Community-Based Adaptation:
Examples from the people of the Pamir Mountains and other Indigenous Communities

Christopher P. Dunn, PhD
Executive Director, Cornell Botanic Gardens
Faculty Fellow, Atkinson Center for a Sustainable Future
<table>
<thead>
<tr>
<th>Category</th>
<th>Critical</th>
<th>Endangered</th>
<th>Vulnerable</th>
<th>Extant</th>
<th>%CEV</th>
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</thead>
<tbody>
<tr>
<td>Birds</td>
<td>182</td>
<td>321</td>
<td>680</td>
<td>9797</td>
<td>12</td>
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<tr>
<td>Mammals</td>
<td>180</td>
<td>340</td>
<td>610</td>
<td>4630</td>
<td>24</td>
</tr>
</tbody>
</table>


Conservation status developed from IUCN Red List criteria
6900 extant languages

50% endangered

Losing one language every 3 months (long-term trend)

Sources: Mosely (UNESCO, 2010); Campbell & Okura (in press)
Number of languages found: 191

http://www.unesco.org/languages-atlas
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Cyanea truncata in tissue culture
Lyon Arboretum, University of Hawai‘i
Extinct in the wild
The Seventh Extinction?

Biodiversity loss and
the slow extinction of human cultural diversity
Psoralea esculenta
Figure 2: Annual temperature anomalies relative to 1961-1990 for the four ECCAP areas.
Figure 5: Annual precipitation anomalies relative to 1961-1990 for the four ECCAP areas.
Accelerated Changes in Highlands

- Temps rising faster in higher elevations
- Glacial melting – rate higher than global avg.
- Loss of permafrost – Tibetan Plateau
- Impacts on ecological interactions
  Shifting of Species Ranges
  Invasive species and pests
- Disrupted agricultural cycles
  Changes in timing of runoff
  More precipitation as rainfall
  Earlier snowmelt, shorter winters
- Impacts on communities and livelihoods
Ecological Calendars

Farmers & herders integrate activities with their ecological and agricultural surroundings

Measure time with respect to phenological signs and biophysical habitat

Fig. 2. Illustrative example of the calendar of the human body from the village of Chantem, as documented by Andreev in 1902
Prof. Karim-Aly Kassam  
Cornell University, USA  
*Social science, human ecology*

Prof. Xu Jian-Chu  
Kunming Institute of Botany, China  
*Ethnoecology, alpine ecology*

Dr. Antonio Trabucco  
Euro-Mediterranean Center on Climate Change, Italy  
*Crop phenology, landscape ecology*

Prof. Cyrus Samimi  
University of Bayreuth, Germany  
*Remote sensing, climate change*

Prof. Kachra Ariff  
University of Central Asia, Kyrgyz Republic  
*Local knowledge, coordination*
One touch of nature makes the whole world kin
— William Shakespeare (Troilus & Cressida)
Seasonal cycle mapping
Knowledge transfer

Bioclimatic strata 1

Bioclimatic strata 2

Bioclimatic strata 3

Bioclimatic gradient

Climatic shift