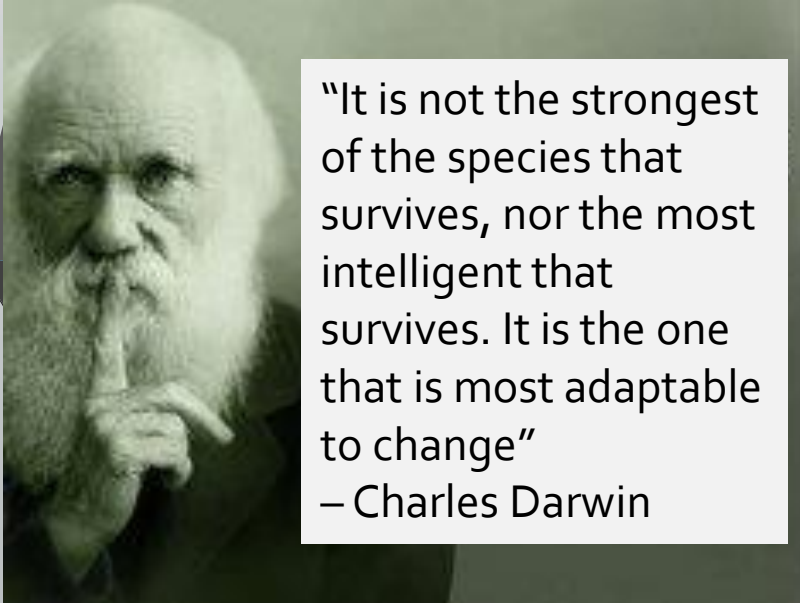


The Four Faces of Community Sustainability and Resilience



“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

Alan A. Lew, Ph.D., AICP

Dept of Geography, Planning & Recreation
Northern Arizona University, USA

<http://AlanLew.com>

Tropical Tourism Outlook Conference
Lombok, Indonesia

31 July 2015

Download: <http://is.gd/Lombok2015>

"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:

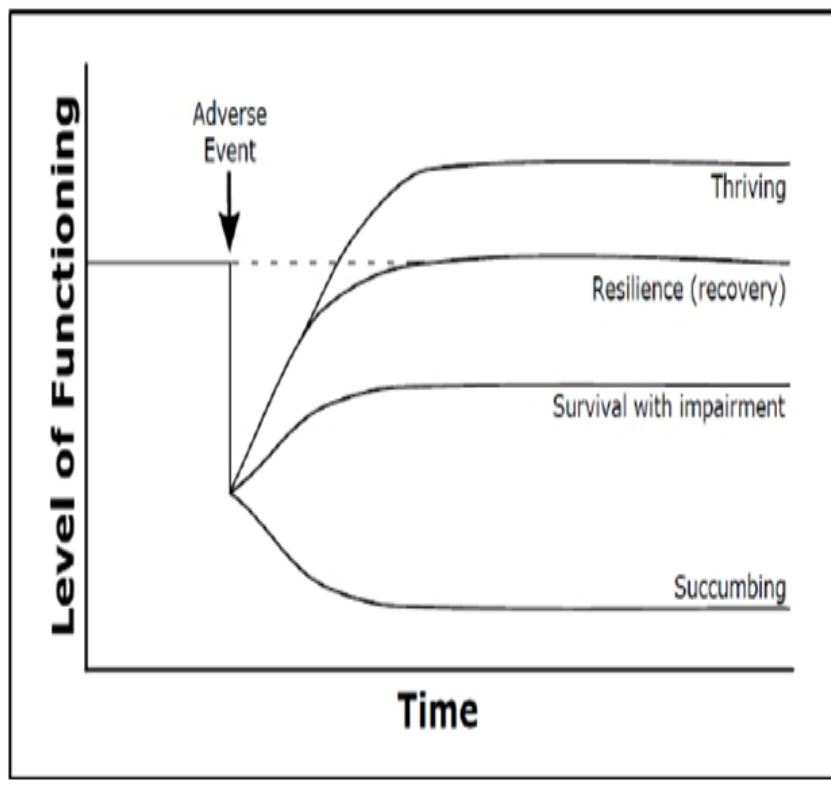
1. Long Term Productivity - Intergenerational Equity
2. **Holistic** Planning - Economic, Environmental & Social
3. Preserving Essential **Ecological Processes**
4. Protecting both **Biodiversity & Human Heritage**
5. Goals of a Better Balance of **Fairness & Opportunity** among Nations

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	Resilience
Assumption: Stability & Balance are the Norm (or are at least possible)	Assumption: Nonlinear & Unpredictable Change & Chaos are the Norm
Research Focus: Environmental & Social Impacts of Economic Development; Over use of Resources; Carbon Footprints	Research Focus: Natural & Human Disaster Management; Climate Change Impacts; Social Capital & Networks
Methods: "Wise Use" Resource Management & Preservation Against Change; Recycling & "Greening"; Education for Behavior Change	Methods: Reducing Vulnerabilities & Increasing Physical & Social Capacities for Change (flexibility & redundancy); Education for Innovation
Goals: Normative Ideals (culture, environment & economic balance; Intergenerational Equity; Fairness);	Goals: Quantitative Equilibrium; System Models (Evolutionary Complex Adaptive Systems; Path Dependence; Innovation);
<i>- Highly Contested Political Realities & Policies</i>	<i>- Might be Too Complex?</i>

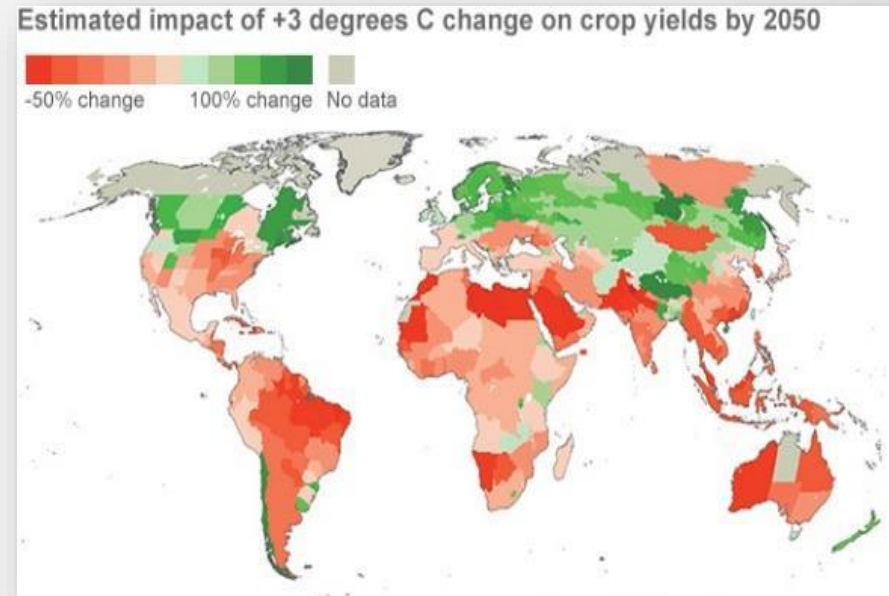
FAST & SLOW CHANGE

(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

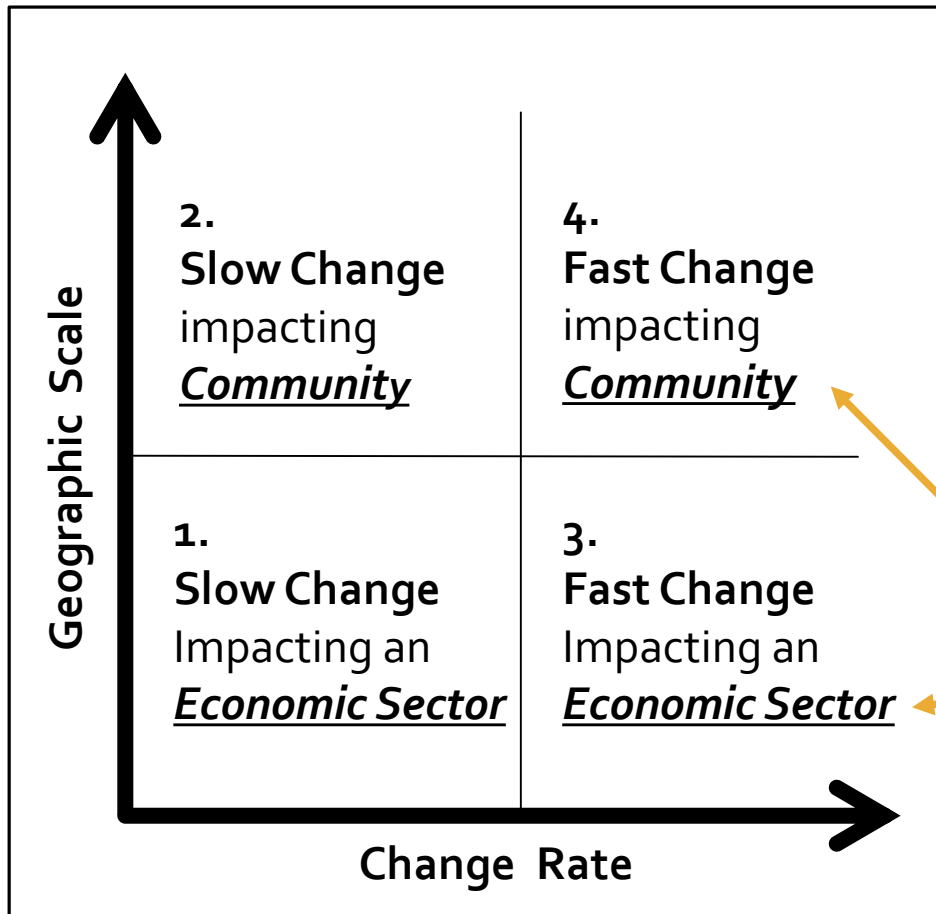
- *Physical*
 - Biological Ecosystem (flora & fauna)
Relocations, Endangerment, & Extinction
 - Climate Change / Global Warming
- *Social*
 - Paradigm Shifts – Enlightenment/Science, Industrial, Technology
 - Globalization – Economic & Cultural



IPCC 2014

Scale, Change & The 4 Faces of Community Resilience

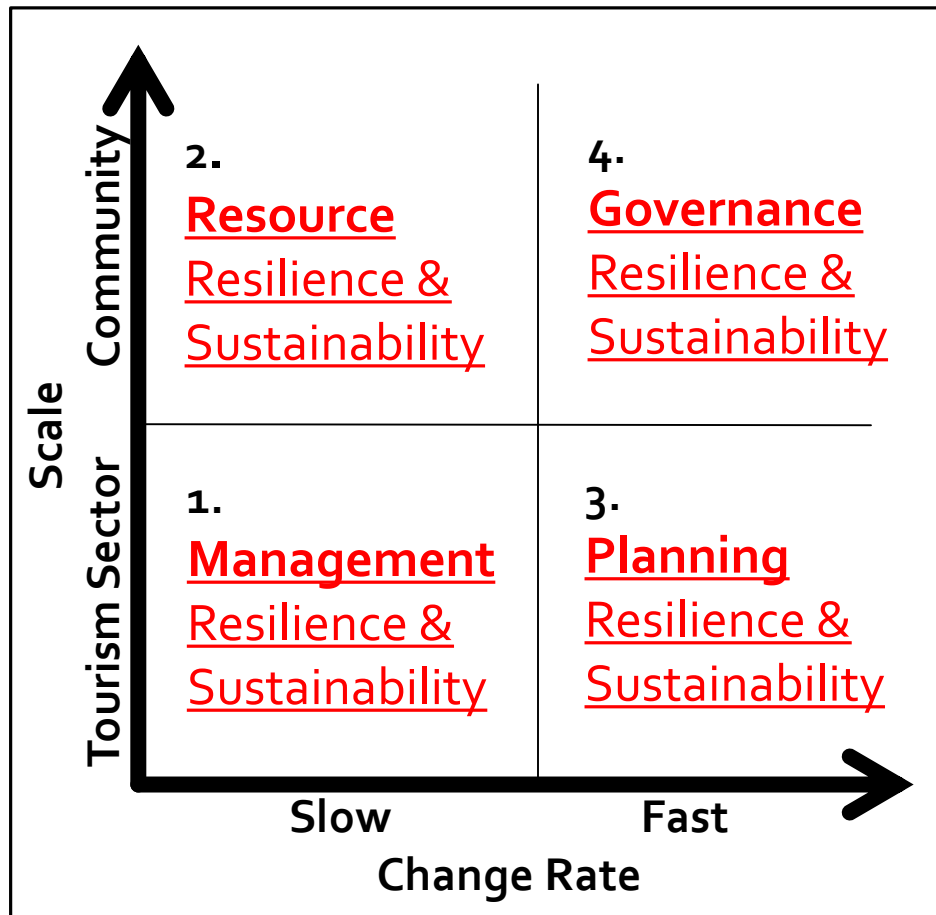
Based on Lew, 2013



GEOGRAPHIC SCALES of RESILIENCE



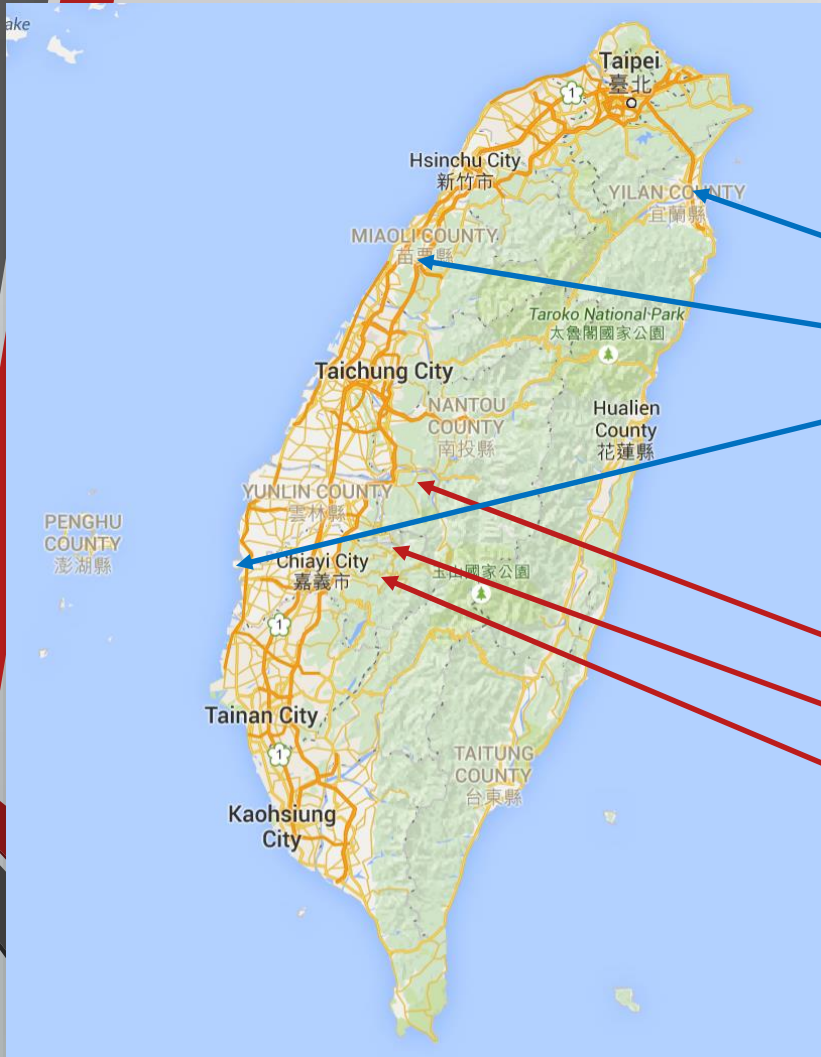
The 4 Faces of Resilience & Sustainability - in the Tourism Sector



FORMS of TOURISM SUSTAINABILITY

1. Maintaining the Tourism Economy's Facilities & Service
2. Addressing Socio-Cultural & Environmental Impacts of Tourism Activities [Conservation]
3. Greening the Tourism Economy/Industry [as a form of Diversification; Environmental Footprint]
4. Tourism's Contribution to Quality of Life Sustainability, especially in Times of Need [Disaster]

Disaster and Non-Disaster Tourism Communities in Taiwan



<u><i>Non-Disaster Communities</i></u>	<u><i>Geographic Type</i></u>
Wuweigang	Wetland
Gongguan	Agriculture
Aogu	Wetland
<u><i>Disaster Communities</i></u>	
Taomi	Agriculture
Ruili	Mountain
Guanghua	Mountain

Fast Change in Rural Taiwan

Fast Change in Taiwan

- Typhoon Flooding
- Earthquakes

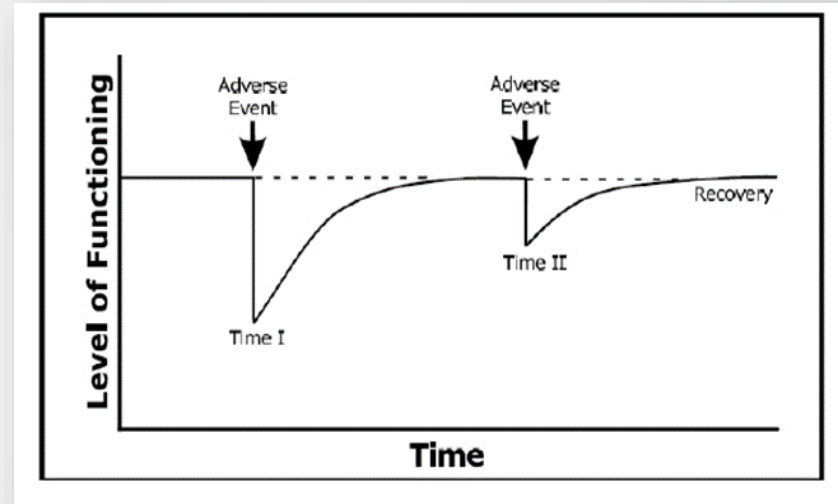
Disasters Communities

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

Leisure Agriculture Area,
Gongguan, Taiwan

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



Class on
Marketing
Agricultural
Products to
Tourists,
Gongguan

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



Tea and Bed and
Breakfast
Ruili, Taiwan

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***

Local Alishan
(Ruili area)
Products

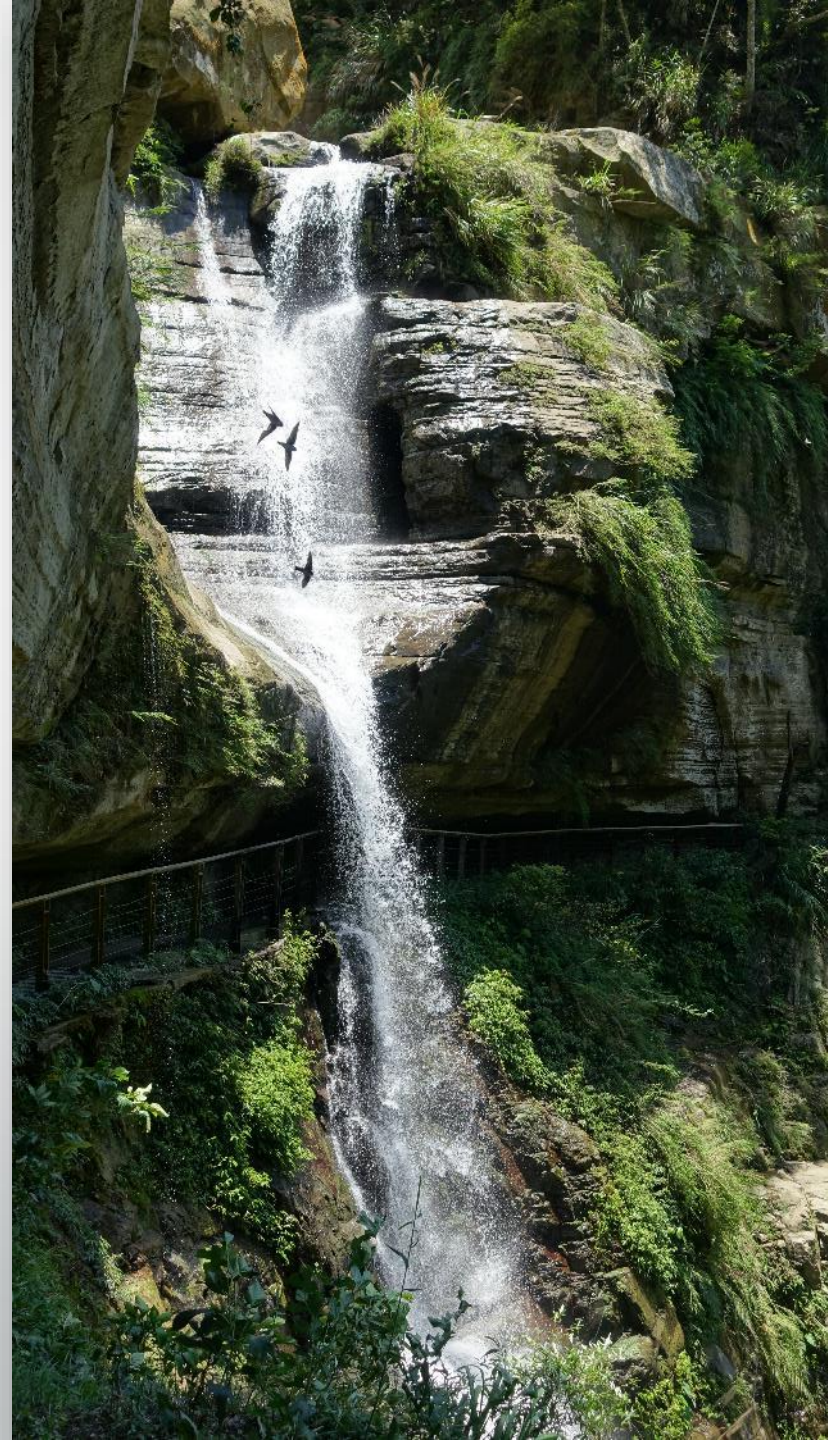




Ruili

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

瑞太步道系統圖 Map of Ruilai Trail System

景點介紹 Information

步道全長約1.3公里，因最早埔里居民將下山撿寶物須由日用的「挑坑古道」，2004年村裡山風立查路徑發展成生態區，景緻幽靜、環境多變、因而發展而成。步徑則建築而造，或木架、或架空皆有不同風情，中間段經過瀑布、高潭長年沖刷岩壁而形成天然洞穴，碧綠水潭紅石區戲水而下，加上該處常有猴群出沒，村民稱高水潭潭、皇天活動、極熱潭潭。

At 1.3km long, this trail was formerly known as the "Old Chongkang Way" because early residents used it to bring charcoal down the mountain for trade. In 2004, the Alishan National Scenic Area discovered its untouched beauty and restored the trail. The hikers brings a different face to this natural scenery. Along the trail are river waterfalls and caves, formed from many years of water erosion. Occasionally, monkeys can also be spotted.

叮嚀 Caution

- 慎穿平底鞋或軟鞋，避免山石、濕地、泥地、碎石等造成扭傷。
- 慎穿雨衣，如遇大雨時，應儘量避雨，以免被雷電擊中。
- 慎穿登山杖，如遇大雨時，應儘量避雨，以免被雷電擊中。
- 慎穿登山杖，如遇大雨時，應儘量避雨，以免被雷電擊中。

緊急連絡電話：119、110 Emergency hotline: 119、110

吊橋之美

The Beauty of Suspension Bridges

竹坑溪步道蜿蜒約有1.3公里之遙，貫穿多處峽谷與山洞，為利旅客深入遊賞，阿里山風管處設計不礙視覺觀瞻的輕便吊橋，取代粗重鋼橋，運用十種風格迥異的石、竹、繩等材料，精心妝點步道。至於何以採用渾然不同的十種設計取向，值得您一探究竟！

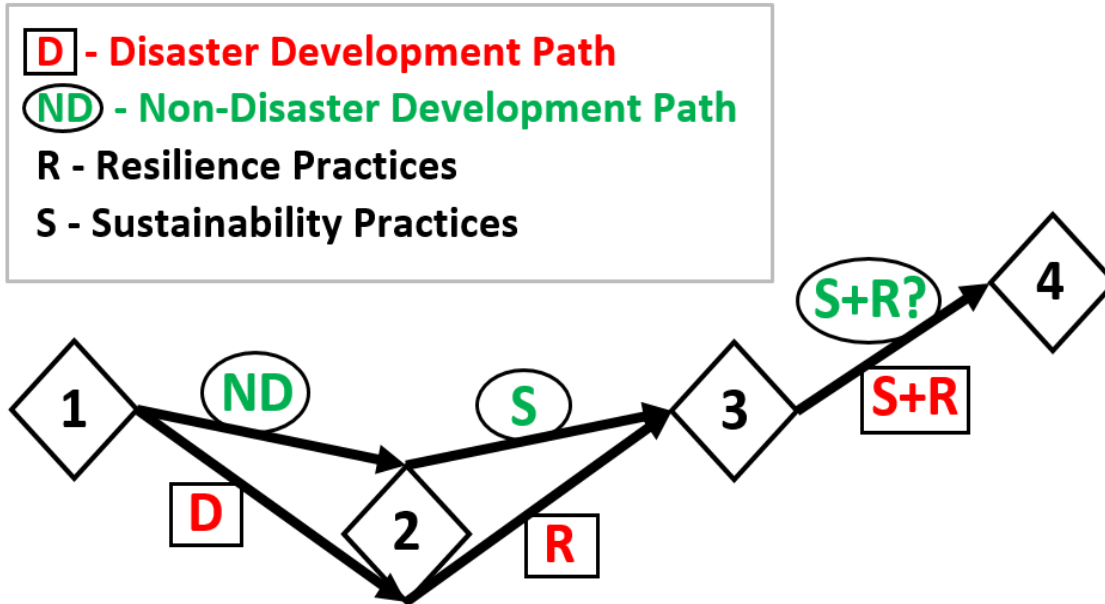
At 1.3 kilometers long, Zhukeng River Footpath zigzags through many valleys and streams. To make the hiking experience more enjoyable, the Administration Office of Alishan National Scenic Area constructed 10 suspension bridges of various designs along the way. Unlike the conventional steel bridges, these new ones are made of stones, bamboos and ropes. Come and discover the beauty of Zhukeng!

十座吊橋插圖示意

一號吊橋	四號吊橋	七號吊橋	十號吊橋
二號吊橋	五號吊橋	八號吊橋	
三號吊橋	六號吊橋	九號吊橋	



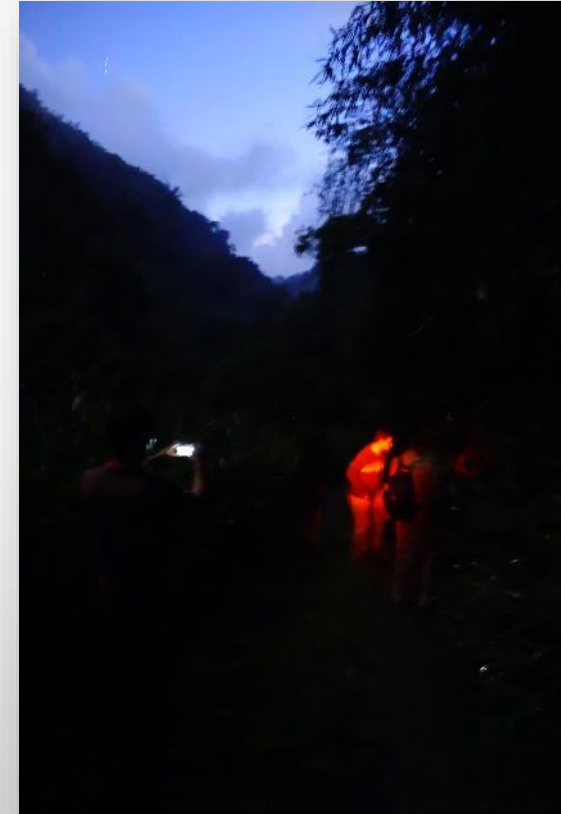
Disaster & Non-Disaster Development Paths



- **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



Firefly Hike, Ruili

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



Bike Path,
Gongguan

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

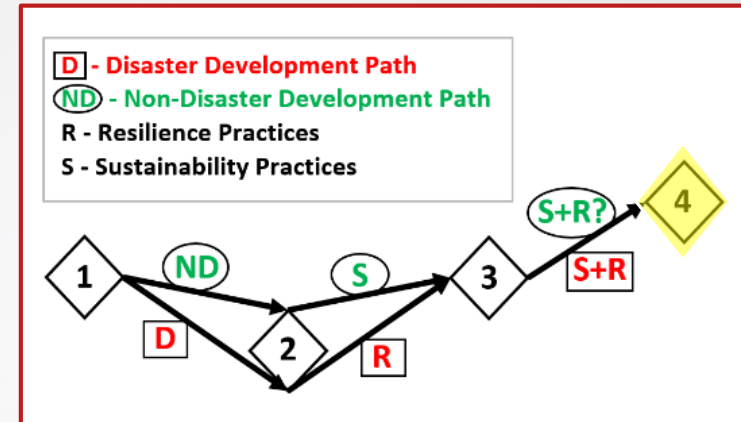
- Innovation & Flexibility
- Cohesive & Collaborative Community
- Better Able to be Sustainable
 - to respond to Persistent Slow Change
- Prepared for Unpredictable Fast Change Drivers & Variables

Government Programs can Incentivize Resilience Planning

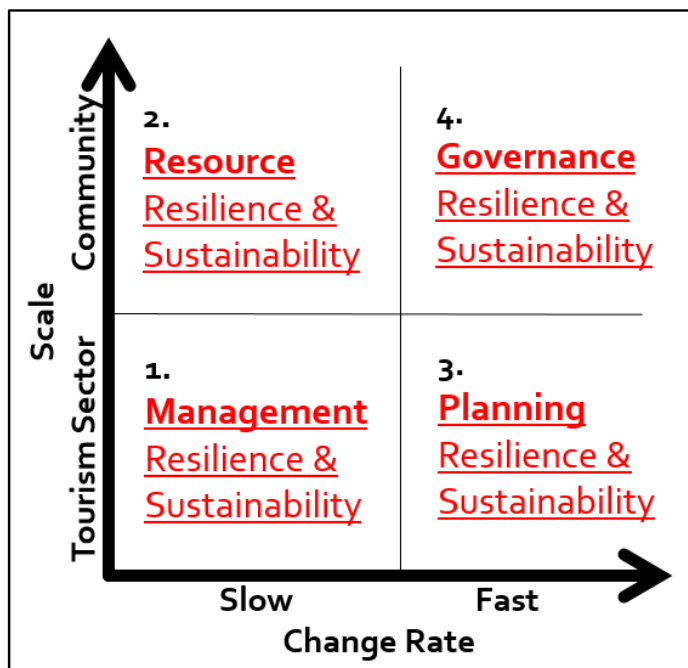
- Requires Adequate Funding & Political Will
 - similar to Sustainability

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



Ruili, Taiwan

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

- From: AAP
- July 22, 2015 6:46PM



Virgin Australia has cancelled flights to and from Bali as a result of volcanic ash cloud. Source: AAP

VIRGIN Australia has delayed all flights between Perth and Bali on Thursday, as volcanic ash continues to shroud the island.

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

The ash can choke jet engines and destroy aeroplanes. All daytime Virgin Australia flights to and from Bali were delayed by an hour and 55 minutes on Thursday.

But a spokesman for the airline said additional flight conditions over Denpasar improve, with passenger details.

Virgin Australia cancelled all 10 of its Wednesday



21ST

INTERNATIONAL SUSTAINABLE DEVELOPMENT RESEARCH SOCIETY CONFERENCE

10TH - 12TH JULY 2015



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The International Sustainable Development Research Society (ISDRS) is pleased to announce its 21st Annual conference to be held 10-12 July 2015 in Geelong (Melbourne) Victoria, Australia.

The Tipping Point: **Vulnerability and Adaptive Capacity**

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 to 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 Derik 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

Resilience in Community Based Tourism: Drift Tourism in GaoLan Village, Three Gorges, China - by Zhifei Li, Department of Tourism

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: Batu Puteh & Pulau Mabul in Sabah, Malaysia - by Alan A. Lew, Department of Geography, Planning and Recreation, Northern Arizona University, US (This is a Type 2 case because of a sharp decline in tourist arrivals since 2012 due to

Download: <http://is.gd/Lombok2015>

