frameworks that allow for attribution of impacts to the program itself, balancing funding needed for interventions with monitoring, evaluation, and communication of results.
- **Develop robust research hubs to support watershed interventions** and to attract graduate students, university faculty, and technically-trained professionals to design, implement, and monitor technically-sophisticated green infrastructure solutions. These centers could provide a focal point for developing the sound science (hydrological and social) necessary for successful watershed interventions. Models of such research centers exist

in South Africa and Rwanda, and could be supported by partnerships with regional universities and institutions such as UNEP, as well as international aid agencies that support professional exchanges. The Forest Trends IWS demonstration projects supported by the Swiss Agency for Development and Cooperation in Ghana, Bolivia, Peru, Mexico, Brazil, and China could become the seeds of regional research hubs in those countries.

- **Link IWS programs and research hubs to job training** to attract and retain young people to a range of jobs supporting a new sector of the green economy. These centers can help to engage local youth in the green 'business' of ecological restoration and preservation – helping to stem the tide of urban migration that has begun to hollow out many rural villages around the world and setting them up for well-paying jobs designing and implementing watershed interventions.
- **Develop international research networks** to promote the exchange of data, knowledge, and experience across IWS programs and research hubs. To ensure comparability, these networks could provide guidance on cost-effective data collection methods and standard reporting formats. In addition to accelerating the development of best practices, these networks can help to elevate local efforts and create international champions of local leaders, raising local enthusiasm and broadening the impact of local efforts as part of a global movement to define a new sector of the green economy.

Learn from and work with the engineering community to integrate natural infrastructure approaches into engineering disciplines

- **Engage creative and socially active groups and individuals within the engineering community**, like Engineers without Borders (EWB), to cultivate IWS champions from within the engineering community who can lend their expertise, perspective, and networks to the goal of mainstreaming natural infrastructure in the engineering discipline.
- **Work with civil engineers and engineering schools to design a curriculum on natural and green infrastructure**. This curriculum could link to international research centers and applications of natural infrastructure solutions in the field.
- **Build relationships with engineering firms active in the water sector** to learn from them and collaborate on developing practical approaches for using natural infrastructure to complement gray infrastructure; develop champions for such approaches in leading engineering firms.
- **Recruit leading engineering firms and professional societies to participate in the Katoomba Group,** and ensure that the next Katoomba meeting includes a session specifically on integrating green/natural and gray infrastructure for water.

Ensure creative, effective communication of the value and impact of IWS

- **Consider context when communicating** the value of IWS. While numbers may drive decision-making by some groups, cultural or ethical considerations may work better for others. Social norms in a particular place may favor communication through a particular medium or set of actors.
- **Engage visual thinkers** and science communicators in IWS projects to more effectively communicate watershed issues, benefits from natural infrastructure, and strategies or solutions.
- **Seek new venues for communicating**. Rather than communicating through traditional media, conferences, and publications that reach audiences that are already familiar with the concept of natural infrastructure, consider different types of venues to expand the dialogue – whether to new audiences (e.g., corporations, architects), or to traditional audiences, but in novel formats (e.g., a "world's fair" to explore possibilities in the new green economy).