

# Cross-Cultural Ecosystem Services: How Taiwanese and Amis live with rivers?

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## Abstract

Cultural ecosystem service has been a raising field since 2010. While interdisciplinary research teams investigate cultural ecosystem services via humanity lenses, most CES studies focus on mono-cultural settings. The study compares the Taiwanese Han-culture waterfront recreational patterns to the Amis tribal aqua-cultural habitat patterns. It suggests the community participatory mechanisms for re-vision the Danshui River ecosystems. It argues that the river ecosystem could support cross-cultural lifestyles for Amis tribes if the government officials and design-planning professions could alter their approaches of waterfront planning, design, and governance. The research sheds the light on multi-cultural environments in our global world.

Keywords: cultural ecosystem service (CES); cross-cultural landscape; Amis urban tribe; Danshui River

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## 1.0 Introduction

After the Millennium Ecosystem Assessment defined ecosystem services (MA 2003 & 2005), scientists and researchers across disciplinary collaboratively investigate how much ecological value we have dismissed from our natural environment. Lately, scholars in the humanity fields have advocated the cultural perspectives influencing human's relationships with the nature and our surrounding environments. Following this line of thinking, this study investigates a is adjusting waterfront case in Taipei, Taiwan. It examines how the Amis cultural ecosystem services (CES) of riverside habitats confront the modern waterfront recreational CES along the XinDian River and DanShui River in Taiwan.

The XiZhou Amis community in the XinDan River, an upper-stream of DanShui River, was one of the fourteen indigenous people in Taiwan. Located at the Xindian District, New Taipei City, the Xizhou tribe was built by Amis people who migrated to the metropolitan Taipei area thirty-eight years ago. Amis people originally came from Hualien County and Taitung County which are located at the east of Taiwan. Due to the decline of their rural hometown, the majority of young Amis left their home villages, and moved to an urban area and struggled for better working opportunities. Wu (2013) pointed out, in Amis tradition, they believed that the water “ came along with the spirits of ancestors.” He affirms that all the living activities, rituals, and ceremonies, were also deeply related to the water body, river or ocean. Even it is very challenging; Amis urban migrants struggle to establish tribe homes and living environments adjacent to waterfront areas.

While Amis appreciates riversides as their homes with their ancestors' spirits, the mainstream Taiwanese modern culture (Han culture) approaches urban waterfronts as its recreational sites. As the disadvantaged socio-economic group in Taiwan, Amis urban dwellers mostly build their riverside villages in illegal flood plains. Taipei governments had demolished the most Amis urban waterfront tribes since the early 2000, and they had developed bike trails, jogging paths, picnic facilities and so on for citizens to use. Within this line of thinking, the paper argues cultural ecosystem services (CES) are cultural battles between different socio-political and economic groups. Different groups embody different identities, values, and believe (Mokhtarshahi & Mahasti 2013). This paper points out the tensions between the Amis riverside habitat CES and the Taiwanese modern recreational CES.

## 2.0 Cultural landscapes and cultural ecosystem services – Theory

The most critical perspectives of cultural landscapes refer to the nonmaterial relationships between human and their surrounding environments, including spiritual, emotional, aesthetic, and moral. The field of the cultural landscape initiated in the early 20th century and established around 1970s. Cultural landscapes were first defined by geographer Sauer (1925) with particular geographic units associations with human facts. These facts include cultural relations, especially in “the habitat values as the basis for the determination as contents”, and “natural and cultural landscape.”

In the 1960s and the 1970s, geographer Yi-fu Tuan (1974, 1979, 1996) applied theories and methods from phenomenology and elaborated on the human perceptions of places. Tuan

and his colleagues emphasized the emotional attachments of places. Around the same time, as a writer, J.B. Jackson developed his everyday life landscape that emphasize people's ordinary behavior embodied their values that influence how they engaged within their surrounding environments. In the 1980s and 1990s, Hayden argued the collective memories and histories of African American urban community were critical to the meaning of places. Zukin (1993) also echo the political-economic power of places to analyze the symbolic meaning of landscape. From capitalist commercial power Zukin's (2012) recent research extends to the field of cultural ecosystem service that I will address in the following paragraph.

The concept of cultural ecosystem (CES) has been increasingly accepted by cross-disciplinary scholars and researchers lately. The CES is a combination of the century-long field of the cultural landscape and the emerging field of the ecosystem services. Since early 21st century, Dr. Constazan' quantitative-based ecosystem service research has been evolving into the Millennium Ecosystem Assessment (MA 2003 & 2005). CES scholars have been struggling to define the indicators and research methods of human psychological based perceptions of ecosystem services. Reflecting on market-oriented tourism CES dominating the CES field, Kumar & Kumar (2008) first attempts to address the lacunae in valuation of ecosystem services from a psychological perspective by arguing that the common person's perception of the ecosystem is quite different from what is conceptualized by conventional economists.

To elaborate relationship between intangible values and ecosystem services, Gee & Burkhard (2010) uses a case study method investigating the German North Sea coast. The paper investigates residents' emotional reactions on wind farming. They believe the wind farming threaten the intangible local cultural landscape values. Chan, Satterfield & Goldstein (2012) try to establish CES evaluating systems that assist decision makings in the planning process. German researcher Bieling and her colleagues (2012 & 2013) integrate qualitative coding, and quantitative methods attempt to develop CES systems. Lately, Bieling (2014) applies story-telling methods to the nonmaterial benefits of ecosystem in Swabian Alb, German. This is one of the few pieces applying qualitative research methods as the core of the research. In addition to natural and rural CES, Zukin's identity related CES research regarding shopping street in Amsterdam could be defined as the frontier study in the urban CES field.

Following her shopping landscape research, Zukin (2012) applied ethnographic observations, interviews, and online and archival data in this case study. She argued "the social capital that develops in these vernacular spaces supports a unique urban cultural ecosystem. Local shopping streets mobilize esthetics, collective memory, and traditional forms of social interaction to create feelings of local identity and belonging which are endangered by economic modernization and global consumer culture." (ibid.)

### **3.0 Amis urban-rural migration - Ethnographic field study**

Based on qualitative methods, we collected historical documents of Amis urban rural migration history and interviewed more than hundred residents. Similar to Zukin (2012) and Bieling (2014), we also applied ethnographic observations, interviews, and online and archival data analysis. In order to understand the Amis cultural values, we investigate two

Han cultural communities along the Danshui River, as well as the Xizhou tribe in the upper stream XinDian River. We conduct quantitative surveys to understand how residents of the three communities perceive their relationships with their adjacent river. The surveys include: (1) GuanDu waterfront community Survey number 128 (total population: 11,052), (2) HuaJiang river levy community Survey number 56 (total population: 14,114), (3) Xizhou riverside urban tribe community Survey number 30 (total population: 180).

We apply qualitative interviews to understand their personal stories and emotional attachments with the river. For the Xizhou community, we operate the additional observation to learn how they use riverfront environment and the river in their everyday lives.

### 3.1 Amis urban-rural migration to the rapidly urbanized metropolitan Taipei

Rooted in their indigenous aqua-culture, Amis “loma” (tribal home) always associated with water. Being the largest one of the fourteen indigenous people in Taiwan, there were about twenty thousand Amis in the official statistics from the central Council of Indigenous Peoples, Executive Yuan in 2009. The Amis traditional territory was located at the plains of the Hualien County (花蓮縣) and Taitung County (台東縣).

At the beginning of the paper, I mentioned that Amis habitats locate close to waters, because of their strong aqua-related belief. When they migrate to cities, they search for riversides as their “loma” home. Due to the rapid urbanization and industrialization between the 1960s and the 1990s, many Amis had moved away from their tribal villages in Hualin to the metropolitan Taipei in the north (Fig. 1). According to Wu (2012) study, most of them served as low wage construction workers under harmful working conditions in society due to the inequality of opportunity for aboriginal socio-economic groups. Because of their low economic power, majorities of Amis people hardly afford the high rent and living costs in the urban area. They often reside in the temporary shed within the construction site.



Fig. 1. Three field sites and the survey results of how survey participants identify their CES relationships with their neighborhood Danshui River.

The Amis people established this new urban tribe response to their cultural needs and community consensus. Based on their traditional knowledge of the cultural landscape, they carefully choose this particular site as their homes and created a new tribe by themselves. In the case of the XiZhou waterside village, back in the mid of 1960s, a few Amis people occasionally found this particular waterfront site along the XinDian River where was very similar to their hometown in many ways. Located on the riverside highland, this site is adjacent to the Xindian River, and surrounded by grass plains where could be used for vegetable gardens and agricultural farms. The XinDian River where the Xizhou urban Amis tribe located is the southeast branch of the Danshui River. According to urban plan zoning control system, the riverside area was under flood plan zone that was not for residential developments. The pioneers strategically started by building small sheds for fishing and gardening tools, and they start vegetable gardens. Applying their construction skills and recycling building materials, these Amis gradually extend to small village make-shift houses and develop the XiZhou urban tribe. More importantly, they have been holding Amis annual festival yearly since it is one of very few urban waterfront villages for all homesick Amis urban migrants in the metropolitan Taipei.

#### **4.0 Cross-cultural ecosystem services contesting - Modern Han vs. Amis**

##### **4.1 The Modern Han CES “go there” vs. the Amis CES “be here”**

As mentioned above, the research team conducted quantitative surveys in three riverfront communities including two of Han mainstream culture, and one of Amis indigenous culture. The three communities all locate along the DanShui River. However, they have different relationships with the river. Among the three, communities of GuanDu and XiZhou directly connect with the river, while there is a tall levy blocking the HuaJiang community and the river. Among the three, only the XiZhou community is Amis culture. The other two are the Han cultural dominated communities. In Figure 1, we can clear read that only Xizhou Amis residents identify there are “here” within the riverside homeland. Residents living in the other two communities stated they “go there” to the riverside.

##### **4.2 The Han modern culture dominated riverside recreational planning and design**

According to the usage patterns survey, for respondents from HuaJiang and GuanDu communities, they identify riverfront areas as their recreational places to get relax or do exercises, the Amis respondents identify XiZhou and the river as their homes to reside.

Today, residing in high density cities, urban dwellers often appreciate waterfront parks provide opportunities for picnicking, biking, jogging, strolling, dating, and natural watching etc.. Politicians, and Park and Planning Agencies in different countries and cities also target waterfront park designs as the developments with a very high priority. However, these popular modern waterfront recreations are different from the experiences of living with rivers. For example, in order to build bike trails, the riverbank need to be concretized. However, for Amis fishing, they need natural riverbank, shallow water areas to catch fishes. Planning professions overlook the land use conflicts between waterfront park developments and

riverside villages.

#### 4.3 Amis Cultural Ecosystem Services - we are “here” at our spiritual riverside home

As mentioned above, according to Wu (2012), Amis believed that the water came along with the spirits of ancestors. Therefore, they always consciously chose the tribe site and living environments near to the waters (Figure 2). All the living activities, rituals and ceremonies were also deeply related to the water body, river or ocean. Based on ethnographic observations and interviews for six years, I introduce three Amis cultural ecosystem services below. As Mazlan and Omar (2012) introduced the indigenous knowledge of Malay tribes, the three patterns are deeply rooted in the water close to their home villages. The critical Amis CES includes qualities of spirit, emotion, moral and ethics related behaviors. The riverside Xizhou tribe plays a very critical role for Amis urban young generation who were born in the metropolitan Taipei. These young people have been learning Amis aqua-culture via the XinDian River. Without the XinDian River, Amis would lose their water related spirits and socio-cultural practices in their urban lives.

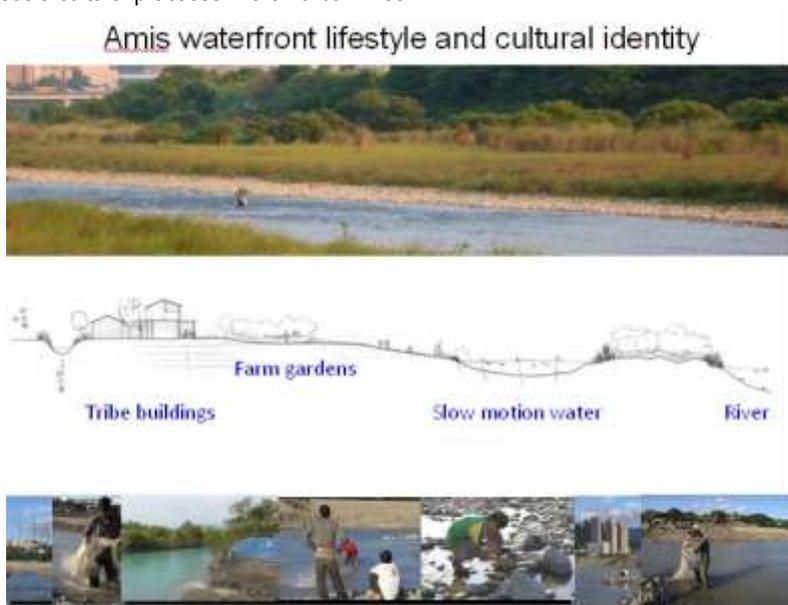


Fig. 2. Amis tribal riverside lifestyles.  
(Drawing provided by Jin-yong Wu)

##### 4.3.1 Burying sacred river stones

Sacred stones from the river nearby Amis home village symbolize the Amis ancestor spirits and stabilize the foundation of XiZhou as villagers' urban homes. The burying stones ceremony refers to the leader of the Xizhou tribe goes back to their tribal home and search for stones chosen by their ancestors' spirits along the river of their home village in Hualian.

As the symbol of spiritual foundations, these chosen stones would be brought back to their new urban home and buried along the new riverbank.

It has been challenging for Amis to stay in their XiZhou tribal homes, because the location is not legal. They have protested many times to fight for their aboriginal habitat rights to stay close to rivers. Even though the XiZhou urban tribe location is not legal from the perspectives of the Taiwanese urban zoning control system, the tribe people decide to permanent habit here since they have lived here for thirty-eight years. In order to make Xizhou as their permanent urban tribal homes, the ceremony of burying sacred river stones become very critical. The general chief of Xizhou tribe had to return to their hometown Hualian, the east of Taiwan. As an elected chief, he was the leader of the social organization in Taiwanese society and the spiritual symbol of Xizhou tribe in Amis culture. He socially and spiritually represented the entire Xizhou tribe to establish linkages between hometown and Xizhou tribe in this trip.

To make the Xizhou tribe as their permanent home, first of all, the Chief is in charge of searching for the sacred stones along the river in their Amis home village. During the ceremony, the Chief teams up with the tribe's priest when they tried to identify the sacred stones. They prayed together in the name of God, as well as the Amis ancestors. The tribe people also serve the stones traditional rice wine, fruits and sacrifice oblations. After the riverside ceremony at HuanLian home village, they drove the sacred stones back to XiZhou tribe, and they identify a riverside location to bury the sacred stones (figure 3). In the XiZhou ceremony, they repeat the same rituals step by step as what they had done in their Huanlian homes.



Fig. 3. The XiZhou tribe leader brought the sacred stones back to XiZhou and buried them in the riverside of the XinDian River.  
(Images provided by Jin-yong Wu)

#### 4.3.2 Mifoting (Amis language for fishing)

Mifoting means fishing in Amis language. Amis has much fishing related activities and wisdoms, because they are an aqua people. Fishing activities contain Amis moral system and their environmental ethical systems (figure 4).

### Mifoting - fishing

(阿美語捕魚的統稱)

- 傳統上，阿美族男性的公共漁獵空間，有資源共享的文化法則



Fig. 4. The XiZhou tribe residents perform “mifoting” in the XinDian River.  
(Images provided by Jin-yong Wu)

Traditionally, areas along the river including the river consider as the tribal territories shared by everyone, especial male. They often go fishing in the shallow side of a river or stream close to home. Shallow water is important, because they often build some provisional barriers to catch fishes. Everyone shares these areas and fishing together. From a practical aspect, they still need ways to temporarily define which areas belong to whom when they go fishing together. During the fishing season or before the fishing festival, the senior male of the household would set a bunch of *Miscanthus* (a type of strong grass) to mark the center of his temporary fishing territory. Therefore, others would not interfere with this fisherman. This way could also prevent the area from overfishing and sustain the fish sources of their home river.

In order to sustain the fishing culture, Amis develop various ways to engage the youth to join. For example, when they celebrate the Harvest Festival in the mid of the year, usually August, the Xizhou tribe will send out the youth group to catch fishes from the adjacent Xindian River. Even though the XiZhou tribe is an urban tribe, young Amis still get fishing training from tribe seniors. Young people supposedly practice how to use Amis special fishnets after school, and then perform fishing during the Harvest Festival. In addition to the XiZhou tribe youth, many young Amis from other communities in the metropolitan Taipei come to XiZhou to join the fishing performance. However, most of these kids might not have a shallow water to practice fishing.

#### **4.3.3 Badaosi (Amis language for gathering and sharing food)**

Badaosi originally means Amis tribe people share their fishes together after mifoting-fishing (figure 5). Lately, they badaosi any types of food, including Taiwanese snacks. Traditionally, tribe people get together to cheer for the male mifoting-fishing. After they get fishes, they will cook, eat, drink and sing together at outdoor areas together. Two types of Badaosi places are important. One is front door Badaosi places. The other is waterfront Badaosi places. Both

are public areas.

### Badaosi(戶外群聚聊天)

- Badaosi是傳統阿美族分享食物與生活的形態，也是社區日常交流活動的重心。
- 在水岸邊的Badaosi是族人在日常生活中親近水的方式之一，



Fig. 5. The XiZhou tribe residents have “badaosi” parties during daytime and after dark.  
(Images provided by Jin-yong Wu)

For the front door Badaosi places, the traditional Amis houses were built by the bamboo and wood which were collected from surrounding natural environments. Most of the Amis houses provide small open outdoor places for neighbors' gatherings. Everyone passed by could join. Everything shall be shared. In terms of the waterfront Badaosi places, the locations are in a flat area of riverbank. This type is usually for large group gathering, so that it needs a wide open area. Obviously, the riverside Badaosi often starts from mifoting-fishing.

Because of the changes of lifestyles, the XiZhou Amis people need to work in the city during day time. Badaosi is adjust to being an evening or night time casual events during weekdays, and all time events during weekends. Every Friday night, if you visit XiZhou tribe, you can join neighbors' Badaosi one after another!

## 5.0 Conclusion

While scholars in the field of CES devote efforts to establish the field, most of them study mono-cultural cases. This study expresses the tensions between the recreational orientated Han CES and the habitat orientated Amis CES along the urban waterfront of Taipei. Living in a global era, we are more likely to confront values of CES in our towns, cities and regions (Awang-Shuib, Sahari, & Ali, 2012). This case is a pioneering study and it suggests establishing open framework community participatory mechanisms for re-vision the Danshui River ecosystems. Indeed, in the metropolitan Taipei, we are urgently needs establish grassroots based cross-cultural design, planning, and governing mechanisms to both supports Amis urban riverside tribes and Han cultural citizens. Within a participatory way of planning and design waterfronts and shaping hybrid identities, ethnic groups could open up

the opportunities to understand each other's spiritual needs and emotional attachments of their surrounding landscapes.

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