The Four Faces of Community Sustainability and Resilience

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“It is not the strongest of the species that survives, nor the most intelligent that survives. It is the one that is most adaptable to change”
– Charles Darwin
“Sustainable Development”

(Brundtland Report 1987)

Using resources to meet the needs of contemporary society while ensuring their availability to meet the needs of future generations.

Basic Principles of Sustainability:
1. Long Term Productivity - Intergenerational Equity
2. Holistic Planning - Economic, Environmental & Social
3. Preserving Essential Ecological Processes
4. Protecting both Biodiversity & Human Heritage
5. Goals of a Better Balance of Fairness & Opportunity among Nations

Gongguan Leisure Agriculture Area, Taiwan
7 Principles of Community Resilience

1. Maintain Diversity & Redundancy
2. Manage Connectivity
3. Manage Slow Variables & Feedbacks
4. Foster Complex Adaptive Systems Thinking
5. Encourage Learning
6. Broaden Participation
7. Promote Polycentric Governance Systems

Source: Applying Resilience Thinking (http://StockholmResilience.org)
## Sustainability & Resilience

### Similarities

| Assumptions: Harmony between Human Society & the Natural Environment is possible |
| Research Focus: Community Development; Ecology; Climate Change |
| Methods: Climate Change Policies & Actions; Education & Learning as an Implementation Tool |
| Goals: System Survivability (Social & Bio-Diversity); Sense of Place/Belonging (Heritage) |

### Sustainability

| Assumption: Stability & Balance are the Norm (or are at least possible) |
| Research Focus: Environmental & Social Impacts of Economic Development; Over use of Resources; Carbon Footprints |
| Methods: “Wise Use” Resource Management & Preservation Against Change; Recycling & “Greening”; Education for Behavior Change |
| Goals: Normative Ideals (culture, environment & economic balance; Intergenerational Equity; Fairness); |
| **- Highly Contested Political Realities & Policies** |

### Resilience

| Assumption: Nonlinear & Unpredictable Change & Chaos are the Norm |
| Research Focus: Natural & Human Disaster Management; Climate Change Impacts; Social Capital & Networks |
| Methods: Reducing Vulnerabilities & Increasing Physical & Social Capacities for Change (flexibility & redundancy); Education for Innovation |
| Goals: Quantitative Equilibrium; System Models (Evolutionary Complex Adaptive Systems; Path Dependence; Innovation); |
| **- Might be Too Complex?** |
(1) Unexpected Large Shocks & Sudden Changes

- **Physical**
  - Typhoon/Hurricane/Cyclones
  - Earthquakes & Landslides
  - Floods & Droughts

- **Social**
  - Violent Change in a Government
  - Famines, Deaths & Migrations
  - Economic Collapse

(2) Unpredictable Gradual Shifts & Moderate Change

- **Physical**
  - Biological Ecosystem (flora & fauna)
    Relocations, Endangerment, & Extinction
  - Climate Change / Global Warming

- **Social**
  - Paradigm Shifts – Enlightenment/Science, Industrial, Technology
  - Globalization – Economic & Cultural
Scale, Change & The 4 Faces of Community Resilience

Based on Lew, 2013

<table>
<thead>
<tr>
<th>Geographic Scale</th>
<th>Change Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Slow Change Impacting an Economic Sector</td>
<td>3. Fast Change Impacting an Economic Sector</td>
</tr>
<tr>
<td>2. Slow Change Impacting Community</td>
<td>4. Fast Change Impacting Community</td>
</tr>
</tbody>
</table>

GEOGRAPHIC SCALES of RESILIENCE

- Global Resilience
- International - Regional
- National Resilience
- Province/Urban - Regional
- Community Resilience
- Enterprise / Institutional
- Family / Work Group
- Individual Resilience
The 4 Faces of Resilience & Sustainability - in the Tourism Sector

<table>
<thead>
<tr>
<th>FORMS of TOURISM SUSTAINABILITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maintaining the Tourism Economy’s Facilities &amp; Service</td>
</tr>
<tr>
<td>2. Addressing Socio-Cultural &amp; Environmental Impacts of Tourism Activities [Conservation]</td>
</tr>
<tr>
<td>3. Greening the Tourism Economy/Industry [as a form of Diversification; Environmental Footprint]</td>
</tr>
<tr>
<td>4. Tourism’s Contribution to Quality of Life Sustainability, especially in Times of Need [Disaster]</td>
</tr>
</tbody>
</table>

The 4 Faces of Resilience & Sustainability:

1. **Management Resilience & Sustainability**
2. **Resource Resilience & Sustainability**
3. **Planning Resilience & Sustainability**
4. **Governance Resilience & Sustainability**
Disaster and Non-Disaster Tourism Communities in Taiwan

<table>
<thead>
<tr>
<th>Non-Disaster Communities</th>
<th>Geographic Type</th>
</tr>
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<tbody>
<tr>
<td>Wuweigang</td>
<td>Wetland</td>
</tr>
<tr>
<td>Gongguan</td>
<td>Agriculture</td>
</tr>
<tr>
<td>Aogu</td>
<td>Wetland</td>
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<td>Agriculture</td>
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<tr>
<td>Ruili</td>
<td>Mountain</td>
</tr>
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<td>Guanghua</td>
<td>Mountain</td>
</tr>
</tbody>
</table>
Fast Change in Rural Taiwan

Fast Change in Taiwan
- Typhoon Flooding
- Earthquakes

Disasters Communities
1. Better Prepared for Future
   - Communities are Learning Institutions
     - Disaster shapes Decision Making about Future
2. Central Government Disaster Relief & Recover
   - Voluntarily relocation away from disaster areas
   - Rebuilds & strengthens infrastructure
   - Promote resilience planning
     - “Disaster improved the community”
     - Provides opening for innovative thinking
Medium-Slow Change in Rural Taiwan

**Economic Globalization**
- Change in rural landscape & livelihoods
  - Increasingly global (cheaper) competition for agriculture
  - Tourism to diversify the local economy
    - Rural economy becoming part of the urban economy
      - Market for agricultural products
      - Market for tourists & recreationist

**Disaster Communities**
- Better able to make this shift
  - Central government recovery funds
  - Higher level of community cohesion & collaboration
  - Openness to new ideas (from disaster experience)
Slow Change in Rural Taiwan

Traditional Values, Practices & Social Norms of Behavior
- Slow & Controlling Variables
  - Maintains the rural character and sense of place
  - Loss = Destruction of the rural countryside
- Not Affected by Disaster Experience
  - Made some better appreciate values, traditions & resources
    - = Resource Resilience & Sustainability

- Rural Taiwan = Traditional & Slow to Change
  - Close social networks
  - Multi-generation families
  - Tourists - 2nd homes & Retire in rural areas
- Cultural Globalization
  - Less impact in rural Taiwan than larger cities

Second home construction, Gongguan
Slow Change Resilience in Disaster Communities

(1) **Mix of Funding Sources**
- Short term Disaster relief
  – Fast Change
- Sustainability programs
  – Slow Change

(2) **Greater Sense of Purpose**
- disaster experience
- platform for innovation
- = broader range of future options
  - = indicators of a strengthened resilience

= **Slow Resilience variable**
- More Community Cohesion – Common Goals
- Stronger in Tourism Sector
- Weaker in Agricultural & Fishing-Aquaculture Sectors
Slow Change Resilience in Non-Disaster Communities

○ Focus on Slow Resilience Variables
  ■ Through Government Sustainability Programs

○ Lack of a Disaster Event
  ■ Stronger Traditional Path Dependencies
    ● Stronger Sense of Tradition
    ● Less Innovation
    ● Narrower range of Future Options
    ● More subdued Sense of Common Purpose

Chinese Red Dates, Gongguan
Ruili

• Alishan National Scenic Area

• Tea Production
  • traditional income source

• Tourism History
  • 1970s - Backpack area
    • Access by backpacking 3 to 4 days from train station
    • First bed & breakfasts
    • No paved roads until 1980s
  • 1990s - Bus access possible - standard domestic tourists
  • Recent years - Ecotourism & Leisure Nature tourism
  • 39 Bed & Breakfasts today – stable # due to land constraints

• Two Major Disasters
  • 921 Earthquake – September 21, 1999
  • Typhoon Morak – 2009
Ruili
921 Earthquake
September 21, 1999

Massive Landslide
Photos:
8 October 1997
20 Nov 1999
Ruili
Tea & Tourism

- **Solely in the Tea Sector**
  - focused on individual work activities
    - Sometimes annoyed by tourists
    - Less aware of disaster issues
      - Tea plantations resilient to typhoon flooding & earthquakes

- **Tourism Entrepreneurs** (may produce tea)
  - Developing Tea Culture Sense of Place
    - Training local residents in traditional tea ceremonies
  - More Aware of Disaster Issues
    - More Vulnerable to a sudden drop in tourist arrivals

*The more a person is involved in tourism, the more they want the community to work together on common goals*
Ruili
Resilience Indicators

- Innovation & Diversification
- Collaboration & Vision
- Educational Opportunities
  - Environmental Interpretation
  - Tea Ceremony
- Protecting Traditional Tea Agriculture Landscape
- Support for Nature Conservation
  - Tourism Resource: Hiking trails; Viewing of fireflies; Purple flowers festival

Highly Resilient Communities also have a High Level of Sustainability
竹坑溪步道
Zhukeng Stream Trail

吊橋之美
The Beauty of Suspension Bridges
Stage 1 – **Starting Condition**, followed by decline caused by (D) a fast change disaster event or (ND) non-disaster slow changes

Stage 2 – **Degraded Condition**, followed by (R) resilience response for disaster communities and (S) sustainability responses for non-disaster communities

Stage 3 – **Recovered Condition**, followed by a mix of sustainability responses (for slow change drivers) and resilience responses (for fast change drivers)

Stage 4 – **Resilient & Sustainable Condition**, responding to ongoing slow changes and prepared for unpredictable fast changes
Disaster (D) & Non-Disaster (ND) Development Paths

- Partly driven by the Types of Change Pressures (Slow-Medium-Fast)
- Partly driven by Government Policies & Programs
  - Will vary by different institutional structures in different countries
- Disaster Communities have an Advantage
  - Learned the Lessons of Resilience
  - Better able to be Sustainable, after establishing Resilience
Sustainability & Slow Resilience Are Different

Focus on the Same Issues
  = Slow & Persistent Change
    Drivers & Variables
  - Approaches & Goals Very Different
    - But can be Complementary
  - Share a Common Goal
    - Improved Quality of Life

Communities Do Both All the Time
  • Do not care if its “Sustainability” or “Resilience”
  • Pragmatism Wins in the Real World

2 Tool Boxes
  - When Should We “Conserve”? & When Should We “Adapt”?
Sustainable & Resilient (S+R) Communities

Goal of All Communities
- Innovation & Flexibility
- Cohesive & Collaborative Community
- Better Able to be Sustainable
  - to respond to Persistent Slow Change
- Prepared for Unpredictable Fast Change Drivers & Variables

Government Programs can Incentivize Resilience Planning
- Requires Adequate Funding & Political Will
  - similar to Sustainability

Sustainability can Help Communities to be More Resilient

Only a true resilience planning effort can fully prepare communities for the complexity of change in today’s world.
The 4 Faces of Resilience & Sustainability in the Tourism Sector

1. Post-Disaster Recovery/Relocation; Abandon/Upgrading Facilities; Some New Ownership & Tea Owners Expand into Tourism; Seasonality & Market Adjustments

2. Conserving, Restoring & Developing Resources: Trails, Waterfalls, Fireflies, Mountain Scenery & Air; Public Education for locals in Tea Culture & Environmental Interpretation (NGOs)

3. Gradual Development of Tea Culture Image/Branding; Coordination of Tourism Activities, esp. Special Events; Growing Cooperation between Tourism Sector & Tea Producers

4. Improved Infrastructure (govt. disaster recovery funds); Recent Alishan National Scenic Area Tourist Office marketing assistance; Continuing Central Govt Agency Small Grants
Ash forces Virgin to delay Aust-Bali trips

Virgin Australia has cancelled flights to and from Bali due to volcanic ash cloud. Source: AAP

Virgin Australia has delayed all flights between Thursday and Friday, as volcanic ash continues to shroud the island.

UNFAVOURABLE winds are pushing ash from Mount Agung towards Denpasar, forcing the closure of the city's airport, the airport's Advisory Centre says.

The ash can choke jet engines and destroy aeroplane engines. All daytime Virgin Australia flights to and from Bali were cancelled.

But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday. But a spokesman for the airline said additional flights were still due to operate on Thursday.
CASE STUDIES
on Resilience and Sustainable Tourism

This section of the Collaborative is for members to share Case Studies and Conceptual/Theoretical Papers related to Sustainability, Resilience and Tourism. Case study papers are arranged according the the framework outlined in the Submission Guidelines.

**Type 2 - COMMUNITY RESOURCE RESILIENCE**
- Slow Change in Tourism Communities

- The Resilience of Community-Based Tourism on Indonesia’s Gili Trawangan - by Arifin Bakti, University of Mataram, Lombok, Indonesia

- The Resilience of Agricultural Heritage Tourist Sites: Xinghua Duotian in Jiangsu Province, China - by Feng Cui, Department of Tourism Management, College of Humanities & Social Sciences, Nanjing Agricultural University, Nanjing, China

**Type 4 - COMMUNITY GOVERNANCE RESILIENCE**
- Fast Change in Tourism Communities

- Grand Canyon Shutdown: A Survey of Resilience Indicators - by Denk Spice, Department of Geography, Planning & Recreation, Northern Arizona University, USA (Portions of this case also relate to Resilience Type 3.)

**Type 1 - TOURISM MANAGEMENT RESILIENCE**
- Slow Change in the Tourism Sector

- Life Cycles & Resilience: Cherating, Malaysia - by Alan A. Lew, Department of Geography, Planning and Recreation, Northern Arizona University, USA, and Adam Ibrahim Nguru, University of Technology, Malaysia

**Type 3 - TOURISM PLANNING RESILIENCE**
- Fast Change in the Tourism Sector

- How Resilient is the White Mountain Apache Tourism Sector? - Katherine Nunn, Department of Geography, Planning & Recreation, Northern Arizona University, USA

- Resilience in Community Based Tourism: Drift Tourism in GaoLan Village, Three Gorges, China - by Zhifei Li, Department of Tourism Planning and Recreation, Northern Arizona University, USA

- Resilience in Community Based Tourism: Batu Puteh & Pulau Mabul in Sabah, Malaysia - by Alan A. Lew, Department of Geography, Planning and Recreation, Northern Arizona University, USA (This is a Type 3 case because of a sharp decline in tourist arrivals since 2013 due to thefts of tourists' property in the area.)