



Exploring cultural changes toward climate adaptation: Learning from the Taiwanese ethnic group Hakka

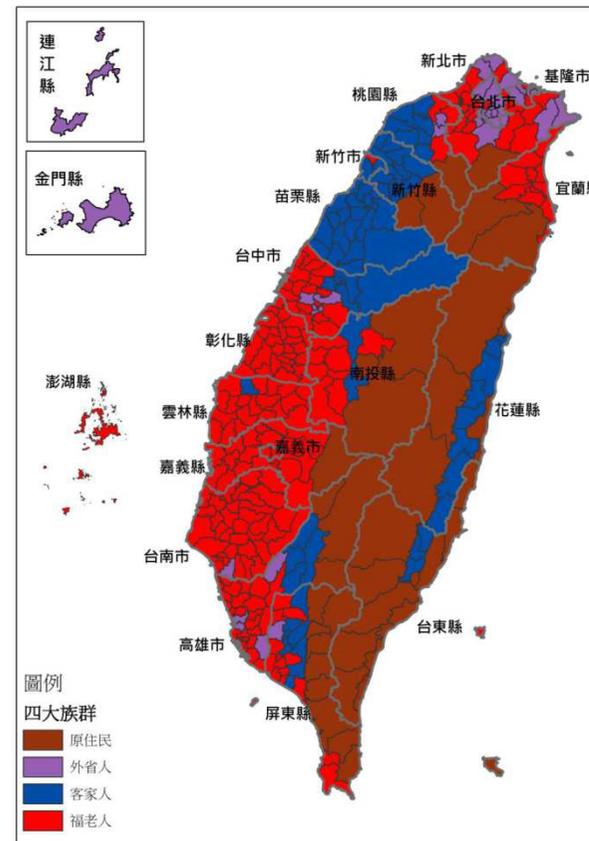
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1. Who are the Hakka in Taiwan?

- Migration from Mainland China in the 18th century and after the World War II.
- Population : roughly 4,600,000 (ca. 20% of the total population) and is concentrated in northwest counties of Taoyuan, Hsinchu and Miaoli, and east country Hualien and in a southwest **Meinong** Township.



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- The Meinong Hakka settled in Pingtung (alluvial) Plain which is abundant in groundwater (Tseng, 2000: 208). Based on their life experience with water, they turned to be “water people” which is different from the conventional discourse that Hakka are “mountain people.”
 - In the process of settlement in the vicissitude of history, the Hakka dug **ponds** for their irrigation and daily use. Ponds for irrigation characterize the landscape in the districts where the Hakka lives.



2. Case study: Meinong Township

- Research on the human dimensions of climate change (cf. Vogel et al. 2007) is generally recognized. The value and role of local environmental knowledge about climate has begun to be recognized (Hulme, 2009: 81).
- Drawing on theoretical tenet in anthropology, culture frames the way people perceive, understand, experience, and respond to key elements of the worlds which they live in. This framing is grounded in systems of meanings and relationships that mediate human engagements with natural phenomena and processes. (Roncoli, et al., 2009: 87)

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- This study explored how the Hakka in Meinong live with water and adapt to floods culturally which involves their **perceptions** through Hakka language. However, the residents' knowledge, know-how skills and practices transmitted over generations coping with floods are disturbed by the government which builds up the embankment as a “useful” means against floods. Such a contrast motivates us to explore how Meinong Hakka adapt to climate change culturally.



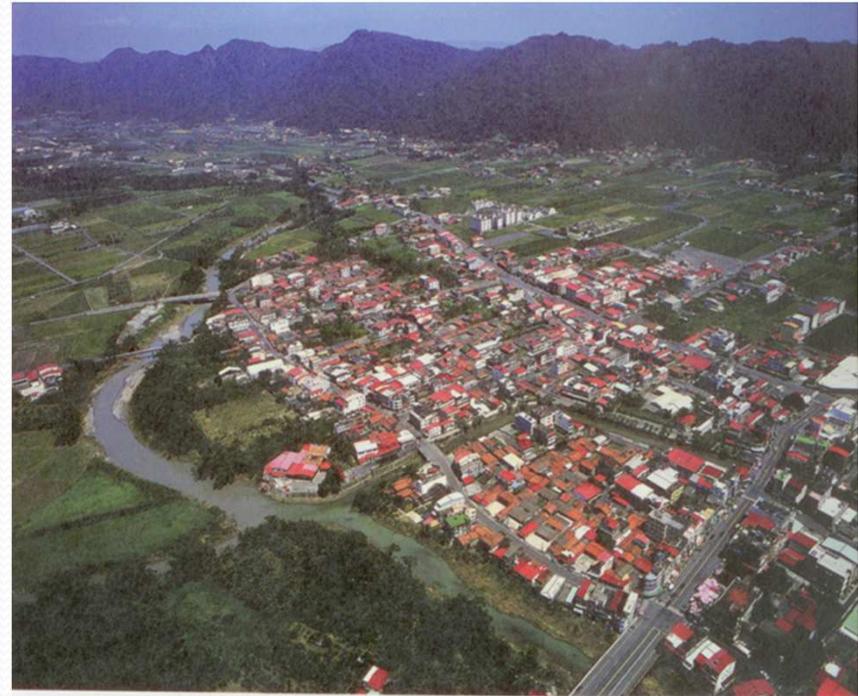
3. Methods

Interviewing:

- By applying open-ended, and in-depth semi-structured interviews in Meinong, we explored the relationship between the residents and water.
- Interviewees are local elders, and those who engage themselves in local community organizations.

4. Living with water

- Meinong(美濃), originally named Mi-nong (彌濃)in the 18th century. “Mi” means that the settlement (village) lives off water , and water would never be exhausted. “Nong” connotes that the villagers are farmers. Until 1920, the name was changed into “Meinong” by the Japanese colonizers. (Liu, 1994)



(1) “Ponds from sky”

- Ponds is also known as “**Ponds(society) from sky(climate- rainfall)**”(看天池) for storing rain from the Nature (Chuang 2008: 14).
- The ponds are located by the farms.
- **Multiple functions of ponds:**
 - water storage in the heavy rain
 - flood protection
 - groundwater conservation
 - irrigation in the drought season
 - farming freshwater fish

(2) “Making big water” ,“runnig big water”

- The Hakka understand “floods” in the expressions as follows:
 - “**[Nature] makes big water**”(做大水): floods
 - “**[People] run [when] big water [comes]**”(走大水):
 - floods
 - changing of land use: settlement changed its location when floods came. However, since 1970s, the sites were unchanged because of government’s urban planning

(3) “Living off this water together”

- Before the Japanese colonization in Taiwan:

Traditionally put, in Meinong, the connection of people and water is interpreted in two Hakka expressions: “**living off this water [resource] together**”(食共條水); “**everyone is responsible for hollowing out ponds and building irrigation channels**”(開埤築圳、人人有份) (email with Wen, Nov.02.2012)

In Hakka language, this responsibility is “份”(pronunciation “Fen”), which connotes three meanings:

- responsibilities and obligations for funding and labor [paying for water rent]
 - rights to have one’s shares and profit[being allocated with fish]
 - rights to be entitled to have proportion of irrigation water
- The local organization was responsible for the management and operation of ponds and channels. On the one hand, this organization cleaned ponds, channels, and ditches, and got embankment blocked up because these embankment was crumbled by floods; on the other, it leased ponds and channels for farming freshwater fish, sold fish for management, and allocated fish for the families who paid for water.



Cleaning and dredging during February and March

- Everyone came back during season of grave-sweeping
- Why ? - less water needed for farming
 - fish allocated to those paid for water, sold to others
 - a catch of fish as oblation for graveside rituals

A closing remark:

This sharing principle of “live off this water together” turned out to be “an association for common interests”. Social cohesion among the residents was thus practiced and symbolized in this way.

(4) Spiritual world: "February Festival"



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- After spring ploughing, farmers have free time for festival.
 - The residents show gratitude toward Land and River incarnated in River-Earth God sheltering residents from flooding and bestowing them a abundant and peaceful life.
 - The residents worship River, Earth God with food and traditional putting on a play
 - This festival takes place along the River Meinong
 - **Meaning: Praying for peace between people, between human and Nature, and revering Nature.**
 - **Cultural identity are thus enhanced.**

5. Coping with floods nowadays

- Based on the residents' life experience with water and floods in the past, know-how skills coping with floods nowadays are thus developed:
- Residents are organized in small teams for neighborhood watching.
- Before flooding, everybody are informed by setting off firecrackers, or by tolling out.
- The residents would be notified beforehand the places where was frequently inundated.
- Such cooperation does not only take place between residents in one village, but also among villagers from different villages. The other villages give their hands in affording meals for those flooding sufferers.

SOP in coping with floods

- **Observation**: it keeps raining for three hours, and the color of dark clouds does not fade.
- **Checking**: checking the information gathered by the station for estimation of rainfall of the Bureau of Meteorology in 6 hours, and seeing if the rainfall exceeds 300 mm. (The annual rainfall in this district ranges from 2800 to 3600 mm).
- **Examining** if the distance height between the water level of draining of lake and the road is 200 cm.
- **Verification** : by applying the above three procedures, the residents successfully avoid becoming the flooding sufferers for at least five years, they are 2005, 2006, 2007, 2008, 2009.
- **Retreating**: retreating from the flooding areas in one hour.

6. Conclusion

- Descriptions and analyses of these mediating layers of cultural meanings and social practices in this study contribute to learning the value of the local adaptive knowledge and strategies to climate change.
- Complex bodies of adaptation to climate change embedded in residents' shared histories and experiences that transmitted over generations constitute the basis, on which know-how skills coping with floods are further developed nowadays.
- Meinong Hakkas' experiences provide the policy-makers of an insight into a complex of adaptive practices which include not only **making livelihood, enhancing social cohesion, but also manifestation of spiritual world**, rather than the solutions and policies proposed and practiced by the experts' scientific knowledge.

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- **Thank you very much for your attention!**

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