2010 East Asia Science and Security Meeting

September 22-24
Beijing China
“East Asian Ecological Security as absolute determinant for stability, security and peace: Understanding the principles and mechanism of Ecosystem Functionality, Ecosystem Restoration and Restoration Agriculture”

Kosima Weber Liu,
Environmental Education Media Project
Security Through Ecological Security

• What means peace, is it the absence of war or a vision for a certain way of life?

• Creating peace needs the understanding that all sides must take action and change

• Creating and maintaining peace must be based on a shared vision which will create the basis for collaboration and trust
Shifting Perspectives

- Determining where currently does the largest security threat come from
- Understanding Global Climate Change
- Dealing with Extreme Weather Patterns and Catastrophes
- Building Resilient Healthy Systems
A shared vision of the Korean Peninsula

• ...

...
Where does our wealth come from?

- Todays 9 billion people only have half the earths vegetation cover.
- Release of carbon from burning fossil fuels also uses oxygen.
- Plants are masters of keeping the equilibrium
- Growing back the earths vegetation cover is the one and foremost mechanism to rebuild reliance of the earths life systems
Oxygen

• Oxygen levels 10,000 years ago were at about 25%

• Oxygen levels today are averaging 20% and as low as 15% in some urban areas

• Oxygen in the upper waters of the North Pacific, an area that accounts for about 40 percent of the world’s oceans, decreased as much as 15 percent in a little less than two decades between the early 1980s and late 1990s.
The generation and maintenance of all our life processes are supported by four basic components:

- carbohydrates
- water
- proteins
- energy

\[ \text{oxygen + carbon + hydrogen + nitrogen} = \text{protein} \]
\[ \text{oxygen + hydrogen + carbon} = \text{carbohydrates} \]
\[ \text{oxygen + hydrogen} = \text{water} \]
\[ \text{oxygen + carbohydrates} = \text{energy} \]
It is possible to rehabilitate large-scale degraded ecosystems. It is important to establish the baseline.
* Biodiversity
* Biomass
* Accumulated Organic Matter
* Photosynthesis

* Nutrient Cycling

* Infiltration & Retention of Rainfall
Human Activity Without Ecological Understanding leads to Ecosystem Collapse
The United States

Civilian Conservation Corps
1933 - 1942
The CCC planted between 3 and 5 billion trees

The CCC helped build 700 Parks
Settled Agriculture approx. 10,000 years ago

Pristine

Fundamentally Degraded

Ecosystem Collapse

Degree of Degradation

Time
Settled Agriculture approx. 10,000 years ago

Pristine

Fundamentally Degraded

Paradigm Shift

Ecosystem Collapse

Degree of Degradation

Time
Findings from “Earth’s Hope”

“It is possible to rehabilitate large-scale degraded ecosystems including returning ecosystem function that had been lost over large areas.”
What do we know about:

* the atmosphere

* the hydrological cycle

* soil fertility and productivity

Where do these functions and processes come from?
• Human beings have physically disrupted ecosystem function over vast areas. In order to achieve equilibrium and sustainability we must physically restore them.
• Unless we intervene to change the trajectory of these trends then we are committed to increasingly catastrophic outcomes.
It is possible to rehabilitate large-scale damaged ecosystems including restoring ecosystem function that was lost over large areas and long-time horizons.
• Biodiversity
• Biomass
• Carbon Capture
• Soil Moisture
• Soil Fertility
• Infiltration and Retention of Rainfall
• Temperature Differentials
• Increases in Carbon Capture
• Reduction in Temperature
• Increases in Hydrological Function
• Increases in Fertility & Productivity
• Moderation of Extreme Weather Events
BY RESTORING ECOSYSTEM FUNCTION WE CAN ADDRESS:

- Poverty
- Disparity
- Food Insecurity
- Desertification
- Climate Change
- Temperature Differentials
BY RESTORING ECOSYSTEM FUNCTION WE CAN ADDRESS:

• Unchecked Population Growth
• Right Historical Wrongs
• Ensure Women’s Rights
• Engage those most vulnerable to being recruited by terrorists
• Migration
• Conflict
• Designating Ecological Land and allowing nature to determine the species can ensure that biodiversity survives into future generations.
• In highly degraded land it is possible to increase productivity by decreasing the area in cultivation because ecological land provides increased soil moisture and fertility.
• Revaluing ecosystem function will immediately end poverty for 100's of millions of the poorest people in the world. We need to do this not simply to help them but to help ourselves.
This seems to be the knowledge that determines whether civilizations survive or fail. But we face this as a species on a planetary scale.
East Asian Science and Security Meeting
2010 Beijing China

Kosima Weber Liu, Associate Director
Environmental Education Media Project (EEMP)

kosima@eempc.org
+86-139 010 11 5 44