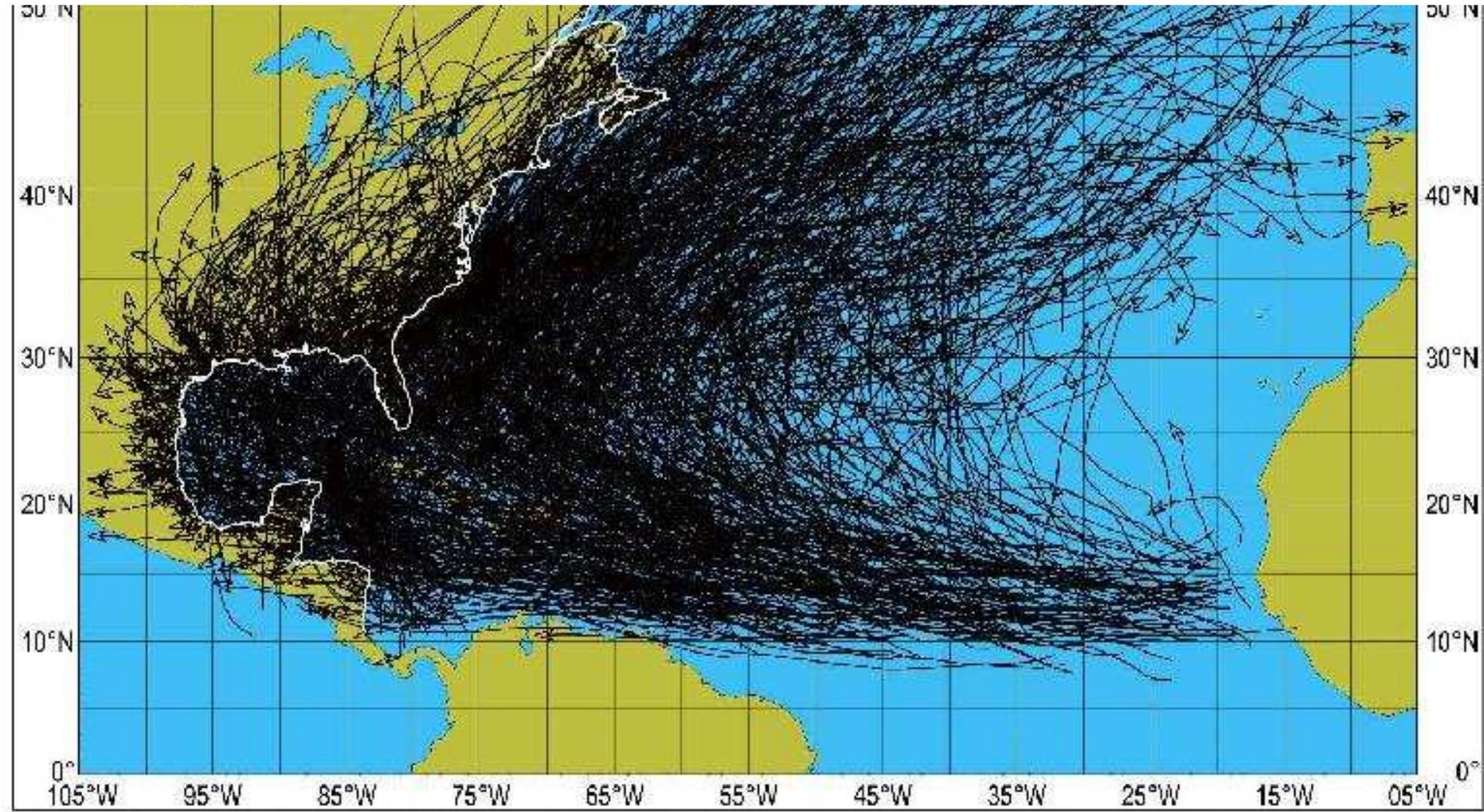


Octobre 2005 « STAN »

Hurricane Stan and Wilma in Mesoamerica: Central America and Mexico

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Hurricane tracks last Century in CA



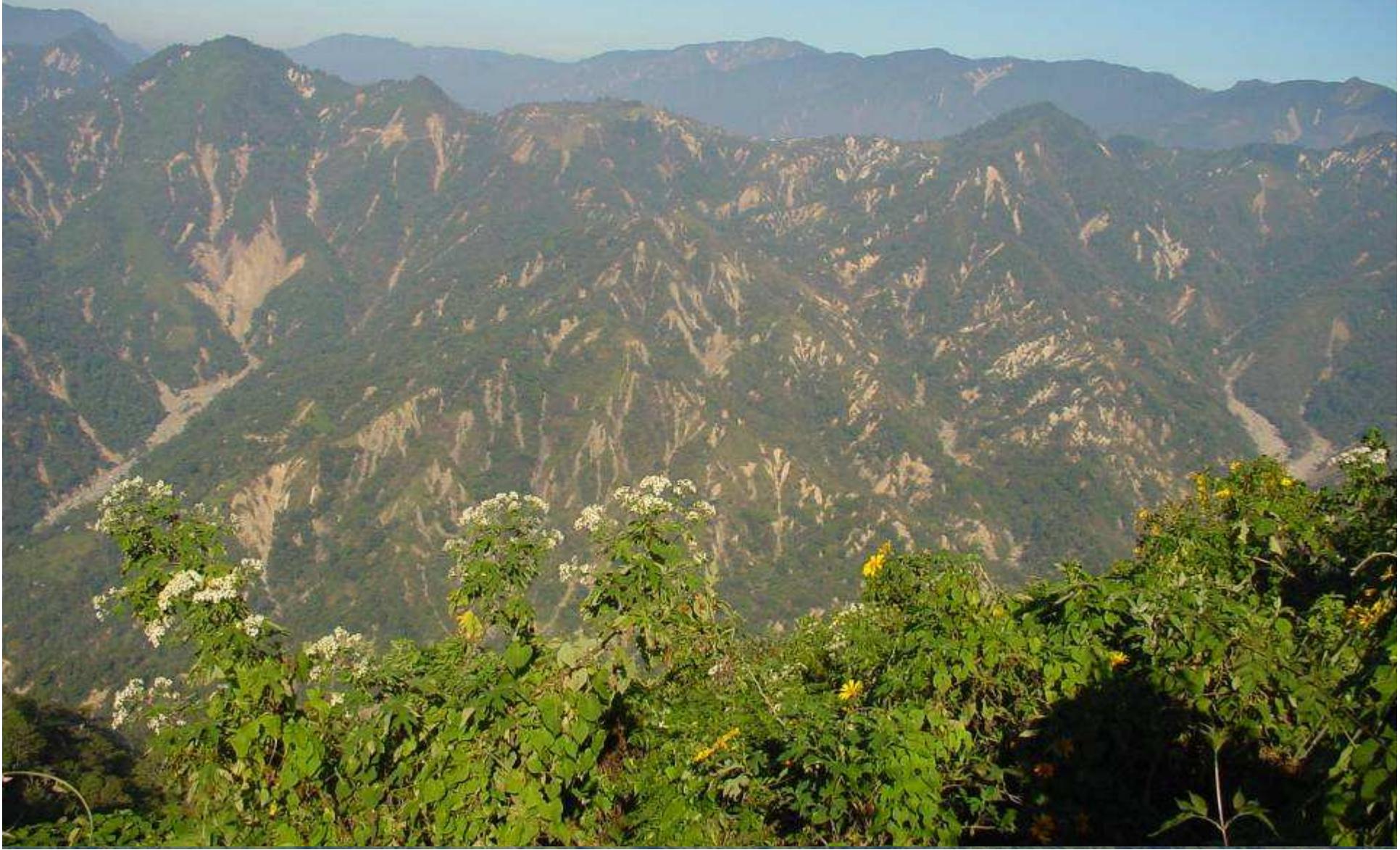
Hurricane Stan

- **Environmental vulnerability:** Hurricane Stan, associated with a larger non-tropical system of rainstorms dropped torrential rains, caused sludge and rockslides and floods. It was combined with a 5.8 level earthquake (Richter), and a volcanic eruption in El Salvador
- **Fatalities:** Guatemala 1,500 fatalities; El Salvador 72; Mexico 98, Florida 22.
- **Affectation:** over 2 million; Mexico: 1,954,571 people affected in the Yucatan Peninsula in Mexico; 98 rivers affected 800 rural and indigenous communities: 51.1% lived in rural (less than 2 500 inhabitants), 18.6% in mixed (until 14 999 inhabitants) and 30.3% in urban localities
- **Social vulnerability:** very high, indigenous in abrupt mountains
- **Lack of preventive evacuation:** 100,000 people fled during event; 84,000 were living in improvised shelters and 1,200 with “guest families”.
- **Destruction of roads** interrupted food supply in wider regions
- **Time:** 1st - 13th of October 2005

An aerial photograph of a vast, lush green mountain range in Mexico. The terrain is covered in dense tropical forest, with rolling hills and deep valleys. In the distance, a small town is visible on a ridge. The sky is blue with scattered white clouds. The text is overlaid in the center of the image.

**Affected Mam, Mocho and Kachiquel Indígenas, poor
and the most excluded in Mexico**

40% of forest were destroyed



- **Costs:** 2.162 billion USD; 65% direct losses; 35% affecting future productive activities (coffee, forestry, livestock).
- 71% of damages in the **state of Chiapas**: 40% natural vegetation of the Tuxtla Sierra was destroyed; 4 municipalities (Motozintla, Tapachula, Huixtla and Suchiate) concentrated 82.6% total damages.
- **Total costs:** 5% of GDP of State of Chiapas; most of the productive infrastructure
- Stan destroyed 40% of **social infrastructure**; 31.2% of economic infrastructure; 22.5% productive sectors (75,134 hectares of coffee); 5.2% environment (168,000 hectares of forests)
- **10,200 houses affected:** 11% totally destroyed, 16.3% partially damaged, the rest flooded/minor damage
- **1/3 of people** must be relocated due to high risk location.
- 1year later: less than 10% rebuilt

Hurricane Wilma



Wilma

- **Environmental data:** diameter of 700km and max. winds of 280 km/h; pressure 882hPa blocked hurricane over Yucatan Peninsula due to a cold front during 36 hours (strongest in the Atlantic; the 10th most intensive worldwide; 3d in category 5 in Atlantic after Mitch: 1998 and Hattie: 1961)
- **Evacuation:** Western part of Cuba 560,000; Mexico 98,000 people: 27,000 tourists were brought to safer places, and 15,000 local inhabitants and tourists were taken to shelters.
- **Fatalities:** Haiti 12; Mexico 8; USA 35 (most in Florida)
- **Time:** 19-24th October, 2005
- **Affectation in Mexico:** more than 1 million depending on tourism

Economic losses

- **Wilma:** 1.74 billion US\$: 94% related to tourist sector. 24.6% direct damage for destroyed port and hotels, mostly insured. 75.4% of damages were indirect costs due to lost economic opportunities
- Government repaired in one week water and electric supply; rebuild with insurances in 2 months tourist infrastructure; beach resort functioning in December 2005
- Cancun lost 31.1% of tourism income still in 2006.
- **Stan, Wilma and Emily:** 4.6 billion USD; not much lower than all hydro-meteorological losses accumulated during **the past 25 years** in Mexico (1980-2004) estimated at 6.5 billion dollars.

Key messages or lessons learnt

1. Wilma: risk transfer thanks to insurance and governmental post-disaster respond, rebuilding and tourist propaganda for an international beach resort permitted fast recovery
2. Prevention and evacuation reduced fatalities; disaster funds speeded up reconstruction, governmental support is crucial
3. Transparency reinforced fast post-disaster recovery
4. Indirect costs are higher than direct ones and affected livelihood, food supply, jobs, income and survival of vulnerable people
5. Comparative approaches permit to understand underlying social and natural vulnerabilities and long term effects
6. Social vulnerability, indigenous population and low education limit positive disaster response and bottom-up resilience-building
7. Social and institutional discrimination increases existing social vulnerability before and during disaster, and limits fast recovery
8. Environmental and social vulnerability creates multiple causal processes and produces complex and unpredictable effects, but increase also risks: fatalities, hunger, unemployment, livelihood loss, new risks due to environmental destruction. It increases the survival dilemma and produces environmental forced migration with greater gender vulnerability.

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Thank you

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