台灣里山倡議夥伴關係網絡推動計畫之先期規劃(2-2)

委託機關：行政院農業委員會林務局

執行機關：中華民國自然生態保育協會

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一、 社會-生態-生產地景(Socio-ecological production landscapes and seascapes, SEPLS)

(一) 世界各地的社會-生態-生產地景

在里山倡議中，把這類由農村居民與周圍自然環境長期交互作用下，所形成的生物棲地和人類土地利用的動態鑲嵌斑塊（馬賽克）景觀，稱為「社會-生態-生產地景」，意思是透過農林漁牧等農業生產地景的經營，達到經濟、社會和生態永續性的目標。

這類「社會-生態-生產地景」分布在世界許多地區並賦予各種名稱，例如菲律賓的木詠（muyong）、烏瑪（uma）和大巴窯（payoh）；韓國的毛爾（mauel）；西班牙的德埃薩（dehesa）；法國和地中海國家的特樂裡斯（terroirs）；馬拉威和尚比亞的其特美內（chitemene）；日本的里山（satoyama）和里海（satoumi）；中國的風水林和田園等。這樣的耕作方式常稱為「生態農業」或「永續農業」，這些地區的共同點是以水資源的妥善經營和生物資源的永續利用為目標。

(二) 社會-生態-生產地景的重要性和威脅

對社會生態生產地景的有效經營，可提供廣泛的供應、調節、文化和支援的服務體系，從而有利於人類生活和當地居民的福祉，也有利於千年發展目標（MDGs）和有關國家發展政策的實施，同時增強當地社區成員的歸屬感和認同感。此外，社會生態生產地景的有效管理還有助於緩解和調適氣候變化，特別是透過保護和加強碳匯和碳庫（碳源）、減少溫室氣體排放、提高抗災能力等，以減少氣候變化在地景生態系統尺度上的負面影響。社會-生態-生產地景對生物多樣性公約實施也有重要作用，也可以透過加強與其他保護區之間的聯繫，保護更大地景尺度的範圍。

由於農村人口的銳減和老齡化等原因，許多社會-生態-生產地景被荒棄、或是受到無計畫的城市化、工業化和人口劇增進而對資源需求大增等壓力。這些地景的喪失或退化導致各種生態系統服務品質下降，造成原本依賴於這些地景的當地社區和周邊社區帶來嚴重後果。

(三) 里山：日本傳統農業地景和經營管理

1. 里山、里海的定義

里山（satoyama）的觀念比里海（satoumi）的觀念要早好幾個世紀產生。1661 年首次以間接的方式提到這個觀念，至於第一次單獨使用「里山」這名詞是在 1759 年，指的是圍繞著村莊、人類居住地和房舍的山區。直到 70 年代，大部分對里山的定義才包含人類居住靠近山區的地方，並利用當地的資源（譬如食物、燃料或作物的肥料）的概念。

日本傳統的地景包含許多其他不同的農村環境，譬如：耕地和果園、稻田、灌溉用的池塘和溝渠、村落與農場本身，里山地景正是由里山和這些環境所組成複合式的農村生態系。在里山地景內，許多不同種類的樹林、草地與濕地混合在一起，形成錯綜複雜的鑲嵌圖案，因此成為眾多野生動物的棲地，其中有許多是瀕危物種，另外也有助於防災、集水區保護及其他重要的生態系統服務 (圖 1)。

里海則是 1998 年才出現的名詞，指的是沿海地區的空間結構以及該區內對漁業資源的使用與經營。里海地區強調透過人為的幹預提高生物的生產力與生物多樣性。具體來說，這觀念的起源可追溯到瀨戶內海當地的沿海社區試圖努力瞭解人與海之間的關係 (圖 2)。

里山和里海是日本存在已久的傳統觀念，關於土地（里山）與沿海（里海）經營的操作方式。過去這些傳統讓里山和里海所涵蓋的資源得以永續地利用，為以往增進人類福祉的環境經營工作與資源經營的模式。這兩個觀念之中，里山存在的時間較長，可回溯到十七世紀，它指的是由各種不同生態系統包含次生林、耕地、灌溉池塘、草地與人類聚落鑲嵌而成的地景。人與自然之間長時間的互動形成並發展出這些地景，常見於日本的農村與城市周圍地區。

里山倡議以世界上類似日本里山地景(satoyama-like landscapes)的複合式農村生態系為對象，它是因人類的生活方式與大自然長時間的交互作用所形成。倡議的願景是謀求兼顧生物多樣性維護與資源永續利用之間的平衡。

2. 日本常見的里山地景類別

里山地景是由人為管理的環境所組成，因當地的居民從事農耕及林業而產生並維持之。日本常見的里山地景類別有：次生林地、稻田、灌

溉用的池塘和溝渠、牧場和草原等。這些也是台灣和許多亞洲國家常見的農村地景。

図４　里山の概念と特徴
ⓐ薪炭林，ⓑ人工林，ⓒアカマツ林，ⓓ屋敷林，ⓔ竹林，ⓕ草地，ⓖ水田，ⓗ畑，ⓘ水路・川，ⓙため池，ⓚ集落，ⓛ家畜（ウシ，ニワトリ），ⓜキノコなどの山菜，ⓝ草原の火入れ，ⓞ水路の保全，ⓟ雑木林・竹林の手入れ，ⓠ人工林の手入れ，ⓡ落ち葉かき・堆肥づくり，ⓢ炭焼き，ⓣシイタケ栽培，ⓤ神社，ⓥオオタカ，ⓦサンショウウオ，ⓧカワセミ，ⓨ農家・林家，ⓩハイカー

圖 1　日本里山特性和概念圖（UNU-IAS, 2010b: 13）

註：a:定期輪伐的林地，提供薪材與木炭 b:針葉林 c:赤松林 d:住家旁的林地 e:竹林 f:草地 g:水田 h:牧場 i:灌溉管道 j:灌溉池塘 k:小村落 l:牲畜(牛與雞) m:野菜與蕈類 n:草原火耕 o:維護灌溉管道 p:管理定期輪伐的林地與竹林 q:管理針葉林 r:收集落葉林地的樹葉製成堆肥 s:燒炭 t:椎茸(shiitake mushroom) u:神社 v:蒼鷹 w:日本山椒魚 x:魚狗 y:農夫與護林者 z:健行者

図５　里海の概念と特徴
ⓐ河川，ⓑ砂浜，ⓒ干潟，ⓓサンゴ礁，ⓔ藻場，ⓕ多様な魚介類，プランクトン，ⓗ栄養物質・砂，ⓘカキの養殖，ⓙ集落，ⓚ松林，ⓛ漁業者，ⓜ海水浴，ⓝ潮干狩り，ⓞ釣り人，ⓟ自然観察，ⓠ都市，ⓡ里山

圖 2　日本里海特性和概念圖（UNU-IAS, 2010b: 14）

註：a:河川 b:海灘 c:潮埔地 d:珊瑚礁 e:藻場 f:各種不同的魚類及蝦蟹貝類 g:浮游生物 h:營養物質與沙 i:牡蠣水產養殖 j:漁村 k:松樹 l:漁夫 m:海水浴 n:採集貝類 o:垂釣者 p:自然觀察 q:市區 r:里山

1) 次生林地：次生林地由定期輪伐的矮林與其他人為管理的林地組成，包含大多適於當作薪材及木炭的樹種，例如：橡樹和松樹。每十～三十年仔細地砍伐樹林，讓林地保持空曠及通風，因此成為許多野花理想的生長地點，例如：紫羅蘭、百合、龍膽與蘭花。

2) 稻田：日本人以稻米為主食已有兩千多年的歷史，稻田景觀的季節變化深深地勾起日本人的回憶。此外，春夏時節稻田裡充滿水，有些地區冬季又會再次灌水，因此稻田成為大片的濕地，為各種不同的野生動物提供了重要的棲地。

3) 灌溉用的池塘和溝渠：水是水稻耕作的必要條件。冰冷的春水在透過複雜的灌溉管道送入水田之前，先集中在小池塘裡並讓它的溫度升高。這些池塘和溝渠也成為水生植物與昆蟲的棲地,例如：蜻蜓和豆娘。青蛙、蠑螈以及青鱂魚這類的小魚在這裡繁殖。

4) 牧場與草原：次生草原包含飼養牲畜的牧場與大片的芒草或日本矮竹，它們可當作屋頂、籬笆圍欄以及各種不同的器皿的材料。草原的管理包括年伐與燒除，能為各種不同的野花、昆蟲、鳥類及小型哺乳動物創造出適合生存的棲地。秋天的景觀特色是大片的芒花在陽光下閃耀，成為里山地景經典的主題之一。

3. 日本里山地景的利用與管理

1) 傳統的矮林管理：管理方式包括夏季割去下層的灌木叢，冬季收集落葉做堆肥。伐木的週期為每十～三十年，但新的嫩芽立刻從樹樁長出。近年來木材燃料的需求減少，所以許多矮林被遺棄，林地因而恢復成茂密的灌木叢，導致生長在林底層的野花與其他需要開闊生存環境的物種消失。為維護生物多樣性，在兼顧人類活動與大自然的平衡下，適當地管理里山是非常重要的。

2) 稻田—豐富的濕地生態系統：稻田在生態上的功能是季節性濕地，它提供各種水生昆蟲、甲殼動物、魚類與兩生類棲息的環境，這些小動物轉而成為水鳥和其他掠食者重要的食物來源。位於狹窄山谷內和陡坡上的小水田因靠近林地，所以生物多樣性特別豐富，許多必須林地與水邊兼得的物種得以生存。然而人力短缺或無生產效率，使得這些小水田常被遺棄。近來認為必須保持與恢復豐富的水田濕地生態系的意識逐漸抬頭。

二、 里山倡議 (Satoyama Initiative)

(一) 里山倡議的緣起：相關會議與《巴黎宣言》

2010 年 1 月 29-30 日，聯合國教科文組織（UNESCO）在總部巴黎召開里山倡議的全球研討會。該會議是由日本國環境省（MOE-J）和聯合國大學高等研究所（UNU-IAS）共同主辦，並由聯合國教科文組織、聯合國環境規劃署（UNEP）和生物多樣性公約秘書處（SCBD）共同協辦。在此之前，亞洲舉行了兩次籌備研討會，第一次是 2009 年 7 月 25 日的東京籌備會，第二次是 2009 年 10 月 1－2 日的馬來西亞檳城籌備會。

該次全球研討會的目的，在於討論里山倡議的概念、架構和相關活動內容。參加該次研討會的有生物多樣性公約（CBD）締約方會議（COP）成員國、生物多樣性公約附屬機構—科學技術和工藝諮詢機構（簡稱科諮機構，SBSTTA）、政府機構並從事生物多樣性和社會發展研究的專家、學術機構和非政府組織以及與當地居民有密切合作的社區組織。會議對公眾開放，並由聯合國大學副校長武內和彥（Kazuhiko Takeuchi）教授、生物多樣性公約附屬機構科諮機構（SBSTTA）主席 Spencer L. Thomas 博士、國際公約和生物多樣性學系主任和柬埔寨環境部部長 Somaly Chan 女士、以及馬拉威國家植物標本館和國家植物園總幹事 James H. Seyani 教授等人共同主持。

該次全球研討會的與會者肯定日本政府和聯合國大學高等研究所為推動里山倡議的發展所作的努力。日本政府和聯合國大學高等研究所已開發和維護了一個里山倡議的網路平臺，2009年間在馬拉威、柬埔寨，墨西哥，秘魯等國，以召開研討會的方式共進行了 20 多個相關研究。

2010 年巴黎全球研討會的主要成果是由主席團發表的總結報告和《巴黎宣言》。該宣言的附件包含了里山倡議的相關目標、主題活動和運作機制等方面的詳細陳述。該次全球研討會的與會者並要求主席團向 SBSTTA 第十四次會議（於 2010 年 5 月 10-21 日在肯亞首都奈洛比市舉行）和生物多樣性公約第十次締約方會議（於 2010 年 10 月 18-29 日在日本名古屋市舉行）提送宣言。

(二) 里山倡議的啟動：聯合國第十屆生物多樣性公約大會 (CBD COP 10)

在世界各地，世代居住的農牧民以多樣化的自然資源為基礎，透過因地制宜的生產實踐活動，創造、發展、管理著許多獨具特色的農業系統和地景。2000 年的第五屆生物多樣性公約的締約國大會，決議將農業

與生物多樣性保育議題正式結合在一起，開始將農業生物多樣性納入公約的工作計畫之一（Programme of Work on Agricultural Biodiversity, PoW AgBD）。其後，聯合國糧農組織（Food and Agriculture Organization, FAO）於 2002 年推動「全球重要農業遺產系統（Globally Important Agricultural Heritage Systems, GIAHS）」夥伴關係倡議，目的在透過國際合作，以保存和維護這些遺產的農業生物多樣性、知識體系、食物和生計安全以及傳統農業文化。2010 年 10 月於日本名古屋舉辦之聯合國第十屆生物多樣性公約大會中，日本政府與聯合國大學高等研究所（UNU-IAS）更進一步提議《里山倡議國際夥伴關係網絡（The International Partnership for the Satoyama Initiative, IPSI）》。里山倡議內容與近年國際間討論農業生物多樣性保育、傳統知識保存以及鄉村社區發展等議題密切相關，且不僅著眼全球重要性之農業文化地景，更關注所有國家一般鄉村社區之生產、生活和生態之永續性。該倡議已成為第十屆生物多樣性公約大會通過之重要決定之一，值得國人關注。

(三) 里山倡議的概念架構 (Conceptual framework)

1. 願景和目標

里山倡議的總體目標是促進和支援社會生態生產地景，以增進對人類的福址，並增進生物多樣性公約三大目標（保育本土生物多樣性、永續利用其組成、公平分享由於利用生物多樣性遺傳資源所產生的利益）的實現。里山倡議可視為一種與生態系統方法相符的途徑，有助於執行公約「後 2010 年策略（Post 2010 Biodiversity Strategy）」計畫，特別是對 2020 年目標中有關：對農業、水產養殖業和林業等各領域的永續經營管理、對削減營養過剩（氮和磷）和其他來源導致關鍵生態系統污染的負荷、對受氣候變化和海洋酸化多重壓力影響的脆弱生態系統的管理、對農業生態系統中農作物和牲畜的遺傳多樣性狀況和野生近緣種遺傳多樣性狀況的改善、 對提高生物多樣性作用的認識、對保護或恢復陸地、淡水和海洋生態系統以提供關鍵服務和促進當地生計、對公平獲得必要生態系統的服務的需要、對傳統知識、創新和做法的保護、對當地居民和地方社區的權利的保護、以及對該公約執行能力（人力資源和財務管理）的加強等方面。

2. 「願景-方法-行動三摺法」 (Three-fold approach)

里山倡議的願景是實現社會與自然和諧共生的理想，為了讓以永續利用與管理土地和自然資源的地景得以受到保護與重建，里山倡議建議運用圖 3 的三摺法（a three-fold approach），包括願景、方法及關鍵行動面向。里山倡議的願景是實現人類社會與自然和諧共處；方法有三：確保多樣化的生態系統服務和價值、整合傳統知識和現代科技、謀求新型態的協同經營體系；關鍵行動面向有五：資源使用控制在環境承載量和回復力之限度內、循環使用自然資源、認可在地傳統和文化的價值和重要性、促進多元權益關係人的參與和合作、貢獻在地社會-經濟成長。綜合言之，里山倡議有下列四點原則 ：

1) 土地利用策略是依據複合式生態系統架構

亞洲農村地景的特徵是各種不同的森林和濕地等次生環境以鑲嵌式的空間結構與當地的地形緊密地結合，此土地利用方式創造出複雜的生態系統，得以保存該區的生物多樣性，並且為當地居民提供十分重要的生態系統服務，例如：集水區保護、防災、病蟲害防治、食物、燃料與木材。但是傳統鑲嵌式的土地利用方式轉變為單一作物連作後，複合式生態系統為人類帶來的益處消失或變質了。因此未來土地利用的策略必須建構在認清複合式生態系統的重要性之上，力圖兼顧生產與保護生物多樣性及生態系統服務之間的平衡。在目標區建立一份物種清單是擬定土地利用策略方向的第一步。

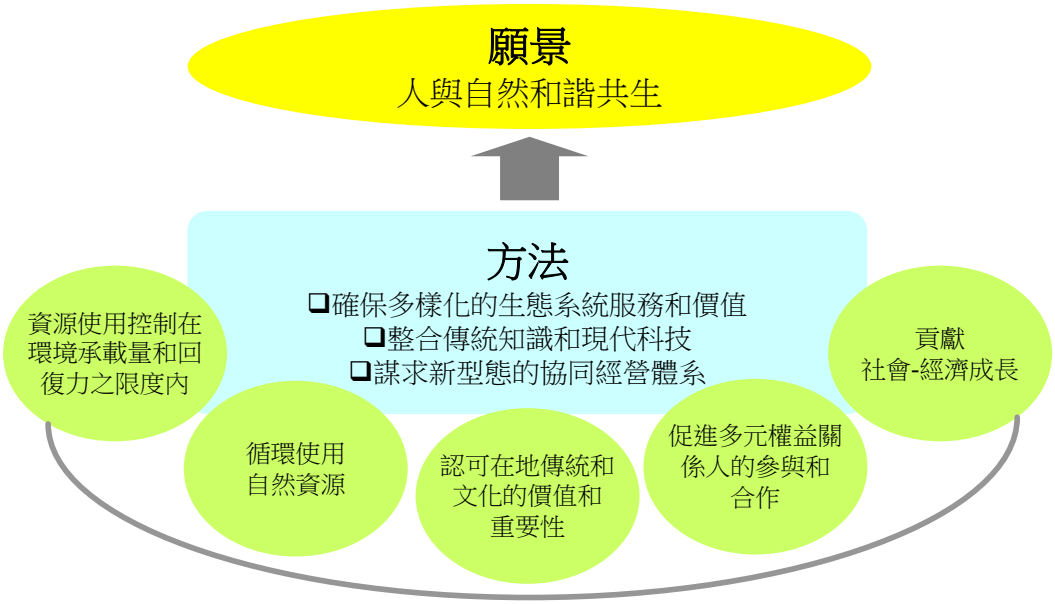

圖 3 里山倡議的三摺法：願景、方法和關鍵行動面向（UNU-IAS, 2010a）

2) 永續的資源利用是依據環境的承載能力與自然的恢復能力

永續的資源管理及土地利用策略應考慮每個區域個別的環境承載力與自然恢復力，設定在合理的範圍，否則會造成當地樹林和水資源的耗竭、土壤性質惡化與侵蝕、喪失生物多樣性及生態系統服務。生態農業、生態林業以及輪替的土地利用方式是永續策略中不可或缺的概念，再加上建立及監測環境指標。

3) 聚焦於當地社區的決策並以多方權益關係者的共識為基礎

永續經營管理策略的規劃、執行與評估應以共識決策方式為基礎。以當地社區為主體，但也積極徵求更多的權益關係者投入，例如：當地政府、非政府組織和生態系統服務所有的受益者，包括市區內的企業和消費者。以社區林業的概念為例，它提倡成立管理委員會，分區以達到利用、保育與更新三者間的平衡，以及提供環境教育。

4) 開發與保育取得平衡

永續經營管理策略解決農村貧困與開發的問題不能失敗。根據估計全球 75%的貧困者居住在農村，貧困及地景遭受破壞的惡性循環打亂了維持他們生計所需的生態系統服務，若不先中止這個循環更遑論保護生物多樣性。推廣生態旅遊以及創造當地對生物多樣性友善之產品的價值有助於農村的發展；在此同時，現代科技和科學與傳統知識及智慧結合以制定保育與經濟雙贏的策略。

第二節、 國際里山倡議夥伴關係網絡(IPSI)

一、 IPSI 相關活動

(一) IPSI運作架構(Operational Framework)的五個工作面向(Five Perspectives)

依據 2010 年《里山倡議巴黎宣言》，國際里山倡議夥伴關係網絡的相關活動可以分為兩個目標下的五個工作面向(圖 4)：

1. 增進對社會-生態-生產地景重要性的瞭解，包含下列三個工作領域：

   1) 知識促進（knowledge facilitation）：通過收集、分析和比較個案研究，交流各國經驗和教訓，並將這些知識運用於能力培育工作中；

   2) 政策研究（policy research）：主題包括促進生態系統穩定的服務、在傳統生態知識體系和現代科學之間建立橋樑、探索「新共用（new common）」或協同經營的新途徑、維護或復育社會-生態-生產地景、整合相關政策等；

3) 指標研究（indicator research）：探討人類福址和社會-生態-生產地景回復力之間的關聯性，發展可衡量的指標；

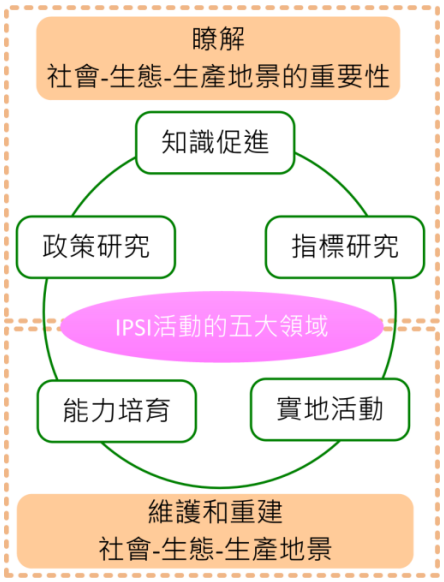

圖 4 IPSI 推動架構的五個領域（UNU-IAS, 2014）

2. 維護和重建社會-生態-生產地景，包含下列兩個工作領域：

4) 能力培育（capacity building）：通過教育普及、資訊傳播以及各類培訓活動來增進對里山倡議的瞭解和推行能力；

5) 實地活動（on-the-ground activities）：針對上述四個領域，透過各會員組織的個別計畫(即個案研究, case studies)或會員組織間的合作計畫（collaborative activities），從事里山倡議的研究和實務的相關行動。據 2013 年 9 月統計，IPSI 執行委員會核備了 29 項合作計畫。

(二) IPSI全球會議(Global Conference)：會員大會(Assembly)和公共論壇(Public Forum)

IPSI 的定期全球會議的兩項功能是會員大會和公共論壇。會員大會由 IPSI 會員組織的代表參與，目的是檢視 IPSI 整體活動並就制度運作做決策。會員大會聽取執行委員會(Steering Committee)執告，並就必要事項進行集體決策。

IPSI 公共論壇開放給會員和非會員參加，目的有二：1)強化 IPSI 會員之間的合作和協調，以及里山倡議與其他相關計畫的合作和協調；2)增進社會-生態-生產地景的瞭解並提昇公眾覺知。

(三) 案例研究(Case Studies)

IPSI 會員的案例研究以及其他有關社會-生態-生產地景成功案例的知識和訊息的蒐集和分享，有助於瞭解社會-生態-生產地景的重要性並促進其保全活用。

二、 IPSI 組織架構

(一) 會員申請和入會資格(Membership)

IPSI 會員組織涵蓋國家和地方政府機構、其他政府相關組織、非政府組織和公民團體、原住民和在地社區組織、學術、教育和研究機構、企業和私部門組織、聯合國或其他國際組織等。據 2014 年 10 月統計，IPSI 會員數已達 164 個，分布於全球各地並來自不同的層級和部門。

會員資格的申請需陳述其在社會-生態-生產地景的專業和相關活動，並由執行委員會核可(約一季召開乙次會議)。依據里山倡議國際夥伴網絡運作架構，成為會員之義務有：a)協助推動里山倡議的願景和目標；b)執委會認可成為會員後，需在 6 個月內提送至少一處有關社會-生態-生產地景的案例報告；c)會員需持續推動案例相關工作；d)會員需積極參加所有或部分的里山倡議國際夥伴網絡相關活動；d)會員需積極參加里山倡議國際夥伴網絡相關會議，包括網際網路會議。

(二) 執行委員會(Steering Committee)

執行委員會負責推動 IPSI 運作、提供或核備 IPSI 相關活動的實施指引、提供 IPSI 秘書處相關指引、提供會員大會相關建議、回應會員大會的要求、核定新會員申請、促進 IPSI 夥伴關和資源分享等。執行委員會由有興趣參與的 IPSI 會員中選拔而組成。

(三) 秘書處(Secretariat)

IPSI 秘書處負責支援 IPSI 會員達成願景和目標、籌備 IPSI 全球會議及其它相關會議、促進 IPSI 會員間以及與其他組織的交流、推動合作計畫、促進公眾瞭解和認同等工作。

三、 IPSI 策略(IPSI Strategy)和行動計畫(Plan of Action 2013-2018)

(一) IPSI策略

《IPSI 策略》文件在 2012 年 10 月第三屆會員大會中通過，內容包括五個分項和附錄：引言、願景、任務、策略目標、追踪和報告，附錄則詳列各個策略目標的操作指引和可能活動。《IPSI 策略》將提供秘書

處、執行委員會和所有會員用於溝通里山倡議實施架構、配置資源和評估進展。

1. 願景(Vision)

里山倡議的願景是保全活用社會-生態-生產地景，以增進對人類的福址，並促進實現生物多樣性公約三大目標（保育本土生物多樣性、永續利用其組成、公平分享由於利用生物多樣性遺傳資源所產生的利益），邁向「人類與自然和諧共生」的境地。

2. 任務(Mission)

1) 與會員或非會員組織推動和支持社會-生態-生產地景的觀念和實務，積極邀請從事於社會-生態-生產地景經營的相關組織參與，增進不同社群和文化對於複雜的地景和海景中居民生計和生態系服務的相關知識和經驗交流；

2) 維護或增進社會-生態-生產地景貢獻於：里約公約(Rio Conventions)[1]和相關協議、永續發展目標(例如「千年發展目標(Millennium Development Goals)」)、生計和人類福祉等。這項任務特別適用於「聯合國沙漠和抗沙漠化十年 2010-2020(United Nations Decade for Deserts and the Fight against Desertification 2010-2020)」以及「聯合國生物多樣性公約十年 2011-2020 (United Nations Decade on Biodiversity 2011-2020)」；

3) 促進對環境、生計和社區福祉的實地惠益。

3. 策略目標(Strategic Objectives)

1) 目標 1：增加里山倡議社會-生態-生產地景的知識和瞭解；普及下列相關訊息予決策參考，包括：社會-生態-生產地景的價值、歷史、狀態、正負面影響因素和變化趨勢、傳統和現代永續經營知識、與國家法規和國際條約的相關性，特別是生物多樣性公約第 8(j)條有關傳統知識、創新和實踐等相關訊息；

2) 目標 2：探討造成生物和文化多樣性、社會-生態-生產地景的生態和社經功能的減損和喪失之直接和間接因素，進而維護功能仍良好的、以及重建、活化或復育功能已喪失或退化的社會-生態-生產地景；

[1] 里約公約指生物多樣性公約(Convention on Biological Diversity, CBD)、聯合國氣候變化綱要公約(United Nations Framework Convention on Climate Change, UNFCCC)、聯合國防治荒漠化公約（United Nations Convention to Combat Desertification, UNCCD）

3) 目標 3：透過支持行動來增進生態系統服務對人類的福祉，增加社會-生態-生產地景的惠益。

4) 目標 4：增進人員、組織和永續財務等實踐里山倡議的能力，促進里山倡議相關議題和價值的主流化，並有效推動適當政策。

(二) IPSI行動計畫2013-2018

2012 年 10 月第三屆 IPSI 會員大會中通過了《IPSI 策略》後，執行委員會即著手規劃《IPSI 行動計畫 2013-2018》五年計畫，並於 2014 年完成文件出版。行動計畫內容係就《IPSI 策略》的四項策略目標，分別條列 2013-2018 年間優先執行的重點工作，除了以具體行動促進社會-生態-生產地景的保全活用，也有助於生物多樣性愛知目標(Aichi Biodiversity Targets)以及其它有關聯合國千年發展目標的達成。

四、 IPSI 合作計畫與「里山發展機制」

「實地活動」是里山倡議國際夥伴關係網絡運作架構的五大工作面向之一，目標是「透過各會員組織的個別計畫或會員組織間的合作計畫，從事里山倡議的研究和實務的相關行動」。據 2013 年 9 月統計，IPSI 執行委員會核備了 29 項合作計畫，其中一項為「里山發展機制(The Satoyama Development Mechanism, SDM)」，係由全球環境策略機構(IGES)、聯合國大學高等研究所(UNU-IAS)以及日本環境省(MOEJ)於 2013 年 5 月聯合啟動的 IPSI 合作計畫。

里山發展機制計畫的目的在於提供「種子基金(seed funding)」，鼓勵 IPSI 會員提送具成功潛力的計畫，申請美金一萬元內的小額補助。提案計畫類型分下列四種：社區本位的實作計畫、研究計畫、促進會員間合作的觸發計畫（例如舉辦會議、工作坊和大型研討會）、能力培育和 IPSI 宣傳計畫（例如製作環境教育相關資料、傳播和外展活動等）等。

2013 年共有 19 項提案計畫，通過補助 6 項，其中之一是國際自然生態保育學會的提案「將茶園害蟲轉為盟友：台灣花蓮一處里山地景案例(Converting pests to allies in tea farming- a potential case of Satoyama landscape in Hualien, Taiwan)」[2]；2014 年共有 20 項提案計畫，通過補助 6 項，其中之一是國立東華大學的提案「里山倡議融入國家和地方脈絡：以台灣一處原住民社區水稻田文化景觀的協同規劃過程為案例(Tailoring Satoyama initiative concepts to national and local context: A Case Study of the collaborative planning process of a Rice Paddy Cultural

[2] http://www.iges.or.jp/en/natural-resource/bd/sdm2013.html

Landscape in an Indigenous Community, Taiwan)」[3]。其實，台灣各地實務案例若能以整理和論述，相信還有許多處可以和國際社群分享並獲得肯定。

第三節、 生態農業的緣起及相關概念

生態農業是以一個地景(landscape)或生態系的尺度，對農業、生物多樣性保育以及農村生計的永續性，採取一種全面整合及推動的方法(圖 5)。生態農業重視經濟和生態間的互動關係，也特別看重農業、生物多樣性和生態系統的相互依存關係(Scherr and McNeely, 2008)。生態農業將農村社區視為生物多樣性和生態系服務的關鍵管理者，在生態農業的地景範圍中，耕地、周圍的半自然(例如次生林)和自然區域，提供了供給、調節和文化等生態系服務(圖 6)，而這些地區的資源往往是由當地社區和農夫所擁有或管理。

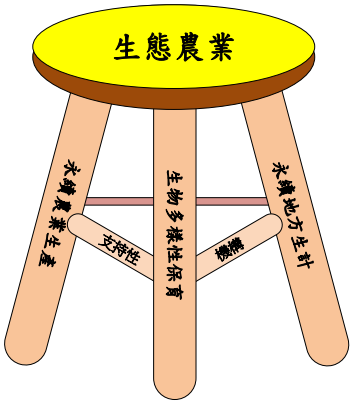

圖5 可視為三腳板凳的生態農業 (Scherr and McNeely 2007 23)

生態農業的地景特徵，是由農業生產環境與周圍的半自然和自然地區所組成的鑲嵌斑塊，地景是一個在地生態系統的群集體，是一種特殊的地形地貌、森林、水文、植被、土地利用和鄉村聚落的整合性結構。生態農業的目標，在於維持生物多樣性和生態系服務、支持永續的農業生產、並提升農村居民的生計和生活品質(圖 7)。有效的生態農業系統，通常需要建立在上述生態、經濟和社會(三生)永續目標的共同經營，並盡可能減少目標之間的衝突。

[3] http://satoyama-initiative.org/en/sdm-2014-results-announcement/

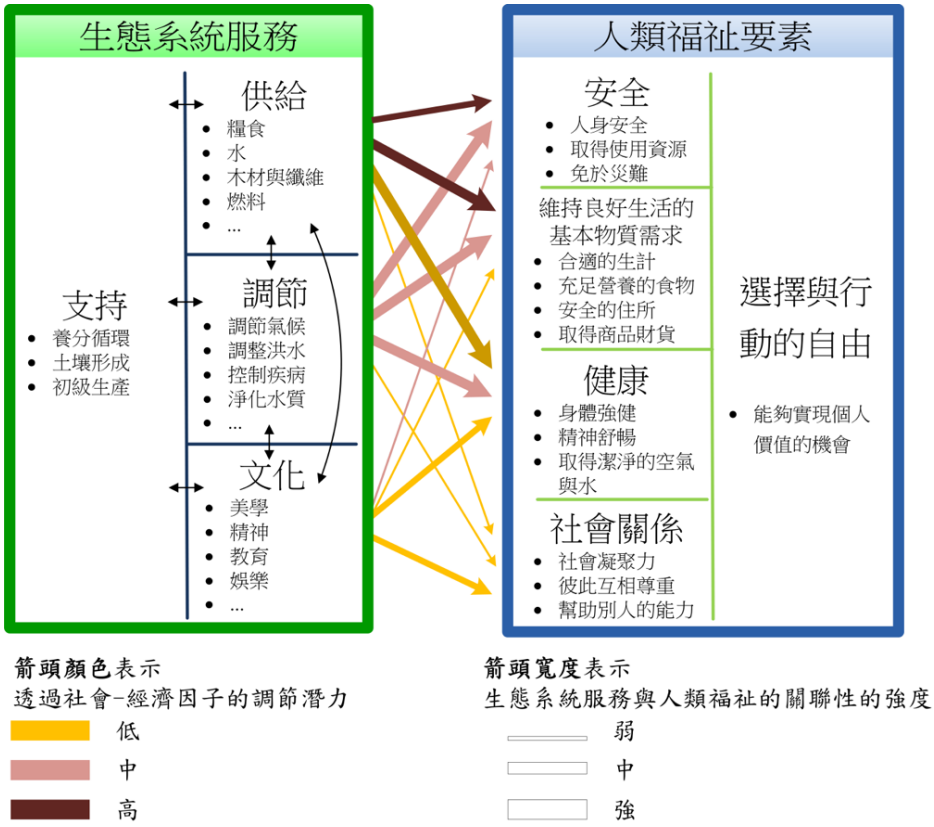

圖6 生態農業著眼於生態系統服務與人類福祉之間的關係（依據Millennium Ecosystem Assessment, 2005)

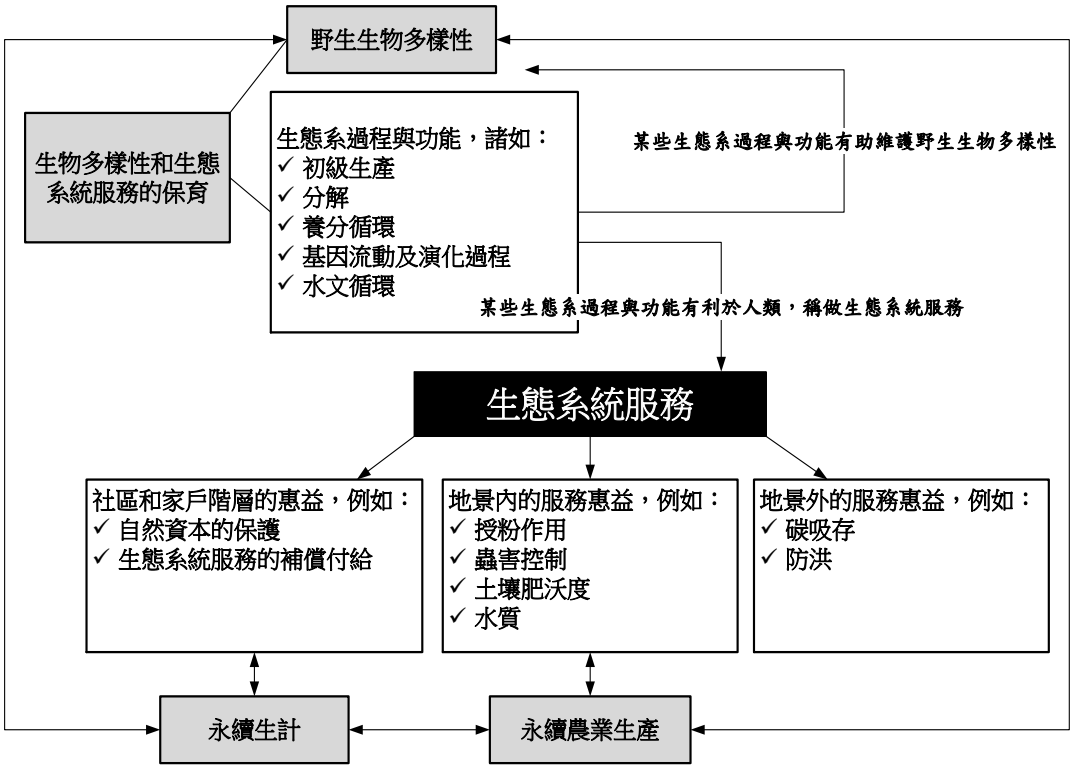

圖7 生態系統服務是保育、永續農業生產以及永續生計等三者間協同增效的關鍵概念 (Scherr and McNeely 2008: 481)

生態農業的觀念和名稱，源自 Jeffrey McNeely 和 Sara Scherr 在 2003 年的書籍《生態農業：餵養世界和保育野生生物多樣性的策略 (Ecoagriculture: Strategies for Feeding the World and Conserving Wild Biodiversity)》(McNeely and Scherr, 2003)。一個國際性非盈利組織「生態農業夥伴 (EcoAgriculture Partners)」亦於 2002 年在美國華盛頓特區成立，致力推動生態農業的主張，該組織隨後也成為「里山倡議國際夥伴關係網絡 (International Partnership for the Satoyama Initiative, IPSI)」的重要會員之一。

Scherr & McNeely (2008)指出，國際上已有許多與生態農業目標一致的理念，如環境友善農法，樸門農法(Mollison, 1990)、保育農業(FAO, 2001)、混農林業(Huxley, 1999)、有機農業(IFOAM, 2000)和永續農業(Pretty, 1999)等。這些農法的重點在於維持農業生產的資源基礎，並透過管理營養循環、保護授粉媒介和有益微生物、保持土壤健康和涵養水源等方式，以減少耕作區域的生態足跡、毒性物質、土壤擾動和水汙染的損害。然而，大部分農法僅聚焦在農耕地尺度內行動，而非整體的生態地景尺度。

生態農業的經營管理，不能只限於傳統農田或小區塊農場的尺度，而是著眼在更大範圍的地景尺度，並且以所有的地景元素作為整體的思考。而生態農業所涉及之「地景」一詞的功能性定義，便是指透過權益關係人的協同參與合作，以實現農村永續發展的生態(生物多樣性)、生產(生計)和生活(社會與文化)目標，所需要的經營管理的空間單位(Scherr & McNeely 2008)。這種地景尺度的生態農業，通常透過下列三種方法以實現目標：(1)生物多樣性的保育與永續利用、(2)滿足糧食需求、(3)提升農村生計 (Ecoagriculture partners, 2015)，值得臺灣加以借鏡，以發展適用於臺灣的生態農業政策。

第二章、台灣里山倡議發展現況與推動策略

里山倡議自從 2010 年底引進台灣後，受到政府和民間的歡迎，台灣各地符合里山倡議精神、從事農村生產地景保全活用的案例也愈來愈多。林務局近年推動水梯田暨濕地生態復育工作，即積極回應國際里山倡議和生物多樣性愛知目標。其中包括「八煙聚落」保有傳統水梯田砌石圳道灌溉系統、砌石三合院、水中央等特殊人文地景，並修繕八煙出張所為聚落小賣店，銷售聚落生產之農產品及手工藝藝品,讓在地小農的收益比以往增加約 10 倍，也讓第二代願意回鄉深耕;「貢寮水梯田」生態系統豐富，物種超過 500 種，還有珍貴的保育類動物—食蟹獴出現，展現人與自然和諧共生的美景；花蓮豐濱鄉「港口部落」原本遍布著大面積層疊的阿美族傳統水梯田，因逐漸休耕灌溉水路傾頹失修水田陸化，在林務局提供經費及族人與耆老的協助下將水源引回田區，當地睽違 20 年的「海稻米」也試種成功，眾人的心中充滿感動等。以保存現有之珍貴水梯田與埤圳生態環境，引導農民採取生態友善耕作或有機農業方式生產、種植具文化與休閒市場價值之傳統作物，創造兼具生物多樣性保護與永續發展之經典案例，希望能起帶頭作用，讓各項作為能將永續經營、維持生物多樣性的理念融入其中。

前述案例實際操作雖已有具體影響和成效，惟展望未來，仍有許多挑戰及亟需調整修正者，本文借鏡國際里山倡議及其夥伴關係網絡之運作架構，首先分析台灣推動里山倡議的機會和問題，繼而提出未來推動台灣里山倡議的整體策略架構（包括策略目標、策略架構、運作架構和工作面向等）之若干想法，提供林務局未來研訂台灣里山倡議相關政策和推動計畫之參考。

第一節、台灣推行里山倡議的機會和問題分析

一、台灣推動里山倡議的發展概況

台灣自 2010 年底引進里山倡議概念和作法，受到各界重視。特別以林務局為首，在政策研究和實務推動計畫上給予支持，奠定里山倡議在台灣發展的基礎。目前，台灣各地符合里山倡議精神、從事「社會-生態-生產地景」保全活用的相關案例愈來愈多，至少包括：

1) 農委會林務局：以里山倡議為主題，與台北大學、屏東科技大學、東華大學及相關民間社團合作，協助下列地區推動水梯田濕地生態復育、社區林業及相關計畫：生態工法基金會於新北市金山區八煙聚落，協助休耕的水梯田進行生態友善復耕並促進在地產業復甦，繼而倡導「金山倡議」；人禾環境倫理基金會於新北市貢寮吉林，協助推動水梯田環境友善復耕、監測生態復育效益並發展體驗產業；花蓮豐濱鄉港口部落的觀光產業發展協會從事地景藝術創作、水田生態友善復耕和原住民產業發展；觀樹教育基金會於雲林口湖鄉成龍濕地，以生態補償、國際環境藝術節等方式，協助里海濕地的復育、永續漁業和環境教育；台南市野鳥學會於台南官田經營台南市水雉生態復育及環境教育園區；屏東大學在屏東霧台鄉協助阿禮部落發展里山倡議為主題的生態旅遊產業；東華大學在花蓮富里鄉豐南村協助社區發展融入里山倡議目標的阿美族少年解說員培訓課程。

2) 文化部文化資產局與各地方政府文化局：文化資產保存法在 2005 年大幅修正後，增訂了「文化景觀」新項目，類別包括「農林漁牧景觀」，可說是與里山倡議相關的法規。依據 2014 年 8 月的統計，各地方政府依文化資產保存法登錄和公告的文化景觀共計有 46 處，其中有 5 處登錄地與里山倡議的「社會-生態-生產地景」有關，包括澎湖七美雙心石滬、澎湖吉貝石滬群、花蓮縣富里鄉豐南村吉哈拉艾、蘭嶼鄉朗島部落傳統領域以及池上萬安老田區等文化景觀地。這 5 處「類里山、里海地景」的文化景觀，係各地特定文化族群的常民，為了生活和生計，與大自然環境長期互動而產生的地景和海景，符合里山倡議的以人地和諧共生為目標的新農業景觀。

3) 內政部營建署各國家公園管理處：營建署如台江國家公園的黑面琵鷺覓食區，推廣傳統淺坪式虱目魚養殖，促進對黑面琵鷺友善的生態魚塭經營；太魯閣國家公園與慈心有機農業發展基金會合作，在西寶農場推廣有機耕作，逐步促進中橫沿線高山農業的轉型；陽明山國家公園開始針對周邊十八份等聚落的水圳和梯田農業文化景觀，進行保育和永續經營策略研究；玉山國家公園南安部落有機水田推廣；壽山國家自然公園成立里山學校等。

4) 學術研究和農業試驗及推廣單位：台灣大學建築與城鄉研究所在坪林推廣環境友善農法的「台灣藍鵲茶」系列茶品；農委會花蓮區農業改良場除推廣有機稻

米種植和認證，並在花蓮富里鄉進行以無脊椎動物作為水稻田農業生物多樣性指標的先驅性研究，另在花蓮原鄉部落協助推動環境友善農業，以及在宜蘭三星鄉行健有機村發展有機「魚焚共生」栽培模式。

5) 民間團體方面，慈心有機農業發展基金會與林務局合作推廣「綠色保育標章」及「綠色保育農產品」;觀樹教育基金會於苗栗苑裡淺山丘陵區成立「裡山塾」，推動食農教育和里山體驗活動；花蓮瑞穗鄉富興生態農場與在地農民、工作假期志工、東華大學、林務局花蓮林區管理處、農委會花蓮農業改良場、台糖公司及相關民間組織合作，創立「與環鷸雉和諧共生」為目標經營的生態農場實驗地。

6) 其它：國內各地操作生態友善農法以從事農、林、漁、牧等兼顧產業、生態和社會效益之案例尚多，亦符合里山倡議的精神和作法，惟有待調查和整理。

二、 台灣推動里山倡議的問題分析

台灣推動里山倡議的問題面，可分下列四方面檢討：

(一) 必須有整體性政策和策略規劃

雖然，里山倡議概念引進台灣後受到政府和民間爭相仿效，各地報導符合里山倡議精神的相關案例也似乎愈來愈多，但是相較於廣大的農業生產環境仍為慣行農法之化肥、農藥和除草劑所污染。據統計，有機農法之推廣面積僅占耕地 1%，其它生態友善農法之面積更有限，台灣現有里山倡議之案例可能只如暗夜中的星光。如何在台灣鄉村地區推廣生態友善農法以增進農業生產環境的「三生」效益，需要在制度面上有整合性的創新作為。

再則，目前國內除林務局最早倡導或支持里山倡議，然仍有其他單位包括國家公園、文化資產局和部分縣市文化局、農業試驗研究和推廣單位、民間保育團體和社區組織等共同努力。近年間僅有林務局在國內召開全國性或國際性里山倡議相關會議，提供階段性訊息的宣傳和交流機會，各單位則在自身轄管或業務範圍內自行摸索操作，，缺乏群策群力的問題溝通和知識交流平台，也尚未有公部門承担全國性倡導者角色，。林務局過去數年推動的水梯田濕地生態復育相關示範計畫，雖具宣導成效，仍需要全面性和整合性的推動政策和策略。

(二) 需強化學術研究和實務經驗之知識性分析與交流

里山倡議概念引進台灣後，就如永續發展、生態旅遊等概念名詞，大部分人容易就字面上簡單理解後，就做出不同的解讀和詮譯，造成共識面和行動面的分歧。里山倡議引入台灣近四年，雖已有一些就國際里山倡議的核心概念、價值、目標、推動架構和案例等的研究報告、論文和科普文章，然而對國際里山倡議之緣起背景脈絡、運作機制、先端發展議題以及國際範例內容之分析仍不夠深入，因此在所謂學習和借鏡國際里山倡議的精髓和作法上，報導面相及深度上稍嫌不足；此外，雖說台灣有不少符合里山倡議精神之案例，但該等案例較缺乏學術研究方面的綜合性調查、分類和分析，及實務工作者之間的知識、經驗方面的交流和討論。因此，台灣目前急需要建立本土之里山倡議論述與實踐架構。

(三) 需建立能力培育機制

里山倡議需要實務工作者的實踐為先鋒，也需要公眾支持為後盾。因此，對實務工作者的能力培育是極優先的重要工作，目前雖已有若干公部門支持製作或民間參與報導之公眾宣傳性質媒體，讓公眾初步瞭解里山倡議的目標和作法。但是，目前台灣本土案例中，既有的實務工作者各自摸索可行之道；有興趣加入的新實務工作者則不得其門而入。因此有必要針對實務工作者進行里山倡議相關的能力培訓課程、工作坊等活動，讓想參與之夥伴，能共同加入實踐里山倡議的行列。

(四) 需建構台灣以里山倡議完整架構引導的實踐案例

台灣雖說有不少符合里山倡議精神之案例，但目前仍還未有以國際里山倡議完整架構引導的實踐案例，同時這類案例之詳細規劃、執行過程、經營管理架構和實施成效等分析性報導也較少。因此，目前的本土里山倡議案例，大多是成果性的展現和解說，不利國內外其他地區實務工作者的借鏡和參考，因此有必要藉由國際里山倡議所發展出來的架構為共同語言，蒐集台灣本土完整實踐案例，以能與國際接軌，相互學習。

第二節、推動台灣里山倡議的策略架構

(一) 推動台灣里山倡議的國內外政策依據

1. 第三屆聯合國永續發展高峰會（Rio+20）政策宣言

第三屆「聯合國永續發展高峰會」於 2012 年 6 月 20-22 日於巴西里約熱內盧召開，並發表政策宣言『我們要的未來』(the Future We Want)，其中有：「我們需要全面性和整合性的方法來促進人類與自然和諧共生的永續發展模式，並且引導人類從事復育地球生態系的健康和完整性的工作...我們同意促進國際合作和夥伴關係...願景是與大自然和諧共生」。這段話和里山倡議的目標和方法相一致，里山倡議國際夥伴關係網絡正是透過國際合作來達成上述目標。

2. 生物多樣性愛知目標（Biodiversity Aichi Targets 2011-2020）與里山倡議

《生物多樣性公約》第十屆締約方會議（CBD COP10）於 2010 年 10 月 18-30 日在日本名古屋舉辦,並提出 2011 年至 2020 年生物多樣性的新目標《愛知目標》。愛知目標的願景（vision）是「與自然和諧共生（Living in Harmony with Nature）」，具體而言則是「在 2050 年底前完成生物多樣性的評價、保育、復育和明智利用，維護生態系統服務，持續一個健康的星球，並提供所有人類基本的惠益」。在愛知目標的願景下，擬訂了 5 類策略目標（strategic goals）和 20 項愛知生物多樣性目標(targets)，作為各國擬訂生物多樣性國家策略和行動計畫（national biodiversity strategy and action plan）的依據（圖 9）。

上述《生物多樣性公約》第十屆締約方會議中，聯合國大學高等研究所（UNU-IAS）與日本環境省宣布推動「里山倡議國際夥伴關係網絡（IPSI）」，作為實現生物多樣性愛知目標的重要工具之一。至今 4 年餘已吸引全球近 164 個會員組織加入，召開了 5 次國際，方法，希望藉由分享各國經驗和範例，促進愛知目標「人與自然和諧共生」的實現。

依據聯合國大學高等研究所（UNU-IAS）與地球環境策略研究機構（IGES）於 2013 年聯合發表的政策性文件《里山倡議的社會-生態-生產地景關於主流化生物多樣性永續利用的貢獻（Contributions of the Satoyama Initiative to mainstreaming sustainable use of biodiversity in SEPLs）》，里山倡議和下列 9 項生物多樣性愛知目標有關，包括：目標 4-自然資源永續利用、目標 6-永續漁業、目標 7-永續經營管理區、目標 11-保護區、目標 13-農業生物多樣性、目標 14-基本生態系統服務、目標 15-生物多樣性與碳儲存、目標 18-傳統知識、目標 19-生物多樣性知識（圖 8）。

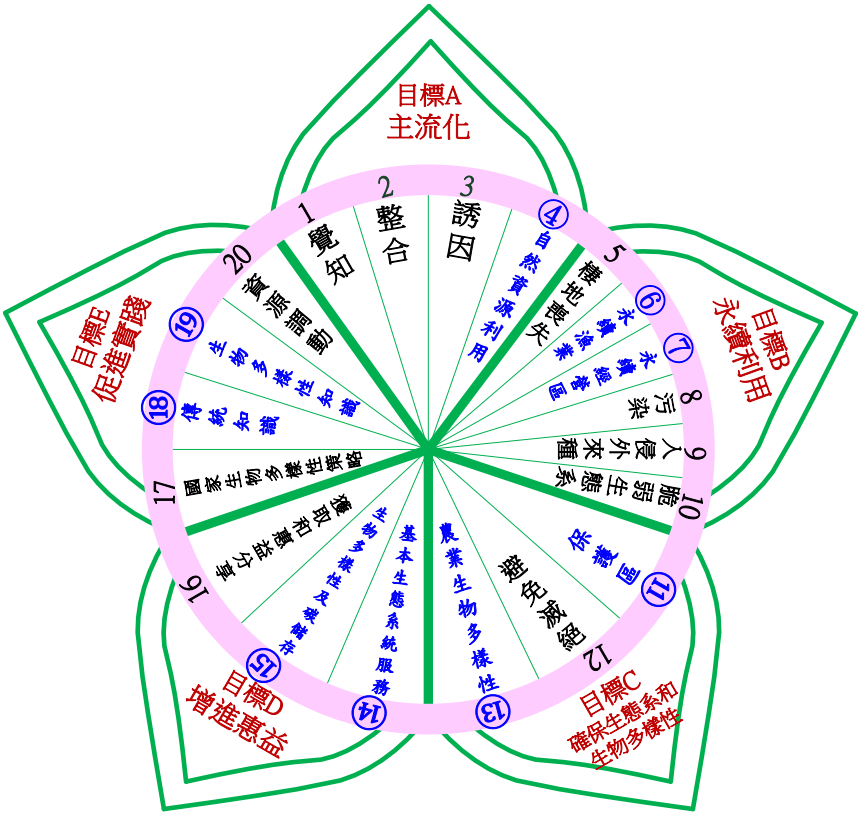

圖 8 里山倡議關聯於 9 項生物多樣性愛知目標(藍色標楷字)

3. 聯合國「國際家庭農耕年」及拉姆薩公約「濕地與農業—成長的夥伴」主題年

為配合國際家庭農耕年，國際最重要的濕地保育公約—拉姆薩公約（Ramsar Convention）的秘書處，把「2014 年世界濕地日」的主題訂為「濕地與農業—成長的夥伴（Wetlands and Agriculture: Partners for Growth）」。留意近年全球環境議題的人可以發現，把農業、水和濕地保育及利用等問題作整體思考以解決環境問題，已成為國際重要的趨勢，這樣的觀點也和里山倡議不謀而合。

4. 林務局生物多樣性推動方案

為配合生物多樣性公約，林務局自 2001 年起研擬適於我國之「生物多樣性推動方案」，並協調各部會共同執行生物多樣性工作，至 2007 年完成第一階段工作後，配合「國際 2010 生物多樣性目標」修訂行動計畫，計 6 大目標 38 項行動計畫。林務局作為台灣生物多樣性保育的政策制定主管機關，國際里山倡議則是為積極回應生物多樣性愛知目標（2011~2020 年）而啟動。而里山倡議涉及面向廣（9 項愛知目標），需要多元權益關係人參與，里山倡議國際夥伴關係網絡之運作

已有制度和方法可資借鏡，以林務局作為台灣里山倡議之政策制定和推動主管機關、以及台灣里山倡議夥伴關係網絡之召集機關，既有開創性又有具體架構可借鏡，因此，林務局作為台灣里山倡議的政策制定和整合計畫之推動者，可謂名正言順，正好配合 2020 年愛知目標期限前，實可把握此難得的新政策制定和推動的好時機。

(二) 推動台灣里山倡議的策略目標

以「生物多樣性愛知目標 2011-2020」為指引，借鏡里山倡議國際夥伴關係網絡之運作機制，建立台灣里山倡議夥伴關係網絡；透過里山倡議整合性策略規劃和計畫推動，促進學術理論和實務經驗之知識探討和交流，進行實務工作者能力培育活動，鼓勵以里山倡議完整架構引導的實踐案例，據以建構台灣里山倡議的本土論述和實踐經驗模式，積極與國際社群分享，並貢獻於生物多樣性愛知目標之達成。

(三) 推動台灣里山倡議的策略架構

策略架構分國內和國際兩方面(圖 9)；

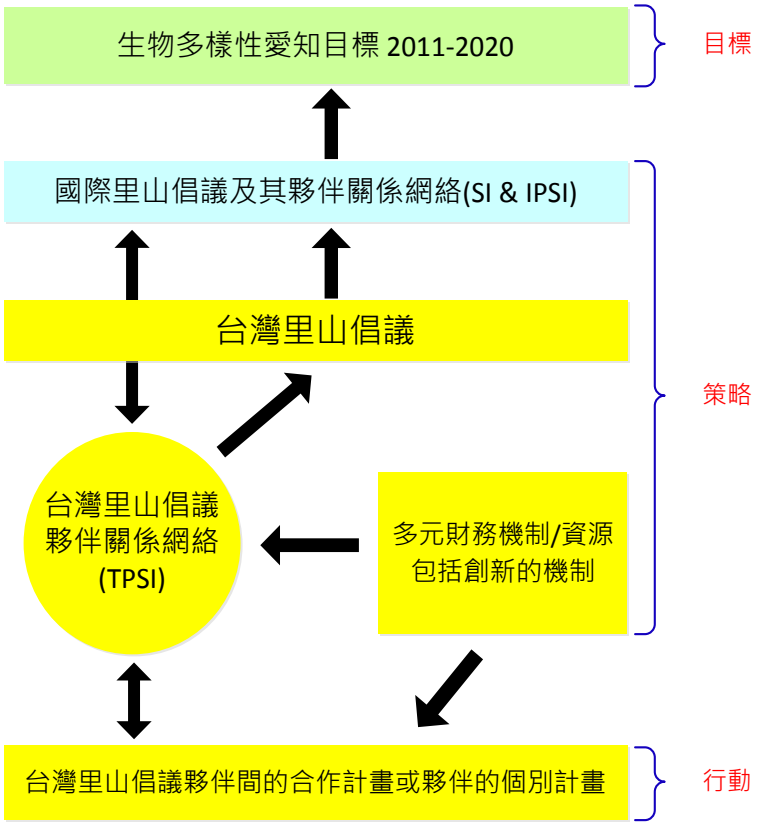

圖 9 推動台灣里山倡議的策略架構圖

國內方面，林務局應以生物多樣性公約的主管機關立場，透過整合性計畫統整建立台灣里山倡議夥伴關係網絡（Taiwan Partnership for the Satoyama Initiative, TPSI），邀請相關公部門、學術和試驗研究機構、社區和民間團體等實務工作者相關組織、綠色企業等參與台灣里山倡議相關工作，並尋求多元財務機制和資源，鼓勵或支持進行夥伴之間的合作計畫或夥伴的個別計畫。

國際方面，借鏡里山倡議國際夥伴關係網絡（IPSI）的運作機制及相關指引，鼓勵國內相關機構和組織加入 IPSI 會員，藉參與 IPSI 年度會員大會、相關會議和網站訊息交流，借鏡他山之石和分享我國成果。

(四) 推動台灣里山倡議的運作架構和工作面向

本文以全球思考（think global）、國家適用（adapt national）、在地行動（act local）為互相關聯的層級概念，將推動台灣里山倡議的運作架構分為相互支援的兩個工作目標和五個工作面向（圖 10 及表 1），分述如次：

1. 工作目標一：分析社會-生態-生產地景的現況和問題並提出對策性建議

工作面向有三：

1) 國際參與（international participation）：對外，鼓勵國內相關機構和組織加入里山倡議國際夥伴關係網絡（IPSI），藉參與 IPSI 年度會員大會和相關會議，學習他山之石和分享我國成果；對內，舉辦國際性研討會或工作坊，邀請國際相關機構之學者專家來台分享專業心得，並實地踏查瞭解台灣里山倡議進展。

2) 政策研究（policy research）：借鏡里山倡議國際夥伴關係網絡（IPSI）的運作機制，建立台灣里山倡議夥伴關係網絡；借鏡國際相關生態友善農業政策和計畫，分析和檢討國內相關農業環境政策和保育政策的機會和問題，提出台灣里山倡議整體性推動政策，擬訂台灣鄉村社區「社會-生態-生產地景」保全活用策略。

3) 知識增進（knowledge facilitation）：汲取國內外里山倡議重要主題之研究成果和實務經驗，特別是有關「社會-生態-生產地景回復力指標」之研究成果和實踐經驗，並將這些知識提供於政策擬訂、能力培育和實地活動中，促進台灣里山倡議夥伴之間的知識增進和交流。

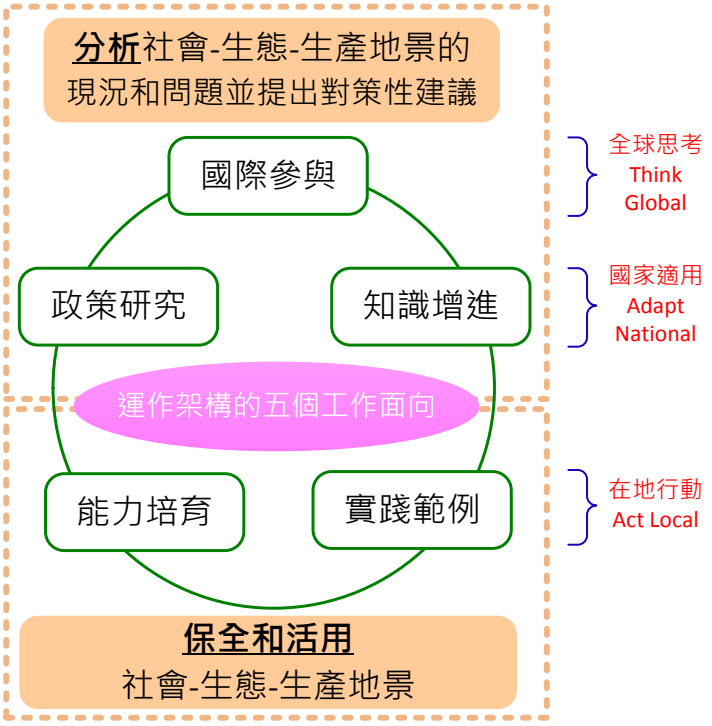

圖 10 推動台灣里山倡議運作架構的五個工作面向

2. 工作目標二：保全和活用社會-生態-生產地景

從事台灣類里山地景（社會-生態-生產地景）的保全活用相關行動，從林務局已輔助的里山倡議案例為基礎，並擴大邀請實務工作者和相關案例參與，分工面向有二：

1) 能力培育（capacity building）：透過規劃台灣里山倡議夥伴關係網絡（TPSI）資訊傳播網站與季報（電子報），對網絡夥伴和公眾傳播相關資訊；舉辦青少年或親子里山倡議環境教育活動，增進年輕人對里山倡議和社會-生態-生產地景重要性的瞭解和認同；藉由工作坊和實地踏實等形式，促進里山倡議實務工作者、研究者和政策制定者之間互相學習和研討，增進其對社會-生態-生產地景保全活用的實踐能力。

2) 實踐範例（good practices）：借鏡里山倡議「願景-方法-行動策略」三摺法的完整架構，藉資訊傳播、環境教育活動、工作坊、實地踏查交流、研討會等管道，鼓勵台灣里山倡議實務工作夥伴發展符合國際里山倡議三摺法架構的實踐案例，協助報導和論述案例的規劃過程、經營管理架構和行動的貢獻面向，並從中評選實踐範例，提供國內實務工作夥伴之參考，並透過里山倡議國際夥伴關係網絡會議或相關資訊平台，向國際社群分享台灣里山倡議實踐範例的成果。

表 1 推動台灣里山倡議的工作面向及內容(面向、內容很深廣，可分短、中、長期規劃)

工作面向	**工作內容** (舉例)
國際參與	參與 IPSI 年度會員大會和相關會議
	舉辦國際性研討會或工作坊
政策研究	分析和借鏡里山倡議國際夥伴關係網絡的運作機制
	建立台灣里山倡議夥伴關係網絡相關制度並運作
	借鏡國際里山倡議及相關生態友善農業之政策和策略
	分析和檢討台灣推行里山倡議的機會和問題
	研訂台灣里山倡議整體性推動策略
	研訂台灣鄉村社區「社會-生態-生產地景」保全活用行動計畫
知識促進	借鏡國際里山倡議案例的永續農法技術和行動方案
	彙整台灣各地生態友善農法、生產技術與行銷模式，建立本土案例類別和運作模式
	分析國際有關社會-生態-生產地景回復力指標研究成果，發展適用於台灣里山倡議之整合性可衡量指標（含社會、生態、經濟面向）
	研發生態友善農法監測指標（農業生物多樣性指標），訂定和推行指標認證辦法
	水梯田濕地生態復育補貼政策研究與試作
能力培育	規劃和經營台灣里山倡議夥伴關係網絡(TPSI)資訊傳播網站與季報
	舉辦青少年或親子里山倡議環境教育活動
	舉辦里山倡議實務工作者之實地工作坊 (以林務局已輔助的里山倡議案例為基礎並擴大邀請參與)
實踐範例	協助台灣里山倡議實務工作夥伴發展符合國際里山倡議三摺法架構的實踐案例 (以林務局已輔助的里山倡議案例為基礎並擴大邀請參與)
	評選符合國際里山倡議三摺法架構的實踐範例
	向國內和國際社群分享台灣里山倡議實踐範例的成果

四、資源需求與經費來源

本策略規劃經費原則上並不支援台灣里山案例之個別計畫所需經費，因為全台里山案例為數眾多，個別案例所需之營造經費和支援期程恐非林務局所能承擔。基本上，里山倡議案例地之實務工作者需要具備尋求多元經費來源之能力，始能長久經營。而本策略規劃將在實施策略中，建議里山案例所需經費和資源之多元管道，例如：林務局的「社區林業計畫」和「國家重要濕地計畫」、原住民族委員會的「原住民族部落活力計畫」、水土保持局的「農村再生計畫」、文化資產局的文化景觀規劃和經營之相關計畫以及民間綠色企業相關計畫資源等。

第三節、總結

里山「倡議」的英文是「initiative」，意思是嘗試「解決問題的初始、創始行動」。台灣自 2010 年底引進里山倡議後，無論政府和民間都已有相當程度之創始性行動，值得讚許和肯定。惟借鏡國際發展、檢視台灣現況和展望未來，吾人亟需研訂一項具整合「全球思考、國家適用、在地行動」架構的里山倡議推動策略，並建立台灣的里山倡議夥伴關係交流網絡，透過群策群力的協同規劃和經營機制，促進社會-生態-生產地景與海景的保全活用，邁向人與自然和諧共生的願景；同時建構出台灣里山倡議的本土論述和實踐經驗模式，積極與國際社群分享，並貢獻於生物多樣性愛知目標之達成。

第三章、里山倡議案例報告的格式及要點、台灣里山倡議案例報告

雖然，台灣目前有不少符合里山倡議精神之案例，也以各自的方式報導其成果。惟整體而言，尚缺乏以里山倡議完整架構引導的實踐案例論述，同時也缺乏這類案例之詳細規劃過程、經營管理架構和實施成效等分析性報導。因此，不利國內外其他地區實務工作者的借鏡和交流。

第一節、IPSI 案例報告撰寫要點和格式

里山倡議國際夥伴關係網絡運作架構中規定，加入 IPSI 會員的義務之一，即是在 IPSI 執行委員會認可成為會員後，於 6 個月內提送至少一處有關社會-生態-生產地景的案例報告(case study report)。IPSI 的網站上有關入會申請的訊息中 ，即提供《案例指引(case study guidelines)》，希望藉由蒐集和分享 IPSI 會員的案例研究以及其它有關社會-生態-生產地景成功案例的知識和訊息，協助於瞭解社會-生態-生產地景的重要性並促進其保全活用。

一、 IPSI 案例論述需對應於里山倡議三摺法架構

里山倡議案例的論述，基本上是對應到里山倡議「願景-方法-行動三摺法(three-fold approach)」架構：願景乃「實現人類與自然和諧共生」；方法上包括強化多樣化的生態系統服務和價值的智慧、整合傳統生態知識和現代科學以推動創新、探索新型態的協同經營體系或共有(commons)架構同時尊重傳統的土地權屬關係；行動面向則因地制宜的選擇下列五面向中至少一項：資源使用控制在環境承載量和回復力之限度內、循環使用自然資源、認可在地傳統和文化的價值和重要性、促進多元權益關係人的參與和合作、貢獻在地社會-經濟成長(包括減貧、糧食安全、永續生計、在地社區培力等)。

例如 2008 及 2009 年間，聯合國大學高等研究所(UNU-IAS)與日本環境省對世界各地案例進行了社區居民與自然環境互動的研究，出版了第一份里山倡議說帖文件《生物多樣性與生計：里山倡議概念的實踐》，介紹了全球各大洲 16 個範例（表 2），即是將這些範列一一對應到里山倡議三摺法中的相關行動面向來說明其特色（UNU-IAS, 2010a）。

表 2 里山倡議範例與行動主題（UNU-IAS, 2010a）

地區	里山倡議範例		各個範例的關鍵行動面向				
			在環境承載能力和恢復能力的範圍內使用自然資源	循環利用自然資源	認取當地傳統與文化的價值和重要性	多元權益關係者的參與及合作	有助於當地的社會經濟發展
亞洲	案例1	以傳統的土地利用方式永續利用與管理自然資源(菲律賓 伊富高省)	✓				✓
	案例2	以複作及堆肥技術建立永續農業經營(柬埔寨 磅湛省)	✓	✓			
	案例3	傳統庭園(homegarden)：永續多層次的土地利用制度(印度 喀拉拉邦)	✓		✓		
歐洲	案例4	景觀管理是藉由永續農業、畜牧業和林業的方式進行(德國 拜恩州)		✓			✓
非洲	案例5	由漁民和農民執行的小型集水區管理(馬拉威 北部)	✓		✓	✓	
北美洲	案例6	在大型水稻田裡施行永續農業和生物多樣性保育(美國 路易斯安那州)	✓				✓
	案例7	以社區為基礎的永續林業(墨西哥 瓦哈卡州)			✓	✓	
南美洲	案例8	馬鈴薯公園—永續利用和管理自然資源(秘魯 庫斯科地區)			✓		✓
	案例9	藉由鑲嵌式的土地利用方式永續利用和管理自然資源(阿根廷 米西奧內斯省)	✓				✓
大洋洲	案例10	大規模的對自然友好的農業合併生物多樣性保育(澳洲 昆士蘭州)	✓			✓	
	案例11	永續利用和管理自然資源深植於傳統的行事原則中(所羅門群島 西部省)	✓		✓		
日本	案例12	遵循傳統的 makihata 制度生產牛肉和馬肉(日本 島根縣)	✓		✓	✓	
	案例13	為了復育朱鷺實施對環境友善的農業(日本 新潟縣)	✓				✓
	案例14	在野外重新引進白鸛以及農業升級(日本 兵庫縣)	✓				✓
	案例15	透過獨特的自然地景與當地的傳統振興町野町(日本 石川縣)			✓		✓
	案例16	森林是海的戀人運動—恢復健康的流域(日本 宮城縣與岩手縣)	✓			✓	

二、 IPSI 案例內容屬性

依據 IPSI 案例指引，里山倡議案例的的內容屬性，至少可歸為下列兩項中的一項：

1. 對生物多樣性和人類福祉或人類與自然長期互動有惠益的有效方法：來自報告、文件或計畫的成果，包括工作報告和通訊等，主題聚焦於：1)生物多樣性和社會-經濟活動、2)透過自然與人類活動交互作用而產生的傳統永續地景、3)與保全活用社會-生態-生產地景的在地成功故事、實務範例、資訊有效溝通、推廣經驗等。
2. 對 IPSI 會員活動的實施有促進整合協調的工具或指引：來自報告、文件或計畫的成果，包括對 IPSI 會員有參考作用的策略計畫、政策規劃方案、教育工具、指引和手冊等，例如：1)將生物多樣性議題整合於國家、地方和相關部分發展計畫和永續發展政策架構中的有效方法、2)將里山倡議長期推行於案例地區的有效預算和財務方法、3)增能計畫，包括增進社區、相關專家、政府官員和相關部門決策者對生物多樣性、脆弱度和人類福祉的衝擊、風險和機會的相關教育和培訓活動。

三、 案例撰寫格式

依據 IPSI 案例指引，里山倡議案例應儘可能遵循以下格式 (*的項目是必須提供的)：

1. *名稱：約 10 字描述特定主題
2. 作者(群)：約 50 字陳列作者(群)背景
3. *會員組織名稱：提案和/或執行單位名稱
4. *總結(摘要)：約 200 字
5. *主題：案例須關聯於下列至少一項地區：森林、農地、草地、內陸水系、海岸、市郊或其它
6. *關鍵字：3-5 個
7. 地圖位置：提供精確位置(經緯度或 Google Map 連結)
8. *主文：2000 字左右，最多不超過 4000 字
9. 文獻：引用和參考文獻
10. 圖、表和照片：所有圖、表和照片必須在主文中註明引用
11. 網站連結：可提供相關組織和計畫的網站連結
12. 推薦資訊：推薦和案例研究有關的文獻名單
13. 主文格式：

1) Microsoft Word 檔案：將所有文字、圖、表和照片等整合在一個 Microsoft Word 檔案中；字體 Times New Roman、文字大小(font size) 11、上邊界 3.5 公分、下和左右邊界皆 3 公分、每頁設定 40 行數、頁碼設在頁面底端右邊

2) JPEG 檔：每張圖和照片需另附交 JPEG 檔，每張圖和照片寬度的像素大小調整為

550 (高度的像素大小依比例自動調整)

14. 語言：

1) 案例以英文、西班牙文或法文撰寫，但總結須以英文撰寫。IPSI 秘書處可能僅就英文撰寫的案例進行分析性的工作
2) 案例撰寫作者的主要語文若非英文，案例文本必須由英文專業人士審閱修正後再提交
3) 案例文本必須以簡明文句撰寫，對非專業人士而言的術語和文句，宜加解釋。

15. 版權：案例的提交報告雖然不表示限制作者在里山倡議訊息以外使用部分或所有的文本內容，但秘書處可以透過引用出處和/或誌謝的方式，而無須每次徵得作者同意，使用所有或部分的文本資料於里山倡議相關活動中，包括必要時翻譯成其他語文。案例文本內容若涉及引用版權等事宜，作者必須負責取得同意。授權條款相關規定請參考網站：http://creativecommons.org/licenses/

16. 其它：所有提交的案例都將受審核，當需要時，秘書處可能請作者說明文本的結構和內容訊息。

第二節、東華大學 IPSI 案例報告：吉哈拉艾文化景觀的協同規劃歷程

本節依據 IPSI 案例指引，介紹 IPSI 案例報告論述要點和撰寫格式，並以國立東華大學提供的 IPSI 案例報告為說明[4]，謹提供國內現有 IPSI 會員組織以及未來有興趣加入 IPSI 會員的相關組織參考。

一、東華大學 IPSI 中文案例報告

(一) **案例名稱**：里山倡議融入國家和地方脈絡：以台灣一處原住民社區水稻田文化景觀的協同規劃過程為案例

1. **會員組織名稱**：國立東華大學
2. **繳交日期**：2014.5.10 日
3. **案例主題類別**：森林、農地
4. **區域**：花蓮縣
5. **國家**：中華台北 (Chinese Taipei)[5]
6. **Google 地圖連結**：略
7. **摘要**：2005 年文化資產保存法修正公告，並增列「文化景觀」新項目，於是將地景/

[4] 原件為英文，連結網址：http://satoyama-initiative.org/en/collaborative-planning-and-management-of-socio-ecological-production-landscapes-a-rice-paddy-cultural-landscape-conservation-in-an-indigenous-community-taiwan/

[5] IPSI 秘書處為聯合國大學高等研究所，屬聯合國官方機構。中華台北(Chinese Taipei)是我國外交部協助下，台灣相關組織加入 IPSI 最有利且可行的名稱。

海景保存維護的概念引入現行法規。對台灣而言，文化景觀規劃和經營是一項新的概念，不同於傳統管制較嚴格的保護區(可對應於 IUCN 保護區類別 I~IV)，文化景觀(可對應於 IUCN 保護區類別 V)強調人類活動與自然環境的交互作用。維護這種作用的永續性和完整性，是文化景觀保全活用的要旨。為了協助主管機關和地方社區等權益關係者應用文化景觀這項制度新工具，東華大學研究團隊採用社區本位的參與式規劃法，以促進權益關係者之間的夥伴關係。研究團隊特別參考 IUCN 保護區類別 V(地景/海景保護區)的規劃概念以及里山倡議的「願景-方法-行動三摺法」，並選擇花蓮縣豐南村一處具文化景觀登錄潛力的原住民聚落之水稻梯田生產地景，作為先驅研究區。研究團隊依據協同規劃的理論和質性研究方法，以參與式行動研究方式，進入研究場域並著手促進在地村民、地方相關主管機關官員和相關專家之間的夥伴關係。研究團隊在 2011 年至 2013 年間，透過舉辦和協辦各種正式和非正式在地論壇，協助權益關係者就文化景觀的登錄和規劃達成共識。透過一系列密集的在地溝通論壇，權益關係者共同將該區依文化資產保存法登錄為文化景觀，原住民聚落也訂定了部落公約，主管機關亦基於共識而依法訂定了該文化景觀的保存管理原則以及保存維護計畫，並且持續於在地舉辦夥伴關係工作平台會議，以推動及監測該文化景觀的保存維護計畫實施工作。本案例說明一種基於 IUCN 保護區類別 V(地景/海景保護區)以及里山倡議相關概念架構的地景取向方法，能得到在地居民的歡迎，並且創設了台灣第一處以「生活地景」為核心資源的保護區新類型，也充實了台灣現行的保護區國家系統。

8. **關鍵字**：協同經營、文化景觀、多元權益關係者參與、公共論壇、社會-生態-生產地景
9. **作者**：李光中博士 (介紹內容省略)
10. **作者所在機構連結**：國立東華大學自然資源與環境學系
    http://www.ces.ndhu.edu.tw/files/11-1020-4161.php

(二) **計畫描述**：東華大學研究團隊自2011年5月至2013年6月，接續執行由花蓮縣文化局委託東華大學的兩個年度研究計畫，計畫目的是啟動一個協同規劃的過程，協助權益關係者調查、規劃和登錄一處水稻田文化景觀(第一年)以及共同研擬該文化景觀的保存維護計畫內容(第二年)。

(三) IPSI活動領域[6]

1. **政策研究** (IPSI 活動領域 2)：本案例以地景和參與的取徑，探討如何在 2005 年台灣文化資產保存法修正條文所提供的新法制機會下，將里山倡議三摺法架構融入一處農村的文化景觀之登錄及其保存維護計畫之規劃中。

[6] IPSI 活動領域(activity clusters)係指 IPSI 運作架構的五個工作面向(five perspectives)，包括：知識促進（knowledge facilitation）、政策研究（policy research）、指標研究（indicator research）、能力培育（capacity building）、實地活動（on-the-ground activities）

2. **實地活動** (IPSI 活動領域 5)：本案例選擇東台灣一處原住民聚落及其週圍農業生產地景為研究區，目標之一是探討里山倡議三摺法架構如何恰當的融入該農村文化景觀保存維護計畫中？目標之二是探討協同規劃方法如何促進不同權益關係者的共識建立？

(四) 案例研究區的概況[7]

1) 地理位置：花蓮縣富里鄉豐南村位於花蓮縣富里鄉最南端，東隔海岸山脈與台東縣成功鎮銜接，西與同鄉的富南村比鄰，南與台東縣池上鄉及東河鄉接壤，北邊為同鄉的永豐村，轄境廣達 35.18 平方公里，是全鄉面積最大村。吉哈拉艾文化景觀位於豐南村鱉溪流域中最北邊之支流石厝溝溪流域，面積約 1,040 公頃，鄰近地標有海岸山脈最高峰 1682m 之麻荖漏山（新港山）。石厝溝溪的中、下游形成持續性有機演化的梯田、水圳和聚落之農業文化景觀核心區，其中梯田面積約有 15 公頃，水圳有六條總長約 4,100 公尺（圖 **11**）。

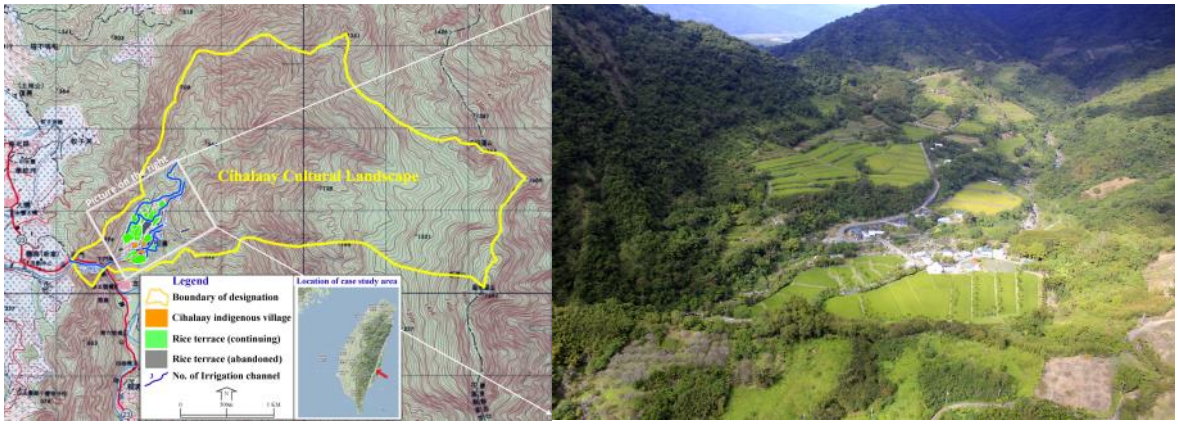

圖 11 花蓮縣富里鄉豐南村吉哈拉艾文化景觀範圍(右邊照片為水土保持局花蓮分局提供)

2) 土地使用與權屬：有關文化景觀登錄範圍之土地權屬與用地類別，在使用分區方面：森林區占 94.7%、尚未編訂占 5.2%、山坡地保育區占 0.1%；用地類別方面：林業占 87.4%、農牧占 5.1%、尚未編訂占 6.4%、丙建 0.9%、交通 0.1%。私有地約 35 公頃，占全區 0.34%。

3) 文化族群：劃設於文化景觀範圍的有豐南村 18、19 鄰，該二鄰的戶數約有 26 戶，而人口計有 150 人，其中客家人有 1 人、布農族有 1 人、泰雅族有 1 人、新住民有 2 人、餘皆為阿美族人，阿美族人佔了 97%。平均每戶人口數多為 7 人，有 2~3 戶甚至多到 10 人以上。宗教信仰方面，吉哈拉艾（石厝溝）因當地原住民居多，除天主教 1 戶、耶和華見證人 1 戶外，餘皆信仰基督教。

[7] 依據 2012 年相關統計資料及現地調查資料

4) 年齡結構：1）0～14 歲人口有 35 人（有 20 人住當地，有 15 人到北部），因政府補助青少年就學，所以國中畢業後大部分會選擇升學。但高中畢業後繼續升學者僅佔 50%，其他則因花蓮的就業機會少，所以多數選擇台北、桃園、台東等外地工作，工作性質以服務業為主；2）15～64 歲的生產年齡人口有 90~100 人（有 40 人住當地，有 50 人分佈在北部及梨山），為主要生產者，多數從事農業、木工、營建、工廠等勞力需求的工作，少數較年輕一輩則偏好服務業；3）65 歲以上的老年人口有 20 人（有 10 人住當地，有 10 人到北部），多從事農業、編織等低勞動力工作。

5) 教育程度：以國小居多，其次是高中（職）。30 歲以下多為高中（職）程度，50 歲以上則多為國小程度，亦有少數文盲，30~50 歲則介於高中(職)及國小之間。

6) 農作物選擇：農作物以坡地階田之水稻為大宗，各家多種植些蔬菜和樹豆，其餘旱地及林地則種植有梅子、甜桃、甜柿、橘子、箭筍、高接梨、檳榔及咖啡等，少數地方早期還有種植金針。。

7) 農法施作：1)水稻部份：10 年前銀川就已和豐南稻農簽契約，所以有機水稻在該區種植數量頗多，但隨著時間稻農年紀漸長，耕作不易，有些是因覺得麻煩，已改為非有機耕作，目前種植的比例有機：非有機約為 48:52；2)梅子部份：因收成價格低，且梅樹也不太需施用農藥，此區域多數還是種植有機梅；3)咖啡亦是屬較不需施用農藥的特用作物，目前也僅一戶種植，為 100%沒有噴灑農藥；4)箭筍則是野生的，每逢 3、4 月產季，就會到山上去採摘賣到市場或自行食用，所以也是 100%沒有噴灑農藥；5)其餘甜桃、甜柿、橘子、高接梨、檳榔等則有以除草劑除草，非有機方式耕作。

8) 農產品銷售管道：豐南當地環境單純、水質乾淨，有天然的條件種植有機作物，但是交通並不是非常便利，若無藉由糧商販賣，銷售管道是不通暢的。以水稻為例，有機耕作方式價格較好，但相對成本增加及人力繁瑣等問題讓人卻步，所以並非所有農戶都參與，約一半的農戶還是採行非有機方式耕作，當地參加有機米產銷班的農戶，水稻收割後交由銀川永續農場銷售；而沒有參加的農戶則交由吉成米行收購，僅有少數非有機農戶透過特殊管道可賣更好的價格。另外當地因社區發展協會運作正常，偶會藉由辦理體驗活動或一日遊程來販售給參與的遊客，但活動並非固定都有，所以收入也沒有一定。

9) 有機水稻銷售管道：有機水稻銷售管道有三：農民自產自銷（透過社區發展協會辦理體驗活動販售）、銀川永續農場依市價再加 500 元收購 (加入富里鄉有機米產銷班第二班)、舉辦有機農產品之展示（售）會；非有機水稻銷售管道有二：由富里街上的吉成米行依市價收購 (沒有成立一般水稻產銷班)、少數非有機農戶透過特殊管道可賣更好的價格；

10) 其他作物銷售管道：1)梅子：有機梅子由銀川永續農場收購(加入富里鄉果樹產銷班

第 15 班)；非有機梅子由商人依市價收購，價格會依梅子大小而價格有所分別，愈大價格愈好，剛收購時價格較高，隨著時間價格愈來愈低，到後來甚至沒人要買而放棄採收。2)咖啡：有一戶因本身有種植有機水稻，在種植 3 年後，2012 年開始收成，未來想以有機咖啡方式採自產自銷，並在吉哈拉艾（石厝溝）內經營販賣，目前尚未進行。3)甜桃、甜柿、橘子、高接梨：因靠近山區種植，猴群很多，水果成熟後猴子會先來享用，吃剩的才由農人食用，但通常所剩不多。4)檳榔、箭筍：由商人依市價收購，因野生箭筍口感不錯，較平地種植的口感好，所以價格較高。

照片 1 2012 年依法登錄的吉哈拉艾文化景觀面積約 1000 公頃，由 26 戶原住民聚落、水稻梯田、水圳、菓園、次生林、天然溪流和天然林等鑲嵌斑塊所組成

照片 2 除了有機認證的農法，綠生農法等生態友善農法也在案例研究區中擴展

(五) 方法論

本案例首先借鏡 IUCN 地景保護區以及里山倡議相關概念和方法，繼而分析現有適用的國家法規等制度工具(文化資產保存法文化景觀項目)以資應用，接著啟動協同規劃過程以協助多元權益關係者參與吉哈拉艾文化景觀調查、討論、登錄並擬訂其保存維護計畫(圖 12)。在參與式規劃過程的設計方面，本案例依據 Healey(1997)的協同規劃理論(圖 13)，視規劃和經營管理為一種權益關係者之間的社會互動過程，目的是透過知識力、社會力和行動力的增進，強化權益關係者之間的制度力(群力)。

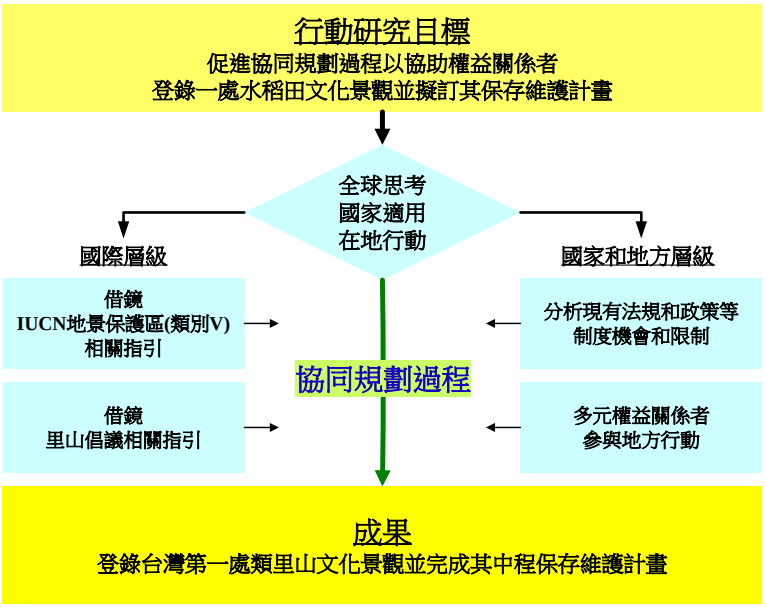

圖 12 案例之研究流程

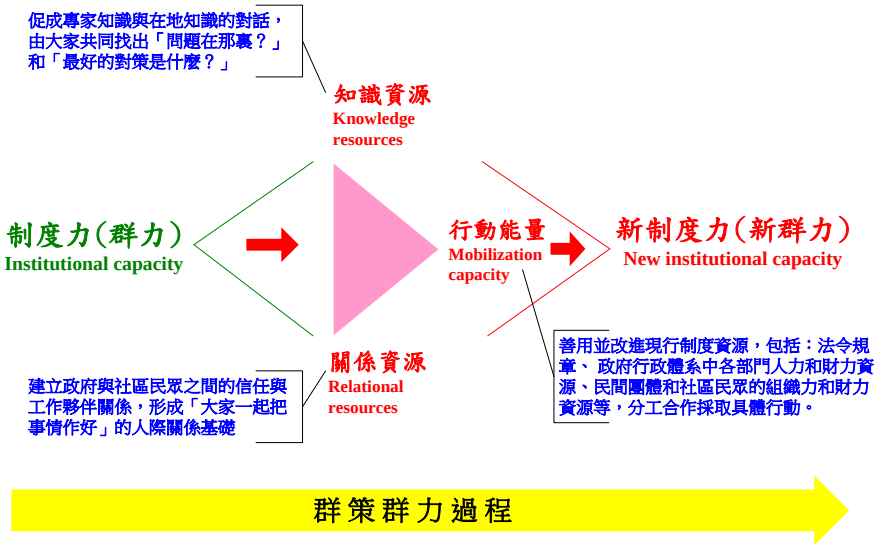

圖 13 協同規劃理論(Healey, 1997)

2011 年 5 月至 2013 年 6 月之兩年間，吉哈拉艾文化景觀之調查、登錄及保存維護規劃之實際歷程如圖 14，透過參與式規劃的六個步驟(包括準備、討論、建立共識、行動規劃、實施和持續努力)，進入研究場域並著手促進在地村民、地方相關主管機關官員和相關專家之間的夥伴關係。於 2011 年 5 月至 2012 年 2 月的第一年計畫執行期間，花蓮縣文化局與東華大學合作舉辦了之四場在地公眾論壇，並促進多次社區內部之部落會議討論，居民認取了文化景觀的概念和價值觀，願意以文化景觀定位吉哈拉艾地區的內涵和願景，從而主動提報該區列為文化景觀。

研究團隊於 2012 年 7 月至 2013 年 6 月的第二年計畫執行期間，以參與式調查和規劃法，邀請在地居民和專家共同完成吉哈拉艾文化景觀資源之基本資料建檔和相關圖面繪製，並協助「吉哈拉艾文化景觀管理委員會」和花蓮縣文化局於在地部落舉辦了之三場權益關係人論壇，就《吉哈拉艾文化景觀保存維護計畫》內容，逐步進行討論並達成共識。

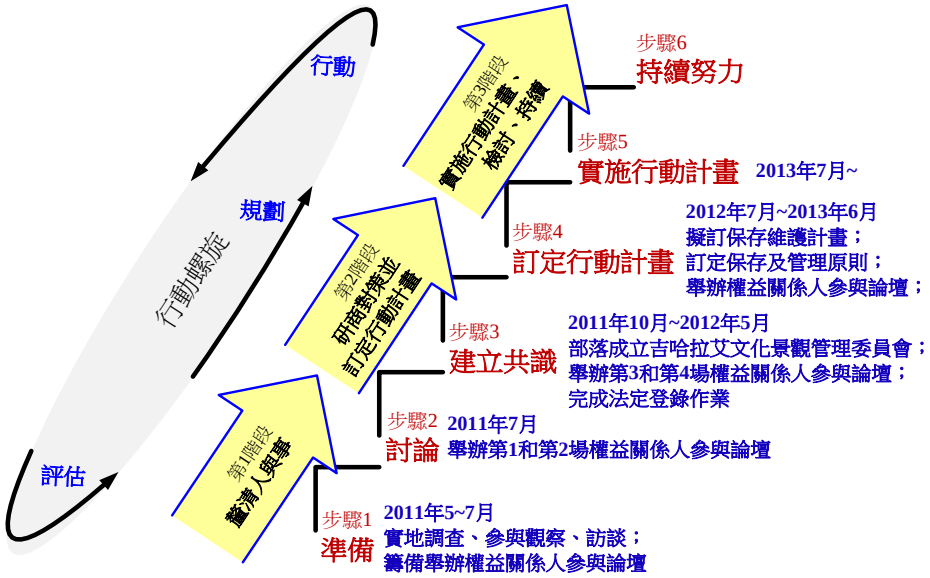

圖 14 參與式規劃過程的步驟（2011 年 5 月~2013 年 6 月）

（六） 吉哈拉艾文化景觀的價值辨識

計畫執行的兩年期間，研究團隊透過歷史文件分析，並邀請在地居民共同進行多次實地資源調查和室內工作坊，完成了富里鄉豐南村吉哈拉艾文化景觀的資源盤點及相關圖面繪製成果，包括：1)吉哈拉艾文化景觀範圍內六條水圳的構造物樁號剖面圖、各樁號構造物照片及說明；2)豐南村區域 16 種水圳型式、工圖、工法和照片；3)吉哈拉艾文化景觀範圍內各水圳田區之平面圖及剖面圖、原始梯田人工開墾步驟圖、

機械化梯田整地步驟圖；4)吉哈拉艾文化景觀鑲嵌地景斑塊 Google earth 圖像檔；5)透過歷年航空照片判釋所得之地景變遷圖等。

進而參考《文化景觀登錄及廢止審查辦法》第二條有關文化景觀之登錄基準，闡述吉哈拉艾文化景觀之核心資源及其價值如次：

1. **表現人類與自然互動的正面意義**：花蓮縣富里鄉豐南村吉哈拉艾（石厝溝）分布之水稻梯田、水圳和聚落等地景，位於鷺溪流域之支流石厝溝溪下游丘陵坡地和沖積平原上，為本阿美族吉哈拉艾聚落居民近百年內陸續開墾、持續利用和維護而成。石厝溝溪中游丘陵地為次生林，多栽植菓樹和竹林，上游之山地森林區則大體保存自然完整性。就整體地景呈現而言，自石厝溝溪集水區上游之自然森林過渡到中下游人為利用與維護之次生林和水稻梯田，層次分明，呈現人地和諧互動之景觀，亦與大自然山林溪流和平共處，透露永續土地利用之契機。登錄地符合文資法文化景觀的農林漁牧景觀類別，並可對應於聯合國教科文組織世界遺產文化景觀型態之「持續性有機演化景觀」。以世界遺產文化景觀而言，此類型景觀佔有一半以上數量，未來國際相關範例還會持續增加，在國內未來亦有增加之趨勢，本登錄地有潛力作為國內文化景觀之指標性範例之一。

2. **具代表性與紀念性之歷史和文化價值**：穿越本文化景觀登錄地「小天祥」峽谷堅硬岩壁之石門圳，闢建於 1926-28 年，為民間原漢合作開墾範例，持續溉灌今豐南村吉拉米代約 20 公頃水田，造福鄉里，深具在地經濟價值。此外，石門圳闢建之設計和申請過程等史料具見於日治時期歷史文件—《莊陳仁外十二名埤圳新設認可ノ件》，更確立了該水圳的歷史真實性。其它位在較上游的五條水圳則由吉哈拉艾聚落居民隨移居拓殖過程中，利用農閒陸續自力開鑿而成，數處水圳行經陡坡和斷崖，現場仍可想見當時工程艱鉅之情貌。以上皆反映台灣後山早期水圳和水田開發的模式及特色，具有歷史與文化之代表性和紀念性。

照片 3 於 1920 年代建造的石門圳運作依然良好

照片 4 實地訪談社區耆老有關水圳建設和維護歷史

1. **具自然保育價值**：文化景觀主要是受文化影響的產物，也常富涵生物多樣性和其它自然價值。許多有人類居住和利用的文化景觀對自然保育也很重要，因為其中珍貴的棲地和稀有野生物的保育都有賴於傳統土地利用方式的持續。有些文化景觀反映著永續土地利用的特殊技術，或是隱含了對自然的某種特殊的精神關係。因此，保護豐南村吉哈拉艾這類文化景觀以及其中的生活方式，使其能夠與自然系統平衡發展，對生物與文化多樣性的維護是非常重要的。此外，透過辨識文化景觀，給予我們機會去認識那些看似平凡實則超凡的地方，文化景觀具有紀念這些默默無名的勞動者之社會意義。

2. **具時代和社會意義**：文化景觀是國內外文化資產保存和維護的新項目和新趨勢，聯合國教科文組織於 1992 年將文化景觀正式納入世界遺產公約的保存項目，指出文化景觀恰當地呈現「自然與人類的組合作品」。國內則自 2005 和 2006 年分別修訂文化資產保存法及其施行細則，首次將文化景觀納入文化資產的保存項目。本文化景觀登錄地的保存維護目標著眼於人與環境的共同福祉，可說兼具時代需求和社會發展意義。然而，由於文化景觀多位於居民生活之場域，文化景觀之調查規劃與保存維護過程勢必與在地居民之生產活動、生活習俗、自然資源之利用和保護等息息相關，可能互相衝突，也可能相輔相成，關鍵在於社區居民等權益關係人的共同參與，因此範例的建構具有指標意義。豐南村吉哈拉艾水稻梯田與水圳文化景觀之登錄準備過程採參與式的調查和規劃方法，納入了在地知識，促進了相關主管機關與在地居民之雙向溝通，也激發居民自主成立文化景觀管理委員會，訂定文化景觀維護之部落公約。使該區文化景觀之規劃過程以及未來的經營過程，有潛力成為國內文化景觀保存工作之良好範例，提供國內其它文化景觀地保存維護各階段工作之參考。

3. **具罕見性**：花蓮縣富里鄉豐南村吉哈拉艾（石厝溝）文化景觀之登錄範圍為石厝溝溪完整流域，具有生態與地景的完整性。區內分布自然山林、溪流、次生林、菓園、水稻梯田、水圳、池塘、聚落等多元地景鑲嵌斑塊，充分呈現由常民生活和文化與山林土地互動所產生之完整「社會-生態-生產地景」。在 2012 年國內 34 處文化景觀中，本區可能是唯一完整納入聚落社會、產業經濟和週邊生態環境背景之持續性文化景觀範例。東部水稻梯田多分布於溪流沖積平原或河階平原上，本區近 20 公頃之水稻梯田則分布於丘陵坡地，順勢排列而下，具景觀之罕見性。此外，部分早期位於溪岸坡地開墾之田地荒置 20、30 餘年，耕種功能暫停，但小面積梯田及田埂邊坡砌石結構仍維持完整，田間亦多處保留原邊坡上的大塊石（隨溪流沖滾而下的都巒山層火山角礫岩），凡此恰可見證早期順應溪岸邊坡開闢梯田的景況。此類順應原始大自然地勢所開闢之小塊不規則梯田因後來機械化剷平合併而消失殆盡，而本文化景觀登錄地尚有數處保存，為東部山區早期水稻梯田之「化石文化景觀」範例，亦具罕見性。

4. **原住民文化價值**：本文化景觀之地名「吉哈拉艾」具有族群文化和自然保育意義：「哈拉」為保育類野生動物「台東間爬岩鰍」以及「日本禿頭鷺」之阿美語通稱，為早期本區阿美族部落先民由台東都歷海岸遷徙至本地後，以所發現之特有種溪流魚類而命名地名。據目前瞭解，花東縱谷阿美族雖然慣以生物命名地方，但多以植物命名，動物命名則罕見，而動物中以魚類命名地方者，本區可能是唯一案例，頗具罕見性，可能與部落居民由海邊遷徙而來之背景有關。

(七) 面臨的挑戰、行動歷程和成果

1. **面臨的挑戰**有二：

1) *如何將里山倡議觀念融入現行國家制度的規劃系統中？*里山倡議及其社會-生態-生產地景等新觀念，在台灣受到政府和民間的歡迎。然而，目前尚缺乏一個可行的制度設計架構，將這些觀念融入國家規劃體制中。雖然，2005 年新修正文化資產保存法的新增項目「文化景觀」，引入了地景/海景保存維護的概念，但是大部分現有依法登錄的文化景觀地，著眼於歷史建物保存，幾乎還沒有文化景觀案例以整體地景和社區參與的規劃方法，謀求兼顧在地居民福祉及其生活地景維護。

2) *如何將里山倡議觀念落實於實地行動中？*在經濟衰退和人口老化趨勢的農村社區中保全活用其社會-生態-生產地景，必須使在地社區增能培力，同時邀集所有重要的權益關係者參與地方的規劃發展。然而，台灣目前尚缺乏實地案例來說明如何設計和實踐一種協同規劃過程，使權益關係人共同規劃和經營社會-生態-生產地景/海景的保全活用。

2. 案例**行動歷程和成果**：

1) *如何將里山倡議觀念融入現行國家制度的規劃系統中？*在兩年的規劃期間，研究團隊

運用里山倡議三摺法架構與部落居民、主管機關、學者專家等權益關係人溝通，進而發展出一項整合國際里山倡議行動架構、國家法規和在地部落公約的制度整合架構如圖 15：以在地社群自主成立的「吉哈拉艾文化景觀管理委員會」及其自主訂定的「吉哈拉艾部落公約」為主體，透過「權益關係者夥伴關係工作平台」之運作(一系列在地的正式及非正式會議)，促進在地社群和公部門之間的對話，將公約內容融入吉哈拉艾文化景觀的里山倡議「願景-方法-行動」三摺法架構，並促成公約條文成為公部門依文化資產保存法訂定之「吉哈拉艾文化景觀保存及管理原則」之主要內容，而該原則隨後又成為「吉哈拉艾文化景觀保存維護計畫」擬訂的架構。「花蓮縣文化局」和「吉哈拉艾文化景觀管理委員會」是該文化景觀保存維護工作推行上，兩個最核心之公私部門。首先就由上而下的指導性規範而言，花蓮縣文化局為文化資產保存法之地方主管機關，中央主管機關為「文化部（文化資產局）」，對花蓮縣文化局有委任、督導和提供行政和計畫資源等關係；花蓮縣文化局依法設置「花蓮縣文化資產審議委員會」，已依法訂定《吉哈拉艾文化景觀保存及管理原則》，花蓮縣文化局進一步依據前述原則委託學術機構擬定《文化景觀之保存維護計畫》，進行監管保護，同時協調相關權益關係人共同參與和提供資源，輔導吉哈拉艾文化景觀區內所有人、使用人或管理人配合辦理；其次，就由下而上的志願性行動而言，吉哈拉艾文化景觀區內所有部落居民以及富里鄉豐南村在地領袖已共同組成「吉哈拉艾文化景觀管理委員會」，並已訂定《吉哈拉艾公約》，作為由下而上維護文化景觀的志願性規範。由於花蓮縣文化資產審議委員會依文資法訂定《吉哈拉艾文化景觀保存及管理原則》時，已充分納入《吉哈拉艾公約》內容，故兩者在互相融會下將具有規範性和志願性的互補功能。未來文化主管機關宜積極協調相關部門並提供在地組織充分資源，乃能按部就班推行《文化景觀之保存維護計畫》相關工作。

2) *如何將里山倡議觀念落實於實地行動中？*本案例的行動研究中，依據協同規劃理論來設計和評估多元權益關係者參與的過程和結果。首先，本案例在調查、製圖吉哈拉艾文化景觀資源、評估核心資源價值與範圍、分析經營管理議題以及協助訂定原住民部落公約、文化景觀保存及管理原則和保存維護計畫等工作中，積極促進公部門、學者專家、在地社區等的專家知識與在地知識對話，並將里山倡議三摺法融入其中，結果有助於增加權益關係者的知識資源(圖 16)；其次，透過東華大學協力團隊的協助，權益關係者夥伴關係工作平台成為以吉哈拉艾文化景觀管理委員會為主體，並結合文化景觀主管機關以及其他政府和民間相關單位的重要溝通和決策機制，有助於增進增加權益關係者的關係資源(圖 17)；第三，在 2011 年 5 月至 2013 月 6 月其間，於在地社區所舉辦之一系列七次的權益關係者夥伴關係工作平台會議，逐步就吉哈拉艾文化景觀登錄議題達成共識，完成法定登錄作業，繼而共同擬訂該文化景觀之保存及管理原則、保存維護計畫等內容。吉哈拉艾文化景觀保存維護計畫之內容架構，大體遵循願景及目標設定、法規依據、策略規劃、工作項目與時程規劃、多元權益關係者投入(經

費、專業、人力、物力等)、成效評估等步驟，其結果有助於累積權益關係者的行動能量(圖 18)。

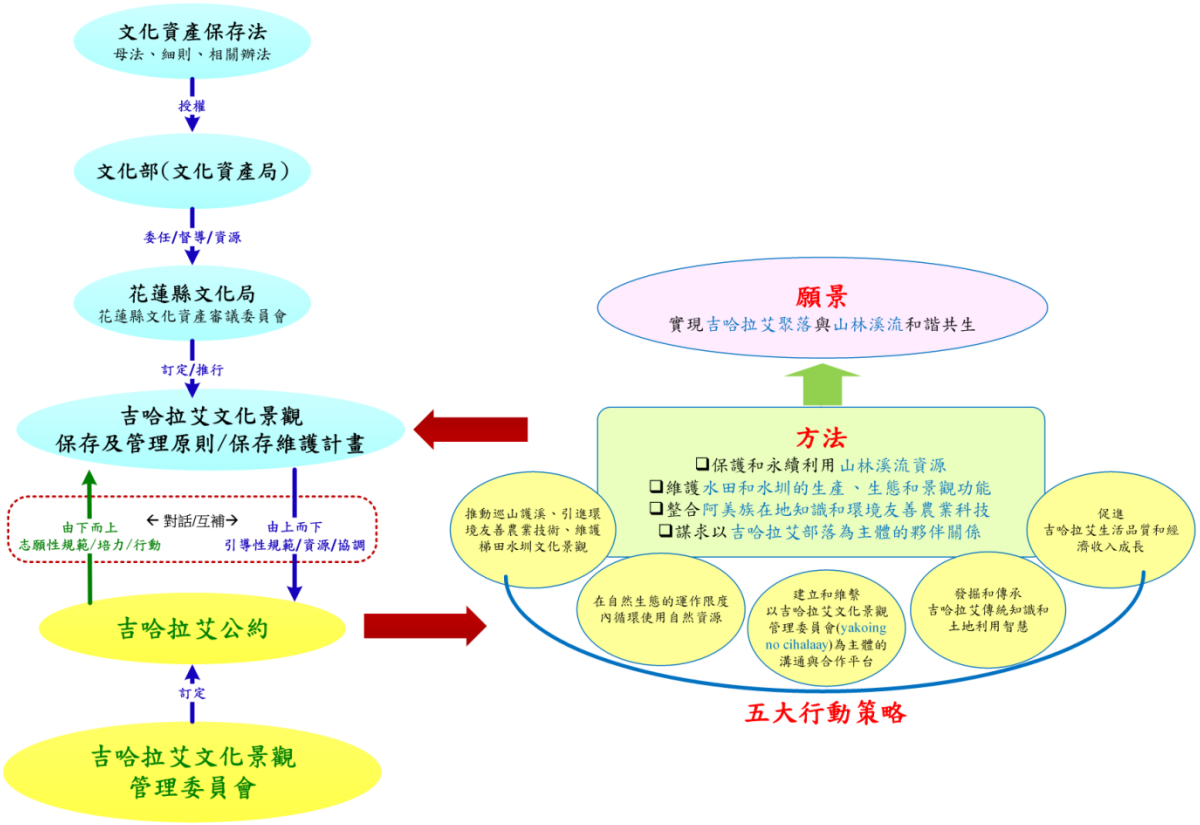

圖 15 連結地方社區和地方主管機關以強化互惠關係的制度架構

照片 5 透過 PPGIS 工作坊和在地居民一同標定社會-生態-生產地景資源

照片 6 討論吉哈拉艾文化景觀管理委員會成立的部落會議

照片 7 於在地社區召開的多元權益關係者夥伴關係工作平台會議

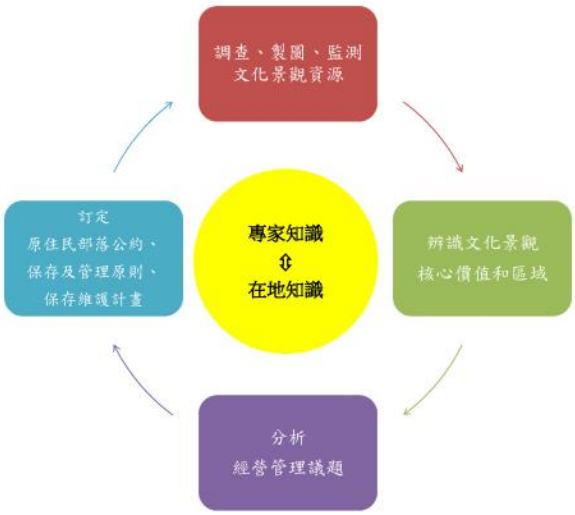

圖 16 促進調查與規劃過程中專家知識和在地知識對話，有助於增加知識資源

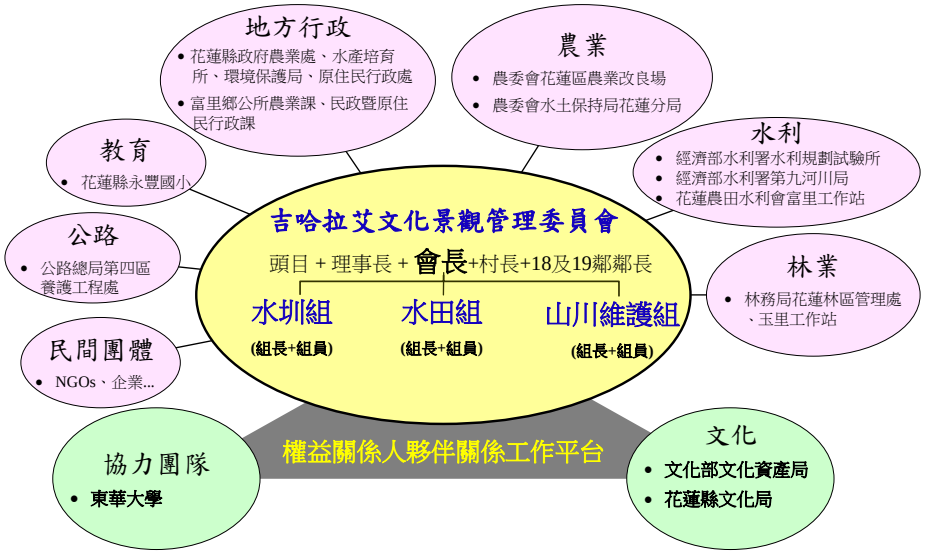

圖 17 權益關係者夥伴關係工作平台運作有助於增加關係資源

圖 18 吉哈拉艾文化景觀保存維護計畫之擬訂和實施有助於增加行動能量

(八) 結論：東華大學研究團隊透過兩年期的行動研究計畫，透過多元權益關係者參與過程，成功的將里山倡議三摺法架構融入吉哈拉艾文化景的登錄作業及其保存維護計畫的內容擬訂中。透過法規和行政體系等制度面分析，本計畫找出得以連結地方社區和地方主管機關互惠關係的制度架構，促進了在地社區和公部門的正式對話和共同決策，成功將在地的部落公約融入官方的文化景觀保存及管理原則中。本案例說明一種基於IUCN保護區類別V(地景/海景保護區)以及里山倡議相關概念架構的地景取向方法，能得到在地居民的歡迎，並且創設了台灣第一處以「生活地景」為核心資源的保護區新類型，充實了台灣現行的保護區國家系統，也說明了里山倡議不限於保護區範圍外，也能在保護區內推行。

照片 8 東華大學學生與在地國中小少年們一同和社區長輩學習水稻田插秧

照片 9 發展地質與生態旅遊有助活絡地方經濟

(九) 結語

實地活動可說是里山倡議國際夥伴關係網絡(IPSI)運作架構的最核心工作，實地活動的案例報告，也成為 IPSI 各會員組織間分享和交流實務經驗的重要訊息。本文介紹 IPSI 案例報告的論述要點和撰寫格式，並以台灣的案例報告為說明，目的是希望鼓勵台灣里山倡議實務工作組織，發展符合國際里山倡議三摺法架構的實踐案例，報導和論述該案例的規劃過程、經營管理架構和行動的貢獻面向，提供國內實務工作夥伴之參考，並透過里山倡議國際夥伴關係網絡會議或相關資訊平台，向國際社群分享台灣里山倡議實踐範例的成果(圖 19)。

圖 19 IPSI 網站上已登錄有台灣的里山倡議案例報告

第三節、東華大學 TPSI 案例報告：花蓮豐南村 Pakalongay 解說員培訓課程之發展歷程

一、 中文案例報告

(一)前言

本文之研究區位在花蓮縣富里鄉最南端之豐南村，轄境廣達 35.18 平方公里，是全鄉面積最大村。吉哈拉艾文化景觀登錄地為豐南村鱉溪流域中最北邊之支流石厝溝溪流域面積約 1,040 公頃。鄰近地標有海岸山脈最高峰 1682m 之麻荖漏山。石厝溝溪的中、下游形成持續性有機演化的梯田、水圳和聚落之文化景觀核心區，其中梯田面積約有 15 公頃，水圳有六條總長約 4,100 公尺。聚落中與水圳和梯田運作最相關之設籍住戶有 23 戶和其他地主 5 位。本地阿美族的吉哈拉艾居民自 1930 年代自台東成功都歷（Torik）社陸續遷入及定居開墾，可謂是豐南村吉哈拉艾文化景觀的文化作用者。過去定居此地主要是為了生活、生計，並沒有刻意以文化景觀概念理解在地內涵。經過 2011 年 7 月至 2012 年 1 月間，花蓮縣文化局與東華大學研究團隊合作舉辦了之四場在地公眾論壇，並促進多次社區內部之部落會議討論，居民認取了文化景觀的概念和價值觀，願意以文化景觀以及里山倡議定位吉哈拉艾地區的內涵和願景，並且主動提報該區列為文化景觀（李光中，2012）。

2012 年 3 月 27 日花蓮縣文化資產審議委員會審議通過社區提案，並於同年 5 月 2 日由花蓮縣政府依文化資產保存法公告「花蓮縣富里鄉豐南村吉哈拉艾文化景觀」。花蓮縣文化局隨即於 2012 年 7 月至 2013 年 6 月間，再度委託東華大學研究團隊完成《花蓮縣文化景觀富里鄉豐南村吉哈拉艾保存維護計畫》之規劃工作，並且將里山倡議的「目標-策略-行動」架構（UNU-IAS, 2010a），融入該文化景觀法定之「保存管理原則」和「保存維護計畫」架構中，包括下列五個行動面向)：在自然回復力的限度內循環使用自然資源、推動巡山護溪、引進環境友善農業技術、維護梯田水圳文化景觀、發掘和發揚阿美族傳統知識和土地利用智慧、促進部落生活品質和經濟收入成長等工作（李光中，2013）。

里山倡議的核心概念為「社會-生態-生產地景（socio-ecological-production landscapes）」的保全活用（UNU-IAS, 2010b），這類地景在亞洲國家中，多以水稻田等農業文化景觀呈現，土地則多屬農村居民私有財產。因此，這一類農業文化景觀的保存維護工作，有賴社區內外的權益關係人以柔性的、雙向的環境溝通和參與，亦即以社區本位(community-based)的規劃和經營方式為之。

吉哈拉艾文化景觀雖然已有法定基礎，但實際保存維護工作，尚在起步。吉哈拉艾文化景觀地的核心資源—梯田，屬居民私有財產，水圳也多由居民自力維護，強制的法規不但不受居民歡迎，更可能引起反感；況且文化資產保存法對於文化景觀之規範，並無明訂禁止事項，也無罰則，而係透過「保存管理原則」和「保存維護計畫」之共識

機制，鼓勵土地所有權人和使用人善加維護。因此，吉哈拉艾這一類的農業文化景觀的保存維護工作，需要正向的鼓勵和支援，以及社區內外權益關係人的溝通和參與。同時，上述「發掘和發揚阿美族傳統知識和土地利用智慧」的實踐，更有賴社區內代間學習（Intergenerational learning）和傳承，乃能永續。這種環境教育的實施方式，必須是「社區本位的」，因為社區居民是吉哈拉艾文化景觀的「作用者」和主人；而且最好是「非正規的」，因為「在地傳統和文化的價值和重要性」的認取和傳承，需要建立在社區內部傳統之代間學習的文化體系之上。然而，此種在地文化傳承體系，多受現代化衝擊而逐漸消失，且多為目前正規學校教育所忽視。

基於上述關切，本研究於花蓮縣富里鄉豐南村吉哈拉艾文化景觀地，探討核心問題：「如何與在地居民等權益關係人共同規劃和實施社區本位的環境教育課程，以促進阿美族傳統知識和土地利用智慧的發掘和發揚、以及在地農業文化景觀的保存和維護意識？」研究結果預期可以提供相關主管機關政府、農村社區、大學和在地學校、民間團體等權益關係人，共同推動非正規環境教育以從事農業文化景觀保存維護之參考。

(二)研究方法

本研究參考行動研究循環（action research cycle）所包含的三個重要面向：規劃（planning）、行動（action）和評估/反思（evaluation/reflection）（Kemmis and McTaggart, 1988; Kuhne and Quigley, 1997; Stringer, 1996），首先探討「以里山倡議為目標的社區本位環境教育課程涉及哪些人和事？」，其中「人」的研究工作係透過「權益關係人分析（stakeholder analysis」（Bryson and Crosby, 1992; DFID, 2002; Grimble and Wellard, 1997），界定出與社區本位環境教育課程有關的權益關係人；「事」的研究工作則採田野參與觀察法和訪談法，分析社區本位環境教育課程所涉及的主題和內容。其次，以「協同規劃理論」（theory of collaborative planning）（Healey, 1997, 1998）為架構（包括知識資源、關係資源和行動能量等三面向），探討「以里山倡議為目標的社區本位環境教育之實施歷程與效益為何？」研究工作包括與權益關係人共同規劃和實施社區本位環境教育課程活動，並評估該課程活動是否有助於促進阿美族傳統知識和土地利用智慧的發掘和發揚以及在地農業文化景觀的保存和維護。最後，綜合學理和個案實證研究所得，建立以里山倡議為目標的社區本位環境教育之夥伴關係模式，並回答下列研究問題：

- 個案社區本位環境教育課程相關之文化景觀保存維護議題有哪些？
- 個案社區本位環境教育課程涉及之權益關係人有哪些？
- 以里山倡議為目標之個案社區本位環境教育課程主題架構及教學內容為何？
- 個案社區本位環境教育課程之教學歷程與結果為何？

本研究主要採用質性研究方法為資料蒐集和分析工具。研究方法主要包括：文獻分析、參與觀察、訪談以及團體討論等方式（Huberman and Miles, 1994），透過不同面向的交叉檢驗（triangulation），來探討社區居民等權益關係人對於如何透過社區本位環

境教育課程以傳承在地傳統文化和技能的看法。在資料的分析與詮釋方面，本研究採用質性研究法的資料分析模式，將文獻回顧、田野調查工作收集得的資料加以概念化和理論化，從而獲致結論。

(三)行動研究歷程與發現

1. 花蓮豐南村的社區本位環境教育課程緣起與先期籌備歷程

豐南社區於 2009-2011 年間，執行原住民委員會補助的三年重點部落計畫，一批中壯年返鄉的豐南村民，在耆老的指導下，合力將廢棄的永豐國小四維分校的閒置空間，再修復利用為「吉拉米代農事體驗區」，目標是發展成為產業和生態旅遊的基地。

2012 年初重點部落計畫結束，「四維分校吉拉米代農事體驗區何去何從？」引起村民關注，也成為東華大學協力團隊和社區居民共同討論和規劃的機會，大家一致覺得不應該只想要接待遊客、發展旅遊，而應該回過頭來教育自己村裏的青少年，讓他們開始學習農事並親近農田，學習傳統生態知識並守護山林，學習傳統規範和技藝以傳承文化，透過社區耆老傳授，培育具鄉土情懷、在地知識和環境行動技能的青少年。

於是東華大學協力團隊和社區居民合作，自 2012 年 9 月起，啟動了一系列在地村童環境教育活動課程，由村民召集村內國中生和國小高年級生（屬於阿美族年齡階層中的 Pakalongay），在每個週末上課，由村民討論上課內容，並由兩位有興趣、有能力而且曾參與四維分校規劃和營造的阿美族社區居民擔任講師(社區講師 A、B)，並將課程訂為「豐南村 Pakalongay 解說員培訓班」（陳瑩穎，2013）。

一開始時，社區教師和東華大學協力團隊雖預想將 Pakalongay 解說員培訓課程分為初、中和高階，然而基於社區本位的（community-based）課程設計理念，所以並不急於訂定各階課程的內容和教材，而是希望在課程實際發展歷程中，從經驗慢慢歸納出各階課程架構。

2. 豐南村阿美族Pakalongay解說員初階、中階及高階培訓課程實作歷程

以下分述豐南村阿美族 Pakalongay 解說員各階段培訓課程之實際建構歷程(圖 20 圖 20)：

(1) 2012年9月~12月的Pakalongay解說員初階培訓課程

在研究團隊籌備第二場「社區青年學子工作坊」的過程中，隨著愈來愈多居民對社區青少年教育的肯定，研究團隊與社區核心幹部討論後，決定於 2012 年 9 月起至當年 12 月底的 4 個月期間，試行在地青少年初階培訓課程，為「自由發展主題性課程探索期」。然而社區居民一開始時並不能很明確的界定課程的內容和目標，研究團隊和居民便秉持「做中學」的態度，希望在課程實際發展歷程中，從經驗歸納出該課程的架構和運作方式，依實際經驗來建構該課程之發展方案。

圖 20 豐南村阿美族 Pakalongay 解說員初階、中階及高階培訓實作歷程圖

在課程最初發展的討論中，社區居民和研究團隊建立了下列幾項課程運作(How?)的共識：1)Why?(課程目的)：知寶、惜寶、展寶(解說)；2)When?(課程時間)：每週末舉辦；3)Where?(教學場域)：以豐南村範圍為學習場域；4)What?(課程內容)：以在地自然和文化資源為學習內容；5)Who teach?(教師)：以在地社區居民為主要課程講師；6)Who learn?(學生)：以在地少年為課程學生，依年齡層及學習資歷分為初階、中階和高階，居民的想法大約是初階學生能「跟著做(體驗)」、中階學生能「知道怎麼做(知識、技能)」、高階學生「能帶弟弟妹妹做並能向遊客解說社區資源(服務、領導、解說)」。

初階培訓課程規劃主要以四維分校農事體驗區為培訓基地，整個豐南村都是戶外環境教育的場域。參加的學員主要為豐南村六位 14~15 歲國中生，每週六日上課。由社區課程老師考量當週社區的日常農事、文化活動或相關環境主題，決定當週上課內容。研究團隊則藉由全程參與觀察和記錄，並於課前和課後與社區教師討論，來扮演協力者的角色（陳瑩穎，2013）。

(2) 2013年1月~12月的Pakalongay解說員中階培訓課程

初階培訓課程結束前，社區老師與研究團隊討論了後續課程銜接問題，決定將通過初階培訓的學員晉級到中階，另外邀集村內國小高年級學員參加初階培訓課程。於是自 2013 年 1 月起開始試作中階培訓課程，惟開始時仍然沒有排訂課程綱要和進度，研究團隊和社區老師仍認為可用較彈性的方式發展中階培訓課程，；唯其中一位從頭參與的社區講師 B 因為忙碌而經常不克前來支援授課，故改由吉哈拉艾文化景觀管理委員會中一位女性幹部社區講師 C 繼續與社區講師 A 配搭授課。研究團隊也同樣藉由全程參與觀察和記錄，並於課前和課後與社區教師討論，來扮演協力者的角色。此外，由於數位學員家長曾反應週日應上教堂作禮拜，不太認同每週日上課，所以將中階培訓課程調整為每週六舉行。

2013 年 1~6 月的 Pakalongay 解說員中階培訓課程，缺課嚴重且學員參與熱情漸下降，為「自由發展主題性課程瓶頸期」。原因之一是由於參與課程的學生多為田徑隊或足球隊選手，運動賽事頻繁，六位學員當中常有兩到三位無法參與培訓課程，其餘學員們也會不想參與，導致下學期的課程缺課狀況嚴重，2013 年 1 月~6 月僅有 8 次上課。此外，中階培訓課程的主題較集中於農事活動，內容與初階相仿，導致學員學習熱情漸冷淡，宜穿插不同主題課程，如：2013 年 6 月 15~16 日的野營與夜觀課程中，學員明顯懷抱求知熱情，又見活潑樣貌。第三，由於培訓課程已非初試摸索，但社區老師常常當週上課前不久才決定課程內容，缺乏主題變化和系統性的教學安排，彈性訂定課程內容的作法已呈現瓶頸。

研究團隊決定將上述困境與社區居民討論，共謀對策。首先於 2013 年 6 月 20 日在豐南社區活動中心舉辦「Pakalongay 解說員中階培訓課程規劃座談會」，共有 11 位居民參加，其中有許多學員的家長參加。會議首先以活動照片和簡報來回顧 Pakalongay 初階和中階解說員培訓課程的緣起和歷程，接著與居民討論未來六個月（2013 年 8 月至 2014 年 1 月）的培訓課程的可能主題，得到部落文史、農事體驗和自然體驗等三大類課程及其相關課程名稱和內容。

本次會議多位居民表示，參加此次會議才更瞭解 Pakalongay 解說員的課程內容和實施的歷程，尤其肯定孩子學習在地傳統文化與知識，而且孩子假日參加課程，也比較不會游盪在外與壞朋友交往，希望接下來可以更加豐富的課程並持續下去。

本次會議恰有林務局花蓮林管處玉里工作站負責推動社區林業計畫的承辦技正，聞訊主動前來參加。在聽過 Pakalongay 解說員培訓課程後，表示社區若將該課程申請社區林業計畫來執行，林管處願意支持。

於是在研究團隊協助下，豐南社區分別於 2013 年 7 月 6 日及 13 日，召開了兩場 Pakalongay 解說員培訓課程納入社區林業計畫提案座談會，地點在豐南村石厝溝吉哈拉艾聚落。主要討論的事項有二：第一是依據前述 6 月 20 日會議中，豐南村居民討論出來的有關 2013 年 8 月至 2014 年 1 月間各月的 Pakalongay 解說員培訓課程主題，進一步修正為 2013 年 8 月至 11 月（103 年度社區林業計畫開始執行和結束期程）間，各月的課程主題、各週的課程內容名稱和講師；第二是討論確定豐南村吉哈拉艾文化景觀管理委員會將負起社區林業計畫培訓課程執行和經費控管、核銷的責任，會議中也決定了部落中負責的人員（林語玥，2013）。

2013 年 8~12 月為「由社區林業計畫補助的多元師資及課程發展期」，大致依照 2013 年 6 月 20 日、7 月 6 日及 7 月 13 日三場座談會中所研擬的課程主題進行，但少數主題因授課當時已超過最適時節而並未來得及執行，如：插秧、打田等；而其中有部分課程因婚喪喜慶及佳節活動等因素，使執行期間延後至 12 月，以結業考試暨成果展作為該期社區林業計畫的結束。。

(3) 2014年1月~12月的Pakalongay解說員高階培訓課程

2014 年所執行的社區本位環境教育課程，依照規劃機制可大致分為 2014 年 1~6 月的協同規劃主題性課程發展期、7~8 月的多元師資及課程集訓期/講師培訓期(社區林業計畫補助)和 9~12 月的綜合性主題課程發展期。

1~6 月的協同規劃主題性課程發展期的課程規劃方式，回歸到依時節農事和文化活動彈性安排，但不同的是，規劃者非如起初的由授課社區講師於當週決定，乃改為協力團隊和社區講師共同討論未來兩週課程。此時期初期主動加入的一位社區講師 D，非常重視學員的解說表達能力，故於要求學員於每堂課的尾聲均需上台分享課後心得，不僅訓練學員的表達力，也有助於東華大學協力團隊瞭解學員想法。且該位講師建議發行課程週報，以利學員預先瞭解下週課程內容；協力團隊成員亦建議甚可在週報刊出照片回顧上週課程，讓家長瞭解學員學習狀況。此時期課程因著協力團隊的建議而融入了多次稻田生態觀察，於吉哈拉艾文化景觀梯田觀察田中棲息的動物，並邀請了多位具專業背景的相關領域專家前來支援授課，以助觀察昆蟲、植物和水質，協力團隊並建議比較綠生農法、生態農法、慣行農法在農法和生態上的差異，試圖突顯友善環境農業的重要性。因此，此階段「協同規劃主題性課程發展期」在教學模式、課程規劃方式、學員表達力訓練和友善環境農業教育等多方面都有所成長。

7~8 月的多元師資及課程集訓期/講師培訓期，則利用暑假實施多元課程，課程規劃類似於 2013 年 8~12 月的模式，由社區講師、家長與協力團隊討論課程主題定案，並申請社區林業計畫以支援施行課程所需經費。擁有先前的施作經驗，社區與協力團隊對於課程主題有許多發想，除作為核心的農事主題課程與傳統文化課程，協力團隊與社區夥伴討論過程中，意識到水資源之於社區生活的重要性，本研究案例所在社區主要用水都取自流經社區的鱉溪與其支流石厝溝溪，而社區不僅民生用水，農田灌溉用水與阿美族慶典都需要使用溪流中的資源；為使參與課程的學員認知水資源對於當地生活的意涵，該期便增加水資源系列課程，內容包括社區百年水圳之歷史與維護方式、社區簡易自來水系統介紹等等 (陳冠穎，2015)。

有別於 2013 年 8 月~2014 年 8 月主要授課地點以豐南社區活動中心為基地，進入 9~12 月的綜合性主題課程發展期，由於此時四維分校水源和環境都已經透過豐南社區執行的水保局相關計畫整理完成，社區講師考量四維分校地處偏遠、誘惑較少，而使學員較為專注，因此授課地點幾乎都集中於四維分校。以四維分校為課程基地，亦會影響到課程內容安排，因四維分校為農事體驗區且位於群山環抱中的鱉溪畔，較方便安排學員進行捕魚、採野菜等傳統阿美族食材採集課程，並得以體驗從蔬菜的種植到採集、再到共炊共食。在過往常由社區講師領軍的共同採集、共炊、共食過程裡，本時期逐漸賦予兄姊帶領弟妹執行這些任務，實能推動 Pakalongay 領導與服務學習的使命，以達家長們對於阿美族年齡階級文化傳承的期許。本系列課程亦可發現教學相長的現象，分別

累積一兩年教學經驗的社區講師們，已漸漸對於值得教授的內容相當敏銳，如：社區講師們將自己半小時內就可以獨力完成的採菜、翻攪綠肥等工作，特地留到週六課程再施作，並花費一兩個小時進行教學體驗。截至本時期為止，已經累積傳授過許多生態環境、生活文化、生產技能等知識技能了，曾以講師說、學員聽的方式複習先前所學但導致講師疲乏、學員也精神渙散，故在社區講師和研究團隊協同討論之後，本期多次融合之前授課內容，以活潑的綜合活動方式複習，不僅促進學習動機，更提升學習成效，成為本課程的「綜合性主題課程發展期」。

(四)研究結果之討論與結論

1. 社區本位環境教育課程涉及之文化景觀保存維護相關議題分析

以豐南社區為本的環境教育課程，邀請熟知吉哈拉艾文化景觀資源的社區居民擔任講師，試圖從課程中融入文化景觀保存維護的相關議題。分述如後：

(1) 水田生產與水圳維護議題

2014 年 1~6 月課程中多次融入稻田生態觀察活動，社區講師、學員與協力團隊經常討論各種農法的優缺點，究竟所觀察的田中昆蟲是害蟲還是益蟲？被人類稱呼為害蟲的昆蟲，究竟害了誰？助了誰？這些有趣的生態農業問題，成為社區本位環境教育課程應逐步深入探究的議題。

2014 年度吉哈拉艾文化景觀曾經歷兩次風災，第一次使得文化景觀梯田田埂崩塌、水圳毀損，使水田沒水而導致休耕；因著休耕而乾涸的梯田，禁不住第二次風災，再次塌陷；部落耆老說在他們的年代絕對不會發生這樣的災情，因為祖傳的在地知識告誡他們不可以休耕，而這樣的活在耆老記憶裡的智慧能否透過社區本位環境教育課程繼續傳承下去？應如何傳承？由哪些人承接傳承的使命？也成為本課程應逐步探究的議題。

(2) 山林溪流維護議題

吉哈拉艾在阿美語意指富有台東間爬岩鰍之地，台東間爬岩鰍屬台灣二級珍貴稀有野生動物；然而豐南社區引以為傲的好山好水卻面臨了引進優勢魚種、電毒魚等威脅，在環境教育所重視的知識、情意、技能模組中，倘若僅止於知識上的教誨，恐怕難以促使學員受感召、更難以促進山林守護的行動。應如何讓學員心有所感、進而觸發形成環境行動，成為本課程應逐步探究的議題。此外，協力團隊也協力促成花蓮縣政府吉哈拉艾溪封溪護魚計畫和花蓮林區管理處結合社區加強森林保護計畫在豐南村執行，以利護溪及防堵山老鼠的盜伐等。巡山護溪相關議題亦應逐步融入豐南社區本位環境教育課程中。

(3) 在地知識及傳統文化傳承議題

文化傳承和族語訓練是家長們普遍最關切的議題，他們多次表明希望透過社區本位環境教育課程中帶出阿美族傳統年齡階級的概念，，在 2014 年 9~12 月期間自然而然

地呈現此服務學習的機轉，社區講師首先示範，再由兄長率領弟妹從事相關活動。阿美族在民族植物的使用上極具智慧，透過 2014 年 7~8 月社區環境教育講師培訓的學者專家知識與社區講師在地知識之交流平台中，發現民族植物是一項在豐南村很具重要性的在地智慧，學者與社區講師均認同需要對此特別加以訓練在地學員。在地知識及傳統文化經常是令學員最為投入的課程，社區講師曾引導青少年學員思考傳統文化如何在現代活出新生命和意義價值？應逐步成為豐南社區本位環境教育課程的核心內容。

2. 社區本位環境教育課程涉及之權益關係人分析

本研究依權益關係人對社區本位環境教育課程發展之重要性與影響力，將權益關係人對分成四類群(圖 21)，各權益關係人之角色與功能之互動關係則如圖 22 (陳冠穎，2015)。

(1) 社區講師 (Sinsi)

社區講師於本研究案例中係指長期帶領參與社區本位環境教育學員之社區長輩，角色近似學校課堂中的導師，為支撐該課程的重要核心人物。計畫執行之初有兩位社區男性長輩擔任(社區講師 A、B)，後因講師 B 事務繁忙而改請女性講師 C，傳授阿美族女性知識，而後於 2014 年 1 月有另一名社區長輩講師 D 志願加入，因此每次上課有二到三位社區講師帶領課程。

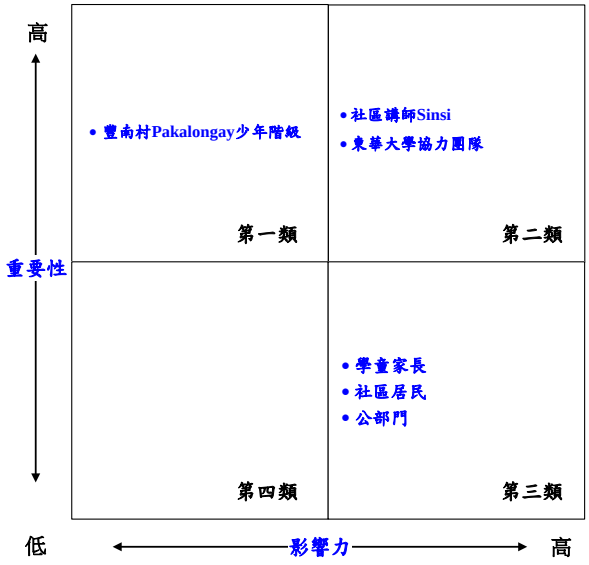

圖 21 花蓮豐南村社區本位環境教育課程發展之權益關係人分析矩陣圖

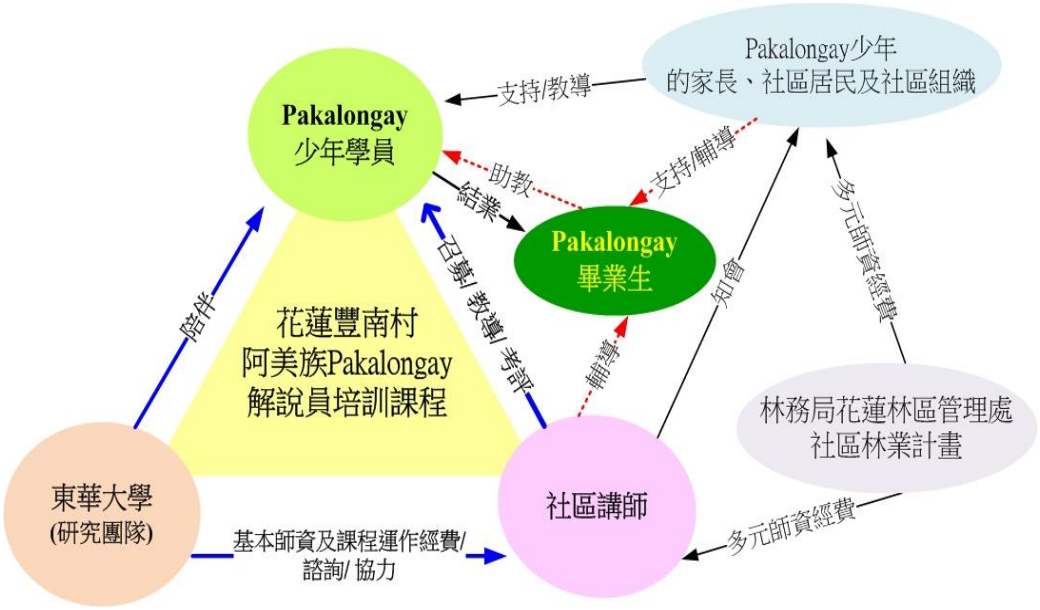

圖 22 2012.9~2014.12 初、中、高階培訓課程發展期之權益關係人角色與功能互動圖

社區講師為主導課程進行之核心，三位講師對於課程的關注面向各不相同，講師 A 善於利用場地素材即興發揮進行課程，講師 C 注重學員身心發展與課程教材準備，講師 D 則重視課程制度以及班級經營管理等細節。三位講師於合作之初，對彼此上課方式尚不熟悉，經常發生搶話或者對課程要求不一致而對學員下達不同指令等情況，所幸，三位社區講師均願意溝通協調，找出彼此默契與分工方式。社區講師對課程發展走向具決策權力，且各具強烈動機而參與課程，因此將社區講師歸類為重要性和影響力皆高的權益關係人。

(2) 學員 (Pakalongay)

本研究案例參與學員年齡層年齡層介於小學高年級至國中階段，洽符合當地阿美族年齡階層「Pakalongay」，該年齡階層於阿美族傳統中須服從長輩的指導，並且有責任要帶領年幼的弟妹，同時在豐年祭上要參與諸多事務，如倒酒、打水、要飯等工作。本研究案例自 2012 年 9 月至 2014 年 12 月之初、中、高階培訓課程發展期之各階結業學員人數，統計如圖 23。2012 年學員僅七名，年齡介於 14 到 15 歲之間，隨著時間推演，或是參與學員呼朋引伴，或是社區講師邀請，參與課程的學員越來越多，至 2014 年底，經常參與之初、中和高階學員人數已達 18 人左右，其男女比例各佔 68%與 32%。

據研究團隊訪問資料，對於參與學員而言，吸引學員參與之原因除了學習部落傳統知識，發展同儕友誼、打發週末時間也是吸引學童加入的原因。然而，學員並非每週皆可參與課程，探究其缺席理由，多是參與學校活動或比賽，少數學員則是因家庭因素而缺席。學員對於課程規劃走向並無太多發表意見的機會，且是否參與課程常受外力影響，仍須培力過程，因此將學員歸於高重要性但影響力尚低的權益關係人。2014 年 8 月，參與課程最久的四位學員從國中畢業，同年豐年祭其年齡階層亦獲晉升，自 Pakalongay 階級畢業後四名畢業生仍繼續參與週六課程，而在社區講師的屬意下，部分

實作課程亦要求畢業生帶領後輩施作，此為社區講師嘗試讓學員獲得更多參與權力的舉動。

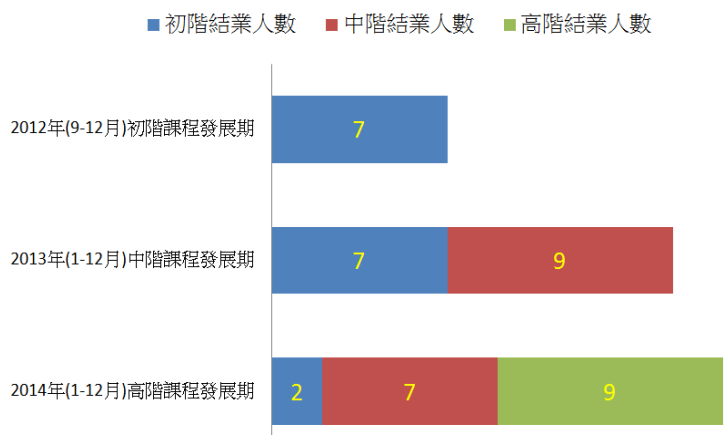

圖 23 2012.9~2014.12 初、中、高階培訓課程發展期之各階結業學員人數統計

(3) 家長

家長對於課程態度可見明顯轉變，初期社區講師與家長缺乏溝通，有家長誤解社區講師將學員集中是要利用學員做工。所幸在社區講師積極與家長溝通，且進行課程期間也安排機會讓學員於長輩面前展現學習成果，加上製作課程週報作為溝通橋梁，部分家長態度已經軟化，轉而支持該課程進行，家長態度影響到學員課程參與度。本研究將家長歸類為重要性低但影響力高的權益關係人。

(4) 社區其他居民

社區居民擁有多樣的知識與技能，若參與課程可豐富課程內容，補足社區講師不擅長的領域，對於社區本位環境教育課程而言是相當重要的資源。然而由於研究團隊計畫經費有限，雖能維持兩位社區講師基本工資，若要邀請其他居民參與課程講授，需透過社區組織申請相關計畫來支應。2013 及 2014 年社區發展協會皆申請得林務局花蓮林區管理處的社區林業計畫補助，約可支援 3 至 4 個月的課程，邀請其他多位各具專長的長輩為學員講授課程。此一過程亦增加環境教育課程在社區的能見度，獲邀的社區居民透過授課期間與學員以及社區講師互動，更加理解課程組成與運作進而認同，受邀授課的居民多表示若有機會願意再為學員上課。由於目前社區居民參與課程者有限，仍有一些未參與者由於不瞭解課程而有負面評論，間接造成社區講師之壓力。本研究案將社區其他居民歸類為重要性低但影響力高的權益關係人。

(5) 協力團隊

協力團隊係指本研究團隊，主要以協力者角色參與本案例之課程發展於每週課程結束後協力團隊皆固定與社區講師就學員表現、課程進行方式以及下週課程安排等，進行檢討和討論。社區講師對於此課後討論非常重視，認為可以幫助講師釐清許多課程進行問題，並提供三位講師分享彼此看法，從而刺激更多新想法。講師們認為與協力團隊

的合作方式，令課程發展更為穩定。此外，協力團隊亦協助安排社區講師的培訓課程，提供師資人選名單，再由社區邀請安排。協力團隊協助社區講師規劃、實施和檢討課程，並透過計畫提供所需資源。協力團隊也透過這種合作過程，探討社區本位環境教育的可行之道。本研究將協力團隊歸類於重要性和影響力皆高的權益關係人。

(6) 公部門

和本研究案例有關的公部門主要有：農委會林務局花蓮林區管理處、農委會花蓮區農業改良場、農委會水土保持局花蓮分局等。花蓮林區管理處的社區林業計畫，在2013~2014 年各提供 3~4 個月多元師資課程所需經費；花蓮區農業改良場則依社區需求提供農業生態相關課程，例如 2014 年提供昆蟲基礎認識與田埂造景植物介紹等兩門課程；水土保持局花蓮分局 2014 年提供經費讓社區將廢棄的四維分校水源修復，使本社區環境教育課程有固定的授課基地。目前主管機關主要應社區需要而給予必要專業或經費支援，本研究將公部門歸類為重要性低但影響力高的權益關係人。

3. 社區本位環境教育課程規劃之主題架構與教學內容

2012 年 9 月~2014 年 12 月課程授課內容可依主題歸為生活文化、生產技能、生態環境與綜合活動四大主題，分別各佔總課程時數的 29%、21%、19%及 31%，每大主題之下又可細分為 4~5 個子題類型的課程。倘若單單依據課程時數百分比，乍看之下容易認為生態環境主題授課時數比例偏低，但實際上由於阿美族的生態智慧(特別是民族植物部分)大多應用於生活中的食衣住行之內，故許多生態環境主題已經包含在生活文化主題中了；另於 2014 年 9 月之後，因已然累積了兩年的課程，生態環境課程若再用以往的社區講師講課、學員聽課的方式進行，已經出現疲乏的瓶頸，故經討論後融合較活潑的生態遊戲、解說實習等方式進行綜合活動。

生活文化主題課程係指民俗實作，依當地居民生活中食(佔生活文化主題時數的41%)、衣(佔 9%)、住(佔 13%)、育(佔 19%)、樂(佔 18%)等子題發想，設計如：阿美族傳統食物製作、傳統頭飾編織、古法傳統茅屋建設與童玩製作等等課程內容。

生產技能主題課程主要為農事課程，可再細分為稻作農事(佔生產技能主題時數的44%)、蔬果農事(佔 34%)、水圳開築與維護(佔 17%)與畜產體驗(佔 5%)等子題。農事課程有許多延伸，從單純邀學員參與特定農事實作，發展到依時序配合作物栽植各不同階段的系列課程，成長為較具系統性的課程規劃。

生態環境主題課程可分為植物資源(佔生態環境主題時數的 17%)、地景與生態資源(佔 47%)、農業生態(佔 25%)與水資源(佔 11%)等子題。因應吉哈拉艾文化景觀保存維護計畫中的「引進環境友善的農法」之環境行動，吉哈拉艾已從原本的有機、慣行農法，進展到目前的綠生、生態、有機和已幾乎滅跡的慣行等四種農法;這些農業生態的進展，亦成為課程所關切的子題之一。

綜合活動主題課程主要是奠基於先前所學而進行的統整性綜合活動，通常是綜合生活文化、生產技能、生態環境三大主題的跨領域訓練，進而促進學習成效，諸如解說示範與實習(佔綜合活動主題時數的 32%)、畢業考試與籌備(佔 29%)、統整討論(佔 12%)、生態遊戲與自然創作(佔 14%)、其他(佔 13%)。

4. 社區本位環境教育課程之成效分析

(1) 社區居民所規劃之課程內容涵蓋生態、產業和文化等整體地景資源

本研究發現，社區居民所認知的在地「地景資源」，並非僅指特殊自然地景，而是涵蓋社區範圍之自然地景、生態、產業和文化資源，可說是一種廣義的地景資源概念，也是一種和人地互動有關的「生活地景」的概念。因此，在研究團隊舉辦的相關社區論壇和工作坊中，社區居民提議的課程主題和內容，即涵蓋社區範圍之自然地景、生態、產業和文化資源，居民的思考其實更具時間、空間和人事脈絡性。本研究建議，推動社區地景資源的保育、環境教育和解說時，宜把握居民所認知之地景資源的多元性、整體性和生活化特性。

豐南村 Pakalongay 解說員初、中和高階培訓課程，可用「生活、生產、生態」等永續發展的三個面向來作分類。藉由上列三主題的課程活動，使青少年能夠多面向的了解社區文史、生活、傳統技藝等面向，並透過這些知識與對家鄉情感的培養，希望學生能夠在未來成為支持、保護社區的力量，肩負起社區發展、文化傳承與守護山林的未來。

(2) 社區講師、家長和協力團隊合作關係是維持課程運作之關鍵

家長態度對於學員參與課程有相當影響力，仍有家長因工作繁忙或其他個人因素等緣故，對課程仍有誤解而拒絕讓學員參與課程；亦有少數家長將管教責任推託於社區講師。但是大部分的家長已從原先禁止轉變為支持學員參與課程，歸納原因有：1)社區講師積極溝通並邀請家長參與課程;2)見證學員改變;3)週末學員有社區講師幫忙看照；4)協力團隊協助製作課程週報及協助召開課程規劃會議有助家長理解課程內容。在課程的規劃及執行過程中，社區講師和協力團隊的互補關係是維持課程運作之關鍵。

三位社區講師 A、C、D 合作之初，對彼此上課方式尚不熟悉，經常發生搶話或者對課程要求不一致而對學員下達不同指令等情況，造成課程進行混亂。所幸，三位社區講師均認同該課程傳承部落傳統知識的目的，因此願意溝通協調，找出彼此默契與分工方式，如於課堂進行時尊重主課講師發言，不影響彼此發揮空間以利課程行順暢。此外，協力團隊於研究期間提出每週課程結束後對課程進行討論的想法，社區講師認為此方式有助溝通彼此想法，利於合作，且可思考未來課程走向，對課程運作甚有助益。

(3) 學員參與社區本位環境教育課程獲得歸屬感與在地認同

根據本研究訪談，參與學員除了學習部落傳統知識，而一同上課的學員也發展出深厚同儕情誼，對於參與學員而言意義深遠，而本研究案例參與學員年齡層屬當地阿美

族年齡階層 Pakalongay，社區講師於教學過程中不時提醒該年齡階層的責任與義務，如豐年祭上負責諸多事務，當年齡階層晉升更有責任帶領年幼弟妹。觀察 2014 年八月年齡階層獲得晉升之學員，不僅仍然參與課程，且在社區講師授權下帶領弟妹學習，年齡階層概念已融入學員觀念，並開始有具體表現。

(4) 社區本位環境教育課程規劃和執行漸趨向多元權益關係人協同規劃

社區本位環境教育課程的規劃者，從原本的授課講師轉變為由協力團隊與社區講師們開會討論，甚至在兩次的豐南社區林業計畫執行時，更擴大邀請家長、社區居民、花蓮林區管理處玉里工作站等，共同參與課程規劃討論會議，建立了一個包含公部門、授課者、學員家長等權益關係人共同參與的夥伴關係平台，形成「大家一起把事情做好」的關係基礎。此外，協力團隊亦陸續邀請生態、文史、水利、教育等相關領域專家分別參與社區本位環境教育課程的授課，並與社區講師們進行專家知識與在地知識的對話交流，互動過程中亦激發社區講師們對於傳授在地知識的自信和學員們對在地知識的認同，進而肯定有機農業的意義與保存四維分校友善環境農法體驗教育的重要性。

(5) 公部門計畫經費資源可增加課程內容的多元性

公部門的計畫資源與經費補助是豐南社區本位環境教育課程規劃與執行過程中的重要行動能量，具體助益於持續而穩定的推動課程，並增加授課講師的多元性，納入更多師資人力，各自貢獻所專長的知識與技能，有助於各角色分工與彼此溝通，合作建立新制度力。

(五)謝誌

本研究之執行工作受 101 年度國科會「社區及學校參與自然地景保育及環境教育之行動研究」計畫、102 年度國科會「結合里山倡議目標的社區本位環境教育行動研究」計畫、103 年度林務局「融入里山倡議目標的地景保護區研究計畫)」之資助，乃得順利完成。特藉此向國科會(現為科技部)、林務局以及花蓮縣富里鄉豐南村所有協助的社區居民致上感謝。

二、 英文案例報告

1. **Title**: Development of a community-based environmental education program in the light of the Satoyama Initiative: A case study of the Pakalongay Interpreters Training Course in Fon-nan village, Hualien

2. **Abstract**: The study aims to analyze the development processes and outcomes of the Basic, Intermediate and Advanced Levels of Pakalongay Interpreters Training Courses in Fon-nan Village, Hualien from 2012 to 2014. ‘Pakalongay Interpreters Training Courses’ were a series of community-based environmental education courses developed collaboratively by the local people and the National Dong-Hwa University. The courses were characterized in a way that local elders developed the courses mainly by

themselves and acted as supervisors to teach local young people. The students were all local Amis indigenous youths and the aim of the courses was to help them to understand their cultural and natural environment, to know the traditional knowledge worth to be inherited, and to learn some interpretation skills to introduce what they learned to tourists. In order to understand the related stakeholders, course development strategies and ways of implementation, issues and difficulties, this study employed the qualitative research methods of date collection including, participant observation, semi-structured interviews and several group discussions. The findings show that the Pakalongay Interpreters Training Courses involved economic, social, ecological and cultural aspects of community related resources rather than a specific professional aspect. Collaboration and complementary relationship between local teachers and the research team was the key to the curriculum development and operating. Most local young students obtained sense of belonging and cultural identity through the courses. Continuning notice and involvement of the students' parents in the process and outcome of the courses could get significant supports from the parents. Relevant financial supports from the governmental projects was important to sustain the courses specially in the beginning stages.

3. **Introduction**: The research area of this paper is Fon-nan Village, located at the southernmost tip of Fuli Township, Hualien County. Being the largest village in the township, it has a territory of 35.18 square kilometers. The registered land of the Cihalaay Cultural Landscape is at the basin of the Stone House Ditch Creek which has an area of 1,040 hectares. It is the northernmost tributary of the Bie Stream in Fon-nan Village. A nearby landmark is the highest peak of the coastal mountain range, Malaoloushan, which has a height of 1682m. The middle and lower reaches of the Stone House Ditch Creek have continued to grow into a core cultural landscape with organic terraces, rivers and tribes, of which terraces totals 15 hectares and six rivers add up to 4,100m long. Twenty-three households and five landlords in the tribe have the closest connection with the functioning of rivers and terraces. The role of local Amis residents can be seen as that of a facilitator of the Cihalaay Cultural Landscape since they successively immigrated from Torik and Chengkong ofTaitung and settled down in the 1930s. In the past they settled here for a living, not that they intended to understand the area from the angle of cultural landscape. Between July 2011 and January 2012, the Hualien Cultural Affairs Bureau collaborated with the National Dong-Hwa University research team to arrange four local forums, and successfully promoted tribal discussions within the community. The outcomes are that residents have recognized the concept and values of cultural landscapes, showed willingness in seeing Cihalaay based on the concept of cultural landscape and Satoyama Initiaitve, and even took the initiative to report the area as a cultural landscape (Lee, 2012).

   On March 27, 2012, the Hualien County Cultural Heritage Commission passed the

community proposal, and in the same year on May 2, the area was announced ‘Cihalaay Cultural Landscape, Fon-nan Village, Fuli Township, Hualien County’ by the Hualien County Government in accordance with the Cultural Heritage Conservation Law. Immediately in the same year between July and June 2013, the National Dong-Hwa University research team was commissioned again by the Hualien County Cultural Affairs Bureau to work on the complete planning for ‘Hualien County Fu-li Township Fon-nan Village Cihalaay Cultural Landscape Maintenance Program’, and integrate the ‘goal-strategy-action’ framework of Satoyama Initiative (UNU-IAS, 2010a) into the ‘Management Principles’and ‘Maintenace Program’ of the related cultural landscape. This contains the following five aspects: recycle natural resources within the limit of natural restoration power, promote mountain patrolling to protect rivers, introduce environmentally friendly farming methods, maintain cultural landscapes including terraces and rivers, explore and develop traditional knowledge and Amis wisdom in land use, and upgrade tribal living quality and increase income growth and so on (Lee, 2013).

The core concept of Satoyama Initiative is about conservation and utilization of socio-ecological production landscapes (UNU-IAS, 2010b). In Asian countries, these landscapes often appear in the form of agricultural cultural landscapes such as paddy fields whereas lands are usually private properties of villagers. As a result, this kind of agricultural cultural landscape conservation and maintenance work depends greatly on stakeholders both in and out of the community to communicate and participate in a flexible and two-way manner, which is, to put in other words, to have a community-based planning and operation mode.

Despite having a statutory basis, conservation and maintenance of Cihalaay Cultural Landscape have just started. Terraces and rivers are the core resources of Cihalaay Cultural Landscape in which the former belong to villagers and the latter are mostly maintained by local residents; hence, enforcement of regulations is not only unwelcomed but also offensive in residents’ eyes. Moreover, the Cultural Heritage Conservation Act has imposed no prohibitions or penalties on regulating cultural landscapes. What can be done is encourage land owners and users to well maintain the landscapes on the consensus-based mechanism of ‘Management Principles’ and ‘Maintenace Program’. That is to say, agricultural cultural landscape maintenance work such as Cihalaay needs positive encouragement and support, and communication and participation of stakeholders from within and out of the community. What’s more, the implementation of ‘exploring and developing traditional knowledge and Amis wisdom in land use’ relies very much on intergenerational learning within the community to become sustainable. The most appropriate approach to promote the idea is ‘community-based education’ as community residents themselves are ‘facilitators’ and ‘owners’ of Cihalaay Cultural Landscape. The best way is to do it ‘informally’ since

recognition and inheriting of ‘values and importance of local traditions and cultures’ have to be built upon the cultural system of traditional intergenerational learning within the community. However, local cultural heritage systems as such tend to disappear gradually under the impact of modernization, and are mostly overlooked by formal schooling.

Based on these concerns, this study aims at exploring the following core question, using Cihalaay Cultural Landscape, Fon-nan Village, Fu-li Township, Hualien County as the research area. That is, how to include stakeholders such as local residents to collaborationly plan and implement a community-based environmental education program so as to further explore and better develop traditional knowledge and Amis wisdom in land use, and further promote awareness of conservation and maintenance of local agricultural cultural landscapes. The results are expected to provide relevant government authorities, rural communities, universities, local schools, civic groups and other stakeholders with reference so that thay can go hand in hand in informal environmental education to engage in maintaining and preserving agricultural cultural landscapes.

4. **Research Methods**: This study is based on the three significant aspects of the ‘action research cycle’ explained by Kemmis and McTaggart (1988), Kuhne and Quigley (1997) and Stringer (1996). They are, namely planning, action and evaluation/ reflection. The first step is to explore ‘the people and things involved in the Satoyama Initiative-oriented community-based environmental education program’ in which the research work on ‘people’ was done through stakeholder analysis (Bryson and Crosby, 1992; DFID, 2002; Grimble and Wellard, 1997) to define stakeholders closely related to the community-based environmental education program while the research work on ‘things’ was conducted via the method of field participation and observation to analyse topics and content covered by the program. The next step is adopting the theory of collaborative planning (Healey, 1997, 1998) as framework (including knowledge resources, relation resources and action-oriented energy) to find out the implementation length and effectiveness of the Satoyama Initiative-oriented community-based environmental education program. Related research work consists of bringing in stakeholders to collaboratively work on planning and implementation of the community-based environmental education program activities, and assess whether the program activities contribute to exploration and development of traditional knowledge and Amis wisdom in land use as well as conservation and maintenance of local agricultural cultural landscapes. Lastly, this study summed up the outcomes gained from theories and a case study, established a Satoyama Initiative-oriented community-based enrivonmental education partnership, and answered the following research questions: 1) What are the issues related to preserving and maintaining cultural landscapes in the community-based environmental education program in this case study?

2) Who are the stakeholders involved in the community-based environmental education program in this case study? 3) What are the main framework and teaching content of the Satoyama Initiative-oriented community-based enrivonmental education program? 4) What are the teaching phases and outcomes of the community-based environmental education program in this case study?

In this study, the qualitative research method was used as a data collection and analysis tool. Relevant research methods include document analysis, student observation, interviews, and group discussions and so on (Huberman and Miles, 1994). Through cross-examining different aspects (triangulation), this study aims to explore the viewpoints of stakeholders such as community residents as to how to sustain traditional culture and skills via a community-based environmental education program. In terms of data analysis and interpretation, this study employed a qualitative research method, that is, the data collected on literature review and in the field was processed theoretically and conceptually in order to come to conclusions.

5. Action Research Processes and Findings:

1) *Origin and early preparations of the community-based environmental education program*:

In the years between 2009 and 2011, Fon-nan Village focused on a three-year key tribal program sponsored by the Aboriginal Committee. To explain, a group of middle-aged villagers returned to Fon-nan to help repair the idling space of Yung-fong Elementary School Si-wei Branch under the guidance of elders, so that it could be developed it into a base for local industries and eco-tourism (Cilamitay Agricultural Experiment Area).

By the time the key tribal program had come to an end in early 2012, ‘What is going to happen to Cilamitay Agricultural Experiment Area at Si-wei Branch’ concerned villagers. This successfully turned into an opportunity for the National Dong-Hwa University and community residents to work towards collaborative discussions and planning. Everyone involved agreed on the fact that not only should they concentrate on tourism, they also educate the young of their own village so that they can learn about farming and get close to the fields, learn about traditional ecological knowledge and preserve the mountains, and learn about traditional norms and skills worth to be inherited. Through education by community elders, it was hoped to nurture a group of young with a sense of belonging, local knowledge and environmental action skills as well.

Consequently, at the start of September 2012, the National Dong-Hwa University Research Team worked together with community residents to launch a series of environmental education courses for the young in the village. Villagers gathered high elementary graders and junior high school students (considered Pakalongay in Amis age) for class on weekends. Class content was discussed beforehand, and two of the

community residents who were interested, capable, and had experience in planning and managing of Si-wei Branch were chosen to be supervisors (Community Supervisor A and B). The course was called Pakalongay Interpreters Training Courses in Fon-nan Village (Chen, 2013).

At the outset, the National Dong-hwa University Research Team and community supervisors had expected to have the Pakalongay Interpreters Training Courses divided into Basic, Intermediate and Advanced Levels, but based on the exclusive design concept for each community (community-based), there was no rush to settle at the content and teaching materials for each level of course. It was hoped that the curriculum for each level could be summed up slowly from experience according to actual development processes.

Below are descriptions of development processes of each level of the Pakalongay Interpreters Training Courses (Figure 24):

Figure 24 On-the-ground progresses of the Basic, Mid and Advanced-level courses

2) Basic Pakalongay Interpreters Training Course from September to December 2012

During the preparation for the second session, 'Workshop for Community Young and Students', more and more residents showed support to community education for the young. That's why the research team and core community members made a decision after discussions to run a four-month teenage basic training course in the local area between September and December 2012, which was called Free Curriculum Development Exploration Period.

However, community residents failed to come up with clear and certain course content and goals, so the research team took the attitude of 'learning by doing' and hoped to come to some kind of framework and operating system during the actual course development processes on which the course curriculum heavily depended.

In the preliminary curriculum discussions, community residents and the research team reached a consensus on the operation of courses (How?): 1) Why? (Curriculum goals): realize treasure, cherish treasure, and display treasure (interpretation); 2) When? (Course time): take place every weekend; 3) Where? (Teaching venues): Fon-nan works as the learning field; 4) What? (Course content): teach local natural and cultural resources; 5) Who teach? (Teachers): local community residents are primary supervisors; 6) Who learn? (Students): local teenagers join courses of different levels according to age and learning qualifications. To put differently, Basic Level students should be able to 'follow others' (experience), Intermediate Level students 'know how to do' (knowledge and skills), and Advanced Level students 'lead others and interpret community resources to tourists (service, leadership and interpretation).

Si-wei Branch Agricultural Experiment Area was the training base for the Basic Training Course, with the entire Fon-nan village being an outdoor environmental education field. Students were mainly 14 to 15-year-old junior high school students in Fon-nan Village. They came to class 6 days a week. Community course teachers decided on the content after careful considerations of the week's routine farming activities, cultural activities, and related environmental topics. As for the research team, they played a collaborative role, that is to say they took full participation in observation and recording, and in discussions with teachers both before and after class (Chen, 2013).

3) Intermediate Pakalongay Interpreters Training Course from September to December 2013

Before the end of the Basic Training Course, community teachers and the research team held meetings to discuss follow-up curriculum connection issues, and decided to advance Basic Level graduates to Intermediate Level, and also invited high elementary graders in the village to join the Basic Training Course. As a consequence, the Intermediate Training Course started to run since January 2013. There were not a fixed syllabus and a schedule at the beginning of the course, and the research team and community teachers still believed that the Intermediate Training Course could be developed in a more flexible manner. Unfortunately, one of the supervisors (Supervisor B) who participated from the very start often failed to squeeze time out to come to scheduled classes, and thus was replaced by a female member of the Cihalaay Cultural Landscape Committee (Supervisor C) who continued to work with Supervisor A in collaborative teaching. Likewise, the research team showed collaboration by full

participation in observation and recording of the whole process, and held discussions with community teachers not only before but also after class. In addition, since a number of students' parents reflected that Sunday was Church Day and so disagreed with having class on Sundays, the Intermediate Training Course was adjusted to take place every Saturday instead.

From January to June 2013, serious absences and participation decline caused the Intemediate Pakalongay Interpreters Training Course to enter a stage referred to as the Free Curriculum Development Bottleneck Period. One of the reasons behind was that participating students were mostly on the track team and soccer team, and two to three out of the six students usually could not make it to class due to frequent games which in turn caused the rest to lose interest. This led to serious absences in the second semester; in fact, only eight lessons were given from January to June 2013. Secondly, that the themes of the Intermediate Training Course forcused more on agricultural activities, which were similar to that of the Basic Training Course, led to a gradual decline in interest and passion. Actually, it would be a good idea to have different themes interspersed throughout the course. For instance, in the camping and night view class on 15-16 June, 2013, it was apparent that students were eager to acquire knowledge and showed much liveliness. Thirdly, training courses were no longer on their trial stage; however, community teachers usually decided on the content shortly before class. This kind of flexible teaching which lacked theme variations and organized schedules came to a bottleneck.

Finally, it came to the point that the research team decided to discuss this dilemma with community residents for countermeasures. On June 20, 2013, the Intermediate Pakalongay Interpreters Training Course Planning Seminar was held at Fon-nan Community Center. Of the eleven residents who took part in it, many of them were parents of participating students. The seminar started with event photos and briefings to review the origin and development processes of the Basic and Intermediate Pakalongay Interpreters Training Courses. It was then followed by discussions of possible themes for the next six months (from August 2013 to January 2014) with residents. At the end, all agreed on three main themes, namely, tribal literature, agricultural experience, and natural experience, and the course titles and content.

In the seminar, many of the residents expressed that attending the meeting actually helped them to further understand the course content and implementation processes of the Pakalongay Interpreters Training Courses, especially on the recognition of learning traditional local culture and knowledge. What's more, children attending class on holidays meant that they had no time wandering outside hanging out with bad friends, therefore parents strongly hoped the course could become even richer and continue to run in the future.

This seminar was attended by not only residents, but also a contracted engineer who worked at Yu-li Station, Hualien Forest District Office, Forestry Bureau. He was responsible for promoting the Community Forestry Program and he took the initiative to join the seminar after hearing about it. Having listened to the Pakalongay Interpreters Training Courses, he expressed that if the community applied the courses to run as a community forestry program, the Forestry Bureau would be willing to show support.

With the assistance of the research team, Fon-nan community held two seminars at the Cihalaay Tribe, Stone House Ditch Creek, Fon-nan Village on 6 and 13 July, 2013 respectively to discuss the possibility of bringing the Pakalongay Interpreters Training Courses to become part of the Community Forestry Program. There were two main issues discussed. First, amendments were made to the decisions arrived at the aforementioned meeting on 20 June. Fon-nan residents had agreed on the monthly themes for the Pakalongay Interpreters Training Courses for the period between August 2013 and January 2014. In the seminar, monthly themes, weekly content and titles, and supervisors were again discussed, and also for a different period of time, that is, from August to November 2013 (duration of 2014 Annual Community Forestry Program). The second was to confirm that the Fon-nan Village Cihalaay Cultural Landscape Committee would take up the responsibility of implementation, funding control, and verification for the Community Forestry Training Courses. The person in charge in the tribe was also chosen in the seminar (Lin, 2013).

The period between August and December 2013 was the Diverse Qualified Teachers and Curriculum Development Period subsidized by the Community Forestry Program. Generally speaking, it took place in accordance with the themes come to in the three seminars on 20 June, 6 July and 13 July, 2013 respectively, with only a small number of themes forced to exclude due to wrong seasons and time. Obvious examples were planting and farming. Part of the course was put off until December owing to factors such as weddings, funerals, celebrations and holidays. A graduation exam and an achievement show marked the end of the Community Forestry Program.

4) *Advanced Pakalongay Interpreters Training Course from January to December 2014*

Based on planning mechanism, the community-based environmental education program carried out in the year of 2014 can be roughly split into three phases: Collaboratively Planned Thematic Curriculum Development Period between January and June 2014, Diverse Qualified Teachers and Course/ Supervisor Training Period between July and August (subsized by Community Forestry Program), and Integrated Thematic Curriculum Development Period between September and December.

The planning of Collaboratively Planned Thematic Curriculum Development between January and June returned to the elastic arrangement of cultural activities depending on the season, time and agricultural activities, but the planners were different from

community supervisors at the initial stage in the sense that they did not decide on the content in the same week any longer; on the contrary, community supervisors worked on class content two weeks beforehand with the help of the Research Team. Early this period one of the supervisors, Supervisor D, who initiated to join the course, put great emphasis on students' expression skills, hence he required each student to share their afterthoughts with the whole class every single time. Not only did this succeed in training students' expression skills, but it also helped the National Dong-Hwa University Research Team understand students' thoughts. The supervisor also recommended course journal be produced weekly to make students aware of the content in advance. Moreover, team members suggested photos be added to the journal to let parents understand students' learning situation.

Thanks to recommendations of the Research Team, the course was enriched with a few paddy field ecological observations in which students had the chance to observe animals inhabited in the terraces of the Cihalaay Cultural Landscape. A number of experts with relevant professional backgrounds were also invited to come to support teaching, that is, to observe insects, plants and water quality. Furthermore, in order to highlight the importance of environmentally friendly farming, the Team proposed comparing the differences among green farming, ecological farming, and conventional farming agriculturally and ecologically. To summarise, the Collaboratively Planned Thematic Curriculum Development Period has shown growth on various aspects including teaching mode, curriculum planning, participants' expression skills and enrivonmentally friendly farming education.

During the Diverse Qualified Teachers and Course/ Supervisor Training Period in July and August, the summer was well taken advantage of to implement diverse courses which were similar to those designed for the time between August and December in 2012. Community supervisors, parents and the Research Team together finalized the course themes, and applied for the funding needed from the Community Forestry Program. Having previous implementation experience, both the community and the Team had so many thoughts about the course themes. In addition to the core agricultural course and traditional cultural course, the two parties came to realise how important water quality was to a community after discussions. In this case study, water for the community mainly comes from Bie River, which flows through the community, and its tributary, the Stone House Ditch Creek. This water source satisfies the needs for residents' livelihood, irrigation as well as Amis celebrations. To make students aware of the meanings of the water source to local livelihood, a series of classes about water resources was added in the corresponding period. Related content consisted of the history of the hundred-year-old river and its maintenance method, and an introduction of the running water system in the community (Chen, 2015).

Unlike the period between August 2013 and August 2014 in which Fon-nan

Community Activity Center was the place where most of the teaching took place; Si-Wei Branch became the main teaching venue between September and December which was referred to as the Integrated Thematic Curriculum Development Period. At that point of time, consolidation of water resources and environment of Si-wei Branch were already completed through a related project of the Water Conservation Bureau in Fon-nan Village. Considering that Si-Wei Branch was relatively remote in location with fewer temptations, most of the teaching took place at Si-Wei Branch. Choosing Si-Wei Branch as the course base also meant an influence on course content arrangements. Due to the fact that Si-Wei Branch was an agricultural experiment area located at Bie River surrounded by mountains, it was relatively convenient to arrange traditional Amis ingredient collection activities like fishing and wildberry picking. Students got to experience from planting to picking, from cooking to eating. In the past, classes were almost always led by community supervisors who jointly participated in picking, cooking and eating. However, in this period older teenagers were assigned the mission to lead the younger ones in activities which indeed promoted the purposes of Pakalongay – leadership and service learning, and reached parents' expectations of Amis cultural heritage. In this series of courses, growth in both teaching and learning can be seen. Community supervisors who already accumulated one to two years of experience started to know what was worth to be taught. For instance, community supervisors purposely arranged picking vegetables and mixing environmentally friendly fertilizers to be done on Saturdays and spent two one to hours on experimental teaching while they could have done those in half an hour by themselves in advance. Up to this period, knowledge and skills of various kinds such as ecological environment, life cultures, and production skills and so on have been accumulated and passed on. In the past, reviews were done in a boring way in which supervisors did all the talking and students just listened. This brings tiredness to supervisors and caused participants to lose concentration. Therefore, after discussions between community supervisors and the Team, content previously taught was integrated quite many times and then reviewed in a lively, integrated way. This not only enhanced learning motivations, but also increased learning effectiveness. This time was referred to as the Integrated Thematic Curriculum Development Period.

6. Discussions and conclusions

1) An analysis of cultural landscape conservation and maintenance issues related to community-based environmental education program

In the community-based environmental education program in Fon-nan Village, community residents who knew well about Cihalaay Cultural Landscape resources were invited to be supervisors to try to integrate into the curriculum related cultural landscape conservation and maintenance issues. Details are given below:

- Issues related to paddy field production and river maintenance

  Between January and June 2014, ecological observation activities at the paddy field were included into the course many times, and community supervisors, students and the research team discussed the advantages and disadvantages of various farming methods. Were the insects observed in the paddy fields pests? Or were they beneficial insects? Did pests do anyone any harm? Who did they help? These fascinating ecological agricultural questions have become issues worth to be explored step by step in the community-based environmental education program.

  In the year of 2014, the Cihalaay Cultural Landscape underwent two major storms which caused great destruction. The first storm caused terrace ridges to collapse, and rivers to break. Paddy fields were dried out, so farmers were forced to let their land lie fallow. Terraces then completely dried out because of fallow land, and so they failed to survive the second storm and collapsed again. Tribe seniors expressed that such disasters would never happen in their times because ancestral knowledge always warns them not to let farmland lie fallow. Can the wisedom in the memory of the elders continue to be inherited through the community-based environmental education program? How can it be done? Who will undertake the mission of heritage? These are also the issues worth to be looked at one by one in this study.

- Issues related to mountain and river maintenance

  The meaning of Cihalaay in Amis refers to the richness of the Taitung Intermediate Stream Loach, which is ranked as the second precious and rare wild species in Taiwan. However, the mountains and waters that Fon-nan Village feels proud of are faced with the threat of the introduction of advantageous fish species, fish being killed with electricity or poison. The importance of environmental education lies in knowledge, affection and skills, and if teaching is limited to knowledge, it would be difficult not only to appeal to students, but also to facilitate mountain forest protection. How to inspire students and trigger actual environmental action are also what this study has to spend time on. In addition to the above, the Research Team also contributed to the success of the Hualien County Cihalaay Creek Closure Program to protect the river, and implementation of the Forest Protection Program in Fon-nan Village in conjunction with the Hualien Forest District Office to prevent illegal logging. Issues of mountain patrolling and river protection were gradually integrated into the curriculum of the community-based environmental education program in Fon-nan Village.

- Issues related to local knowledge and traditional cultural heriatge

  Cultural Heritage and tribal language training have always been the concerns of parents. They repeatedly expressed the hope to teach the concept of the traditional Amis age class through the community-based environmental education program. Some time between September and Decmber 2014, the chance just appeared naturally.

Demonstrations were first given by community supervisors, followed by related activities led by older teenagers to involve their younger siblings. Amis shows great wisedom in the use of plants. From July to August 2014, through the knowledge communication platform between scholars and experts trained by the community-based environmental education program and community supervisors, it was discovered that the use of plants carried significant local wisedom. Both scholars and supervisors felt that students required special training on this particular subject. Local knowledge and traditional cultures were usually the courses that interested the most students, and community supervisors once guided students to think about how to give a new lease of life and meanings to traditional cultures in today's modern life. It is believed that this topic shall be slowly developed to become the core content of the community-based environmental education program.

2) An analysis of stakeholders related to community-based environmental education program

This study categorized stakeholders into four different classes (see Figure 4) depending on their significance and influence on the development of the community-based environmental education program. Interactions between the roles and functions of each stakeholder are shown in Figure 25(Chen, 2015).

- Community supervisor (Sinsi)

In this study, community supervisors refer to the community elders who give guidance to students in the community-based environmental education program in a long-term, who plays a role close to that of a school classroom teacher. They are the pillars of the entire course. The program started with two male elder supervisors (Supervisor A and B); but Supervisor B was forced to quit as s/he had too much to attend to. Therefore, Supervisor C was hired instead to teach Amis female knowledge to students. Later in the year of 2014, a community elder, Supervisor D, joined voluntarily, so in each class two to three supervisors led the students through the courses.

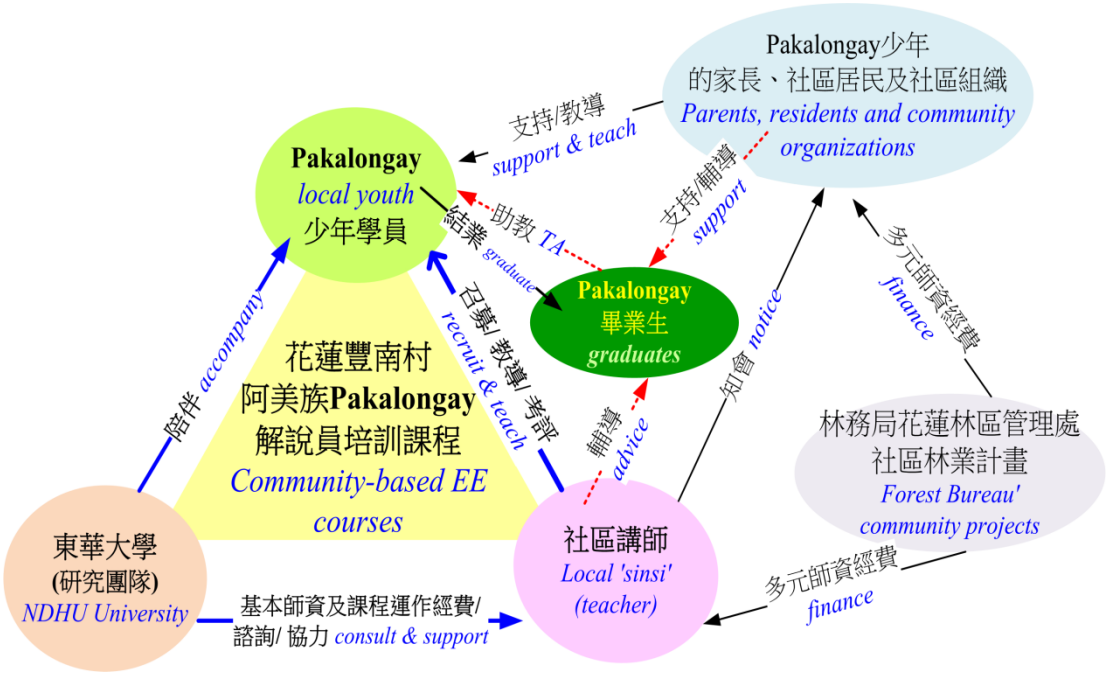

Figure 25 Roles and interactions among different stakeholders

Community supervisors were the core leaders in the course, and the three supervisors each focused on something quite different from one another. Supervisor A was good at taking advantage of the materials at the very venue to improvise in class; Supervisor C concentrated more on physical and psychological development and teaching material preparation while Supervisor D emphasized details such as course rules and class management. At the start of cooperation, they were unfamiliar with one another's teaching style, and so they often either talked simultaneously or gave different instructions to students. Luckily, the three were willing to communicate in order to collaborate and find a way to work together. Community supervisors had decisive power affecting the program's development, and they each were equipped with a strong motivation to participate; therefore, community supervisors are regarded as highly significant and highly influential stakeholders.

- Students (Pakalongay)

  Students who took part in this case study ranged from elementary to junior high school, which just corresponded to the Amis age group, Pakalongay. Youths of this age range are subject to the guidance of elders in Amis tradition; they also have to take up the responsibility of caring for their younger siblings; and at the same time they need to attend to many matters at the Harvest Festival including tasks like pouring wine, fetching water, and begging for rice. The total number of graduates from the Basic, Intermediate and Advanced Levels of the Pakalongay Interpreters Training Course in the period between September 2012 and Decmeber 2014 are as follows: In 2012, there

were only seven students at the age of 14 or 15. As time passed, more and more youths participated due to invitations from either friends or community supervisors. Up until the end of 2014, the number of regular students reached up to 18, with 68% of males and 32% of females.

From interview data collected by the research team, what attracted youths to join the course lies not only in learning traditional tribal knowledge and developing peer friendships, but also in killing time on the weekend. However, some students did not come to class on a weekly basis due to school activities or games, or family reasons. Students did not have much to say about the curriculum development because of the lack of opportunities, plus whether they came to class or not was usually affected by external forces; therefore, students are regarded as stakeholders with high level of significance but low level of influence. In August 2014, the four students who stayed with the course the longest finally graduated from junior high school, and in the same year they were promoted to a more advanced age group in the Harvest Festival. After graduating from Pakalongay, they continued to take part in Saturday classes. With permissions from community supervisors, graduates led younger students in activities in part of the practical course. This was actually an act to try to get graduates more involved.

- Parents

  Parents' attitudes towards the program have obviously changed. At the initial stage, there was a lack of communication between community supervisors and parents. Thie led some parents to think that community supervisors gathered students to make them work. Fortunately, community supervisors actively communicated with parents to make them understand. Also, during the course chances were arranged to let students demonstrate their learning outcomes in front of the elders. What's more, parents got to see the weekly journal produced. All these added up, and thus part of the parents softened their attitudes to become in favor of the course. It is apparent that parental attitude played an important role in affecting students' participation. This study therefore categorized parents as stakeholders with low level of significance but high level of influence.

- Community residents

  Community residents have diverse knowledge and skills. If they can participate in the course, they can enrich the course content to make up for the areas community supervisors are not good at, which is actually a very great resource for the community-based environmental education program. However, it is easier said than done. Due to limited funding, the program could only afford to pay two supervisors the basic wage. Inviting other local residents to join teaching would mean that the community needed to apply for funding through other relevant programs. In 2013 and

2014 respectively, fortunately, the Community Development Association succeeded in getting grants from the Hualien Forest District Office, Hualien Bureau for the Community Forestry Program, which enabled us to have community elders with diverse expertise to give lessons for about three to four months. This process, in turn, increased the visibility of the environmental education program in the community. Via interactions with community supervisors and students, community residents further understood the composition and operation of the course and at last showed recognition. Most of the residents invited expressed willingness in giving lessons again if opportunities arose. Current residents participating in the course are relatively few in number; those who have not joined still hold doubts and therefore gave negative comments, which have formed pressure on community supervisors indirectly. In this study, the other community residents were put under the category of stakeholders with a low level of significance but a high level of influence.

- Research Team

  The Research Team refers to the research team of this study, whose duty is to get involved in curriculum development as a third party. At the end of each week's course, the Team regularly met up with community supervisors for reviews and discussions over matters like students' performance, the way teaching progressed, and course arrangements for the next week and so on. These after-class discussions were very much valued by community supervisors as they thought this was the way through which they could get to clarify doubts, share thoughts, and brainstorm new ideas. They also felt that the way to collaborate with the Team enabled the course to develop even more steadily. In addition, the Team assisted in arranging training course for community supervisors, and supplying a teacher candidate list to the community. To sum up, the Research Team offered help to community supervisors in course planning, implementing and reviewing, and providing necessary resources through the program. The Team also explored the feasibility of a community-based environmental education program through the cooperation. This study has classified the Research Team as a highly significant and highly influential stakeholder.

- The public sector

  This case study is related to the public sector through departments like the Hualien Forest District Office, Hualien Bureau, Council of Agriculture; the Hualien District Agricultural Research and Extension Station, Council of Agriculture; and the Hualien Branch, Soil and Water Conservation Bureau, Council of Agriculture. The Community Forestry Program of the Hualien Forest District Office provided funding for the Diverse Qualified Teachers Course for three to four months. As for the Hualien District Agricultural Research and Extension Station, it offered related agricultural and ecological courses according to community needs in 2014. For instance, it offered two

courses named Basic Knowledge of Insects and Landscaping Plants for Terrace Ridge respectively. The Hualien Branch, Soil and Water Conservation Bureau provided funding to allow the community to restore water resources at the abandoned Si-wei Branch, which made it possible for the school to work as a fixed teaching venue for the community-based environmental education program. Currently speaking, the role of government authorities is to give any professional or financial help needed to the community. In this study, the public sector is regarded as a stakeholder with a low level of importance but a high level of influence.

3) *Primary framework and teaching content of community-based environmental education program*

Based on the themes, the course content for lessons given between September 2012 and December 2014 can be divided into four major categories, namely life culture, production skills, eco-environment and integrated activities, with each of them composing 29%, 21%, 19% and 31% of the total numbers of teaching hours respectively. Each major theme can be further divided into four to five sub-topics. When glancing over the percentage distribution, one might think that fewer teaching hours were assigned to eco-environment compared to the others; however, the truth is that Amis ecological wisedom is mostly applied in their daily lives, which means many of the eco-environmental topics had already been put under life cultre. By September 2014, the course had already run for two years; and students started to get tired of the same lessons given by the same supervisor in the same way. In order to break the bottleneck, discussions took place, and finally integrated activities such as ecological games and interpretation practices were added into the course to make it livelier.

Life culture courses refer to folk practices developed over different aspects, namely food (composing 41% of the total number of teaching hours), clothing (9%), housing (13%), education (19%) and entertainment (18%). Courses of different content were designed, for example traditional Amis food production, traditional headdress knitting, and building of traditional hut in an old-fashioned way and toy making.

Production skills are mainly about agricultural courses which were subdivided into rice growing (accounting for 44% of the total number of teaching hours), vegetable growing (34%), river construction and maintenance (17%) and livestock raising (5%). Agricultural courses can be extended from simply inviting students to particular agricultural activities to a series of courses of planting different kinds of crops depending on the season and timing. This course grew to have a relatively more systematic curriculum with planning.

Major eco-environmental courses can be divided into plant resources (consisting of 17% of the total number of teaching hours), landscape and ecological resources (47%), agro-ecology (25%) and water resources (11%). In response to the “Introduction of

environmentally friendly farming methods" in the Cihalaay Cultural Landscape Conservation and Maintenance Program, Cihalaay has developed from organic, conventional farming to the current four farming practices - green, ecological, organic and conventional farming which was rarely practiced. These eco-agricultural developments have grown to become a sub-topic worth attention.

Integrated courses were founded on the previous activities carried out. They were usually done through cross-theme training integrated with life culture, production skills and eco-environment to enhance learning effectiveness. For example, there were courses on interpretation demonstration and practice (accounting for 32% of the total number of teaching hours), graduation examinations and preparation (29%), integrated discussion (12%), ecological games and free creation (14%) and others (13%).

4) An effectivesness analysis of community-based environmental education program

- Course content planned by community residents covered the entire landscape resources: ecology, industry and culture

  It was discovered that the concept of landscape resources understood by community residents did not necessarily mean any particular natural landscapes; instead, it covered a wide range of the community – natural landscapes, ecology, industry and culture resources. It can be said a broad sense of living landscape which focuses on interactions between people and land. Consequently, course topics and content suggested in related community forums and workshops organized by the research team tended to widely cover natural landscapes, ecology, industry and culture resources in the community. In fact, the thoughts of residents made even more sense considering time, space and people. It is recommended that the diversity, integrity and life-liked feature of the landscape resources recognized by residents be carefully considered when it comes to promoting community landscape resource conservation and environmental education and interpretation.

  The Pakalongay interpreters at the Basic, Intermediate and Advanced levels of the training program at Fon-nan Village can be categorised into three sustainable aspects – living, production and ecology. By taking part in the course activites under the three major themes, it is strongly hoped that local youths could understand community literature, life and traditional skills from various angles; obtain sense of belonging; support and protect the community, take up the responsibility for community development, cultural heritage and guard the mountains in the future.

- Community supervisors, parents and the Research Team are the key to maintenance of course operation

  Parents' attitudes have a huge amount of influence over students' participation. In spite of the fact that some parents refused to let their children join the program due to

overloaded work, misunderstandings or other personal reasons, and a few parents shirked their disciplining responsibilities to community supervisors; most of the parents made a turnabout in their attitudes from banning to supporting their children to participate in the program. Reasons summed up include the following: 1) Community supervisors actively communicated and invited parents to participate in the course; 2) Changes in student were clearly witnessed; 3) Students were well taken care of by community supervisors on weekends; and 4) The Research Team assisted in producing weekly journal and facilitating curriculum planning meetings to help parents understand course content. In the planning and implementation of the course, the complementary relationship between community supervisors and the Research Team is the key to maintaining the operation of the course.

At the outset of cooperation among Supervisor A, C and D, they were unfamiliar with one another's teaching style, and there were often situations in which they either initiated talking at the same time or gave different commands to students, resulting in confusion. Fortunately, the three parties recognized the course as a medium to realize heritage of traditional tribal knowledge, and therefore were willing to communicate and coordinate their efforts to find a way out. For example, they showed respect to one another by not interrupting the subject supervisor in order to allow a better performance and a smooth class. Besides, the Research Team raised a suggestion to hold after-class discussions which community supervisors thought were conducive for understanding each other's ideas, beneficial to cooperation and useful in finding a direction for the course in the future.

- Sense of belonging and local recognition acquired through community-based environmental education program

  According to interviews, not only did students learn about traditional tribal knowledge, but they also developed close peer friendships. To students, these are of far-reaching significance. Students in this case study belong to the Amis age group, Pakalongay, and community supervisors kept reminding them of their age responsibilities and obligations throughout the lessons given such as duties at the Harvest Festival. The age group has even grown to be mature and responsible enough to care for their younger siblings. Students who gained promotion to a higher age level in August 2014 not only continued to participate in the course, but also led their younger siblings in learning under supervisors' authorizations. It is obvious that age concept has already made an influence on students and started to show results.

- Planning and implementation of community-based environmental education program are moving towards collaborative planning of multiple stakeholders

  Planners of the community-based environmental education program changed from only community supervisors into cooperation between the Research Team and community

supervisors. There were even two times in which parents, community residents, and Yu-li Station of the Hualien Forest District Office were invited to contribute ideas at course planning meetings during implementation of the Fon-nan Community Forestry Program. A partnership platform involving participation of stakeholders such as the public sector, teachers, and students' parents was successfully established and a complementary foundation was formed. What's more, the Research Team successively sent invitations to experts of related fields, namely ecology, literature, water and education, to give lessons for the program, and encouraged exchanges between experts and community supervisors to share their knowledge. Through interactions community supervisors grew confidence in teaching and students showed recognition for local knowledge. All these have once affirmed the significance of organic farming and conservation of the environmentally friendly agricultural experimental education at Si-wei Branch.

- Financial resources from the public sector can enrich course content

  Resources available and financial subsidies from the public sector are the most indispensable to the planning and implementation of the community-based envirnomental education program in Fon-nan Village. They enabled the program to be promoted in a continuous and steady way, provided the possibility of diverse supervisors who contributed his or her own expertise (knowledge and skills), assisted the division of work and inter-communication, and established a new institutional force.

第四節、復興無菸部落 TPSI 案例報告：阿美族民族植物之知識與利用

一、 中文案例報告

1. **案例名稱**：復興無菸部落阿美族民族植物之知識與利用
2. **組織名稱**：花蓮縣阿美族社區營造協會
3. **摘要**：花蓮縣豐濱鄉復興部落，雖然如同許多農村人口外流且老化，因著堅定信仰的支持，使僅存的在地居民人老心不老，於民國九十五年成為全國第一個無菸無酒無檳榔的無菸部落。雖然現在人力不足以維持梯田的耕作，但在地的 Faki、Fai(阿美語的男性長輩、女性長輩之意)老當益壯，仍然遵循著傳統阿美族簡約樸實的生活方式，善於保全活用森林產物，與大自然和諧共生。
4. **案例主題類別**：森林、農地
5. **關鍵字**：阿美族民族植物、保全活用、無菸部落
6. **主文**：

沿著湛藍的台灣東海岸走，彎進新社村的一條蜿蜒小徑，逐漸步入宛如海岸山脈裡的伊甸園—復興無菸部落。阿美族祖先遷徙至此，見此地遺留海中貝類(阿美語稱為「力比 Dipid」)繁多，故稱那條貝殼密集的溪為「力比旦溪 Dipitan」，此地也因此而稱之為「力比 Dipid」部落，至光復後才改稱「復興部落」。

照片 10 復興無菸部落 Lalapaan 步道俯瞰山海美景 (林祐竹攝)

民國四十一年真耶穌教會設立之後，復興部落便積極與教會結合，因著宣揚在基督裡成為新造的人之無菸健康理念，而成為全國第一個無菸部落；居民秉持

著愛人如己的信念，四處做志工，服務其他地區老人，信仰真可說是復興部落的在地策動凝聚核心。大多數人都知道看颱風草的葉中央有幾摺，今年就會有幾個颱風真正入侵台灣，理事長王明源 Faki 隨手指著路邊的颱風草談到阿美族何以如此有智慧的保全活用森林產物，他表示：「聖經上說『你去察看螞蟻的動作就可得智慧』。」言下之意，遵循聖經教導師法自然就可得著智慧。

復興無菸部落以落實 Dipid 與周遭山、海、溪流的自然環境和諧共生為目標，以保護和永續利用山林溪流資源、維持梯田的生產、生態和景觀功能、傳揚傳統知識與技能、增進多元夥伴關係為對策，並擬定五大行動面向 (圖 26)。

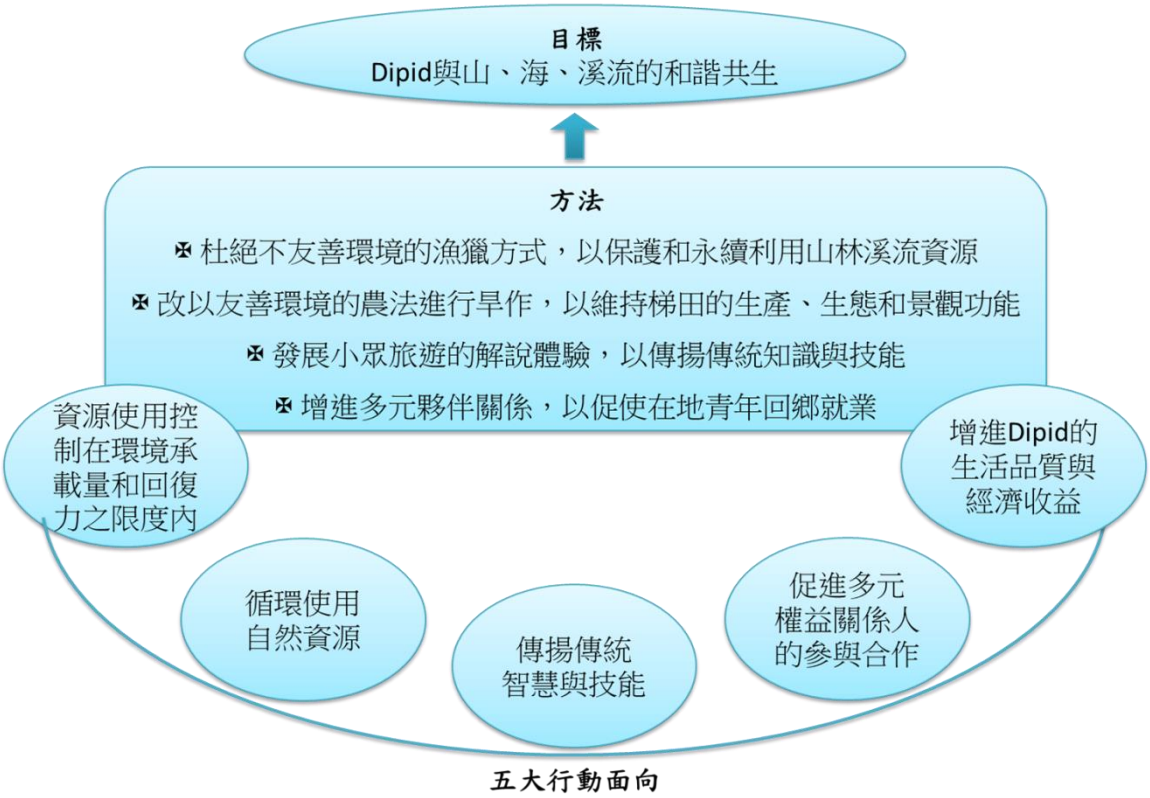

圖 26 復興無菸部落的里山倡議三摺法架構

1) 資源使用控制在環境承載量和回復力之限度內：

不僅止於鼓勵在地人以友善環境的農法進行旱作、以生態工法施作步道、以嚇阻代替獵捕侵擾農作之野生動物，更對於外來遊客的旅遊型態與預約人數上進行控管，以控制在環境承載量和回復力之限度內。

「拉拉芭岸 Lalapaan」意指放牛之地。循著一條古樸而毫無水泥的步道往上走，每一層階梯都運用著阿美族祖先流傳的生態工法，讓我們邊走邊感佩這條原住民與大自然共存共榮的心血結晶。

照片 11 運用傳統生態工法施作的拉拉芭岸 Lalapaan 步道

近年來復興部落因缺乏人力管理維護水圳梯田，因而改種植旱作，如：不灑農藥的火龍果、洛神花等。其中洛神花已發展可讓遊客醃製洛神花的體驗遊程，復興部落的洛神花物美價廉，品質不亞於台東。

照片 12 友善環境農法種植的洛神花

2) 循環使用自然資源：

水資源豐沛的復興部落，善於妥善應用水資源於搗米、嚇阻野生動物，並循傳統方式進行堆肥，皆是在地居民循環使用自然資源的例子。

照片 13 耆老解說傳統水力搗米器具的阿美語稱作 Pitifekang

先民來到溪邊發現酒甕(阿美語「瀑魯 Polo」)，便將此溪命名為「瀑魯幹溪 Polopkang」。為防止野生動物下山享用 Faki、Fai 辛苦耕種的農作物，於是在瀑魯幹溪邊設置阿美族語稱為「sapifahfah ko fafoy」的竹筒，盛滿水後的竹筒因旋轉而敲擊發出清脆響聲，以驅趕代替獵捕動物，乃復興友善環境的具體措施之一。

照片 14 以驅趕代替獵捕動物的「sapifahfah ko fafoy」竹筒

3) 傳揚傳統智慧與技能：

透過部落耆老解說導覽，帶領遊客深度體驗先民善用民族植物的方式，進行小眾旅遊，以傳揚傳統生態智慧與技能。2015 年更嘗試初推父親節-復興結的傳統草鞋民俗技藝節慶，增進在地居民凝聚及旅外同胞歸鄉，提升其文化認同。

照片 15 保全活用森林資源製作草鞋

照片 16 在地耆老解說阿美族民族植物的傳統智慧與技能

而傳統民族植物在飲食方面的利用，舉凡昭和草(Kalawangay)、大花咸豐草(Kasipilay)、龍葵(Tatokem)、過貓(Pahko) 、山蘇(Lokot)、牧草心(Peneng)等等，阿美族多半摘取嫩葉、川燙後，就搖身一變成為令人垂涎欲滴的阿美族珍饈。不同地域有著不同植物而衍生出各具特色的阿美族飲食文化，在花東縱谷的阿美族部落中遍尋不著的阿里鳳鳳(Alifonfon)，即是居住於東海岸的阿美族特產喔！阿里鳳鳳類似漢人的肉粽，以植物葉片包裹著糯米飯(Hakhak)，是海岸線阿美族上山工作所帶的便當，繁瑣的製作過程中蘊含著妻子對丈夫的愛意：採集海岸植物林投(papah no paringat)、一一去除鉤刺、洗淨、取用四條林投葉依序交叉編織、蒸煮一個小時以上而製成。近年來亦發展以月桃(Lengac)的葉子編織而成的阿里鳳鳳，

雖內容物都是糯米飯，但會隨不同植物包裹而有不同的馨香之氣。

照片 17 阿美族民族植物應用於傳統美食阿里鳳鳳(Alifonfon)

4) 促進多元權益關係人的參與合作：

早年與在地的真耶穌教會結合，義務推廣許多公益理念，近年來更與東華大學學者專家以及林務局花蓮林區管理處、水保局花蓮分局、花蓮區農業改良場等單位合作，進行更多元的社區培力計畫。

照片 18 復興無菸部落與多元權益關係人

5) 增進 Dipid 的生活品質與經濟收益：

無菸、無酒、無檳榔的身心健康生活，早已在復興無菸部落行之多年，目前

仍持續地藉由部落義工向外推廣；而近年來越來越興盛的生態旅遊與在地農特產(洛神花、刺五加、藤心等等)，也提高了經濟收益。

花蓮特有的野生刺五加，在許多醫學報告裡顯示具有抗氧化、解疲勞之效。如今與農會合作生產，成為復興部落的特色奉茶，用以款待遠道而來的賓客

照片 19 野生刺五加

為了實現生物多樣性的保育與利用(即保全活用)，2010 年 10 月由聯合國大學與日本政府共同啟動了里山倡議的國際行動計畫；因此復興無菸部落 Dipid 透過三摺法架構，實現與山、海、溪流和諧共生的里山倡議。

二、 英文案例報告

1. Title: Conservation and utilization of Amis ethnobotanical in smoke-free Fuhsing tribe

2. Name of organization: Amis Community Building Association, Hualien County

3. Summary: Fuhsing Tribe at Fengbin Township, Hualien County is similar to many other rural villages, Fengbin suffers from population outflow and ageing. Supported by their religion, however, local elders firmly believed they could still do something to contribute. In 2006, Fuhsing was announced the country's first tribe free from smoking, alcohol and betel nuts. Though there is insufficient manpower to cultivate rice paddies at present, local male and female elders (Faki and Fai in the Amis language) are strong and well, and still follow the traditional Amis way of leading a plain and simple life, which is dedicated in conserving and utilizing natural resources and living in harmony with Mother Nature.

4. Themes: forests and agricultural fields

5. Keywords: Amis ethnobotanical, conservation and utilization, smoke-free tribe

6. Main text:

Stroll along the east coast of Taiwan, turn into a meandering trail of PateRungan, and in no time you will right be in the Garden of Eden in the coastal mountains - Smoke-free

Fuhsing Tribe. At the time Amis ancestors migrated to this place, they happened to discover lots of shellfish (Dipid in the Amis language), so they decided to call the stream Dipitan. This place, hence, which had once been called Dipid Tribe, was changed to Fushing Tribe after renaissance.

Since the establishment of the True Jesus Church in the year of 1952, Fuhsing Tribe has been in close connection with the church. Advocating the idea of no smoking to become a new man in the kingdom of Christ, Fuhsing became the country's first smoke-free tribe. Upholding the belief of loving others as oneself, residents volunteered here and there to serve the old in other areas. Religion can be said to be the core of cohesion in Fuhsing Tribe. Most of the people know the number of folds in the center of a Palm Grass leaf represents the number of typhoons that are going to strike Taiwan in the year. Wang Ming Yuan, the Chairman, pointed at the Palm Grass on the roadside, explaining how wise Amis are in preserving and utilizing forest products, 'The Bible says, "You go look at the ants and be wise."' In other words, you will be wise if you follow the Bible.

How smoke-free Fuhsing Tribe, Dipid, realize the spirit of Satoyama Initiative through the 'three-fold approach? 'Smoke-free Fuhsing Tribe aims at achieving harmony and coexistence between Dipid and its surrounding natural environment - mountains, streams, and seas. There are four strategies including: putting an end to environmentally unfriendly hunting and fishing to promote sustainable use of forest and stream resources; adopting an environmentally friendly dry farming to maintain hill slopes' production, ecological functions and scenic beauty; developing small-scale ectourism with interpretation and experience of traditional knowledge and skills; enhancing multi-partnership to attract the young to return home to work. There are five aspects of action including (Figure 27):

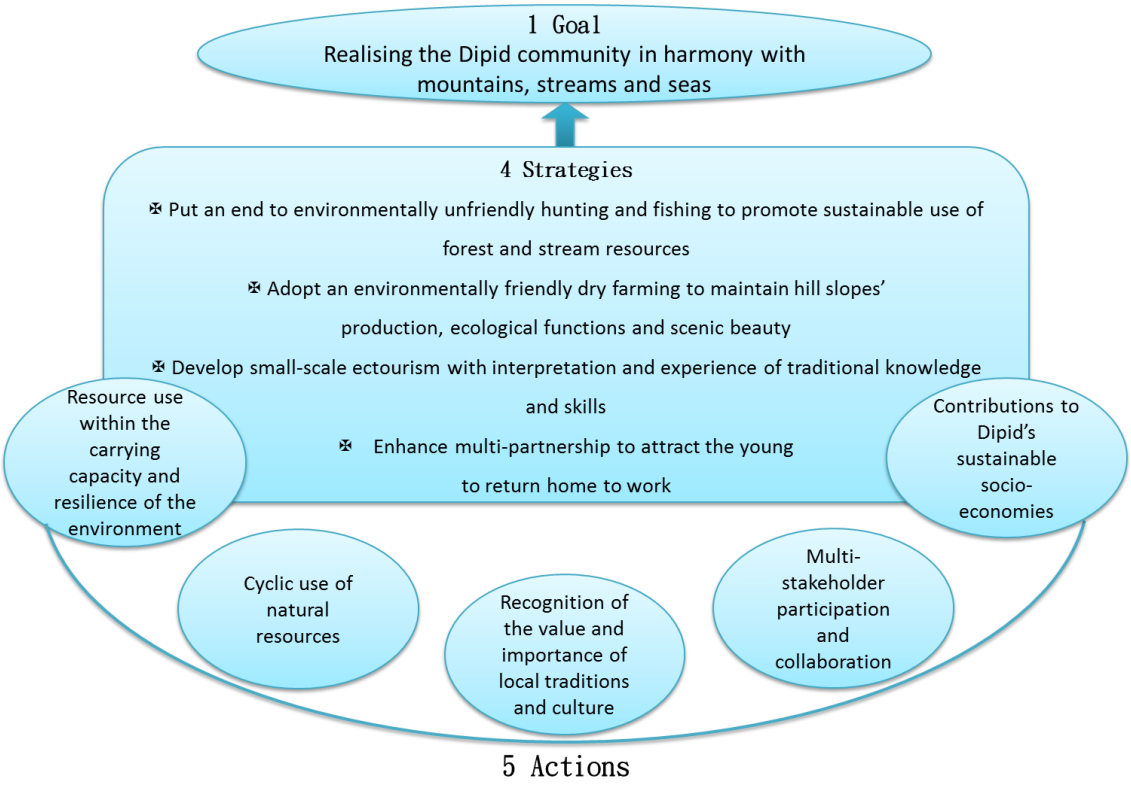

Figure 27 Three-fold approach of Dipid

1) Resource use within the carrying capacity and resilience of the environment

Encouraging people to adopt dry farming in an environmentally friendly way; deterring wild animal intrusion instead of hunting; controlling tourist activities and number. Lalapaan means a grazing field. Walk up an ancient trail with no concrete paving, you will find each step built using ecologically friendly methods inherited from Amis ancestors. Let us take a walk and admire the coexistence of the aboriginal and the nature. In recent years, due to the lack of manpower to manage and maintain terraces and rivers, residents have turned to dry farming. They grow Dragon fruit and Roselle without the use of pesticides. You can take the chance to experience pickling Roselle at Fuhsing. The quality of Roselle grown and sold here are as good as those produced in Taitung.

2) Cyclic use of natural resources

Using abundant water resources properly to pound rice; following the traditional way of composting; utilizing wild plants for medicinal and food purposes. Ancestors came to the stream and accidentally found wine urns (Polo in the Amis language), thus they named the stream Polopkang. To deter wild animals in the mountains from eating their crops, Amis set up sapifahfah ko fafoy bamboos by the stream. When bamboos are filled with water, they rotate and hit the ground, and a crisp sound will be produced. This method does not kill animals but scare them away, and is considered one of the concrete environmentally friendly measures.

3) Recognition of the value and importance of local traditions and culture

Developing small-scale ecotourism with interpretation tours given by tribal elders to

provide tourists with in-depth experience of utilizing wild plants as a way of revitalizing traditional ecological wisdom and skills. In 2015, the first Fuhsing Straw Sandal Folk Art Festival on Father's Day was held to enhance cohesion within local residents, attract traveling compatriots to return home, and acquire cultural identity. Amis, who specializes in the ethnobotanical used in food, have true love for grasses and weeds. . Their vegetable list includes Kalawangay, Kasipilay, Tatokem, Pahko, Lokot and Peneng and so on. Amis usually harvest the young leaves, and turn them into an Amis mouth watering delicacy simply by bringing them to the boil. Different plants in different regions lead to distinctive Amis food culture. Alifonfon, which cannot be found in the East Rift Valley, is a local specialty of Amis living in the east coast. Like the rice dumpling of Chinese, Alifonfon is glutinous rice (Hakhak) wrapped in plant leaves. When Amis living along the coastline go uphill to work, they carry Alifonfon for lunch. The complicated process of making it contains love from the wives to their husbands. The first step is to pick some leaves of papah no paringat (Pandanus), a coastal plant. Second, remove the thorns and wash thoroughly. Third, cross-weave four strips of Screw Pine (Pandanus) leaves in sequence to make a container. Last, steam it for more than an hour. In recent years, Lengac (Shell Ginger) leaves have been used to make Alifonfon instead. Although contents are the same, a different plant brings a different fragrance.

4) Multi-stakeholder participation and collaboration

In early years, Fuhsing Tribe combined with the True Jesus Church to voluntarily promote charitable concepts. In recent years, it took a further step to cooperate with the National Dong-Hwa University; the Hualien Forest District Office of Forestry Bureau; Hualien Branch of Soil and Water Conservation Bureau as well as Hualien District Agricultural Research and Extension Station and many more to implement different community development programs.

5) Contributions to Dipid's sustainable socio-economies

A physically and mentally healthy life without smoking, alcohol or betel nuts has long been practiced in the smoke-free Fuhsing Tribe, which are still being promoted outwardly through voluntary work. In recent years, the more and more flourishing eco-tourism and local agricultural products such as Roselle, Three-leaved Acathopanax Root and Dongec (Yellow Rottan Palm) have also helped improve economic benefits. Unique to Hualien, the wild Three-leaved Acathopanax Root has been shown in many medical reports to have anti-oxidation and tiredness easing effects. In cooperation with the Farmers' Association, it has become a signature tea offered at Fuhsing to welcome guests from afar.

To achieve conservation and utilization of bio-diversity, in October 2010, the United Nations University and the Japanese government jointly launched an international action called Satoyama Initiative. The word 'Satoyama' was derived from Japan, referring to villages, farmland and its surrounding woodland. It has functions of providing traditional rural life with firewood, weeds, mushrooms, bamboo shoots, water resources and compost, showing a mosaic landscape in which the man and wildlife take what is needed in an

sustainble cycle. The meaning of ‘initiative’ is defined as ‘the very first act to solve the problem’. That’s why Satoyama Initiative puts considerable emphasis on implementation and on-the-ground practices. Dipid Realize harmony and coexistence between Fuhsing Tribe, , and its mountains, streams and seas in the light of Satoyama Initiative

第四章、國際交流與國內研討

第一節、與自然和諧共生的農村發展：生態農業與里山倡議國際研討會

一、 大會內容

1. 會議名稱： 與自然和諧共生的農村發展：生態農業與里山倡議國際研討會
2. 會議時間：民國 104 年 9 月 22~25 日(星期二~五)
3. 會議地點：9 月 22 日太魯閣國家公園、 9 月 23 日花蓮區農業改良場、9 月 24 日新社部落、復興無菸部落、富興生態農場、9 月 25 日花蓮縣富里鄉豐南村

二、 大會過程及內容

(一) 9月22日參訪

在正式研討會開始前一天，與會國際學者(Josef Settele,Steven Wratten,Kong Luen Heong,鈴木涉,市川薰)以及東華大學李光中副教授前往太魯閣國家公園參訪，首先前往太魯閣國家公園遊客中心，觀賞英語介紹影片，初步了解太魯閣國家公園概況。接下來前往著名之燕子口步道，映入眼簾的是令人歎為觀止的立霧溪峽谷，並透過太魯閣國家公園志工及李光中副教授解說峽谷的由來及地形地貌。沿途探訪靳珩橋，講解中橫公路的人文歷史。結束燕子口步道探訪後，驅車前往海拔 900 公尺的西寶農場，進行午餐，用餐後來賓一同聽取西寶農場人員的簡報介紹農場的歷史以及目前有機農業發展的現況，接著參觀西寶農場內的菜園，並由農場人員帶領實地探訪農場內部，在繞行農場一圈後今日參訪的行程在此告一段落。

(二) **9**月23日正式國際研討會

- 地點:行政院農委會花蓮區農業改良場農業推廣大樓 4 樓會議廳
- 來賓致詞:本大會由農委會主委陳保基博士的致詞揭開序幕，陳主委的致詞內容中提到，農業為專制的產業，也是破壞生物多樣性的產業，農業的發展中只有適合人類的物種才能夠留下，種植的物種過度單一化，因此未來在從事研究與生產時必須要兼顧生態，在生產與生態間取得平衡。農委會於 104 年 10 月提出了「有機推動法」到立法院，未來將有利於有機農業的整體發展。
- **第一節:專題演講 主持人:胡興華(農村發展基金會)**

(1)亞洲水稻地景及其文化識別與觀光遊憩之角色-以菲律賓北呂宋島伊富高水稻梯田的 LEGATO 為例；發表者:Josef Settele 教授(德國亥姆霍茲環境研究中心 UFZ)
(2)里山倡議國際關係夥伴網路:緣起與發展;發表者:鈴木涉先生(國際里山倡議夥伴關係

網路秘書處國際聯絡人)

(3)生態農業及里山倡議在台灣之發展與展望；發表者:黃鵬場長(農委會花蓮區農業改良場)

專題演講首先由來自德國的 Josef Settele 教授開場，Josef 教授主持 LEGATO(Land-use intensity and Ecological EnGineering-Assessment Tools for risks and Opportunities in irrigated rice based production systems)計畫，主要研究土地利用密度以及評估灌溉水稻生態系統的機會與風險。研究的地區主要位於東南亞地區。此次的演說中提到了菲律賓北部、北越與南越的案例，教授說明了輔導案例的過程。其中特別值得一提的是位於菲律賓伊富高省的水稻梯田景觀，這個案例在西元 1994 年 被指定為世界遺產文化景觀，然而時代的推進，該處面臨的問題是人口外流與凋零，水稻梯田逐漸消失。在國際的協助下，人口回流，情況逐漸受到改善，找回了原本受到遺忘的傳統智慧，並且灌輸生態觀念，今日當地除了透過農產品維持生計外，另有生態旅遊、特色藝品增加收入，原先凋零衰退的農村正在一步步蛻變。

第二場邀請到的講者為里山倡議夥伴關係網路秘書處國際聯絡人鈴木涉先生，在此次介紹了里山倡議國際關係網絡的背景與緣起。鈴木涉先生詳述人類生活與環境之間的關係轉變，必須重新檢視人類與環境的關係。接著介紹日本里山與里海的源起與核心概念與世界各地的里山里海地景，並詳述了國際上里山倡議的提出歷程、三摺法、五大行動面向。里山倡議在西元 2010 年《生物多樣性公約》大會中正式啟動，並進一步提倡里山倡議國際關係網絡，以建構一個國際的分享平台。鈴木涉先生介紹目前組織的阿展現況以及實際案例，以利聽者能更加瞭解過去脈絡與未來發展。

第三場則由行政院農委會花蓮區農業改良場黃鵬場長擔綱，為來賓介紹台灣目前的發展情況。黃鵬局長先回顧花蓮農改場在 20 年前於富里種植第一塊有機稻田後開啟了東部友善農法的發展序幕。目前的東部有機栽培面積已達 6000 公頃，並且持續增加中，可謂台灣有機農法的發展重鎮。場長提到有機農業要再向上發展就必須更重視生態的概念，種植的農作物也必須更趨多元，此外田區周遭的環境亦須一併納入考量，要以地景的視角觀看以及重要的是需要有更多人文關懷。廠長詳述了生態農業的核心概念與推展的策略與過程，並舉出花蓮場實際執行的例子，提供聽眾詳細的資訊與觀點。

- **第二節 農業生物多樣性技術研發與應用推廣**

主持人:李玲玲教授(國立臺灣大學生態學與演化生物學研究所)

(1)增進及保護水稻生態系統的生物防治服務；發表者:Kong Luen Heong 博士(國際水稻

田研究所 IRRI 前資深科學家)

(2)了解及增進農業的生態系統服務以促進永續增產；發表者:Steve Wratten 教授(紐西蘭林肯大學生物保護研究中心)

(3)「綠色保育標章」源起、發展與現況；發表者:陳榮宗博士(慈心有機農業發展基金會)

(4)台灣東部水稻田無脊椎動物多樣性與指標物種研究；發表者:范美玲研究員兼副場長(花蓮區農業改良場)

(5)開花植物應用於農田蟲害管理研究；發表者:林立助理研究員(花蓮區農業改良場)

(6)富興 Lipahak 生態農場田間管理技術；發表者:賴萌宏先生(富興 Lipahak 生態農場)

第二節的主題為農業生物多樣性技術研發與應用推廣， 首先發表的是國際水稻田研究所 IRRI 前資深科學家 Kong Luen Heong 博士，分享了在印尼的案例。他談到，在印尼農藥的普遍性高過於其他地區，經常可見與生活用品一起陳列於商店中，農民取得農藥相當便利，也造就農業濫用的隱憂。為了使農民更加了解農藥的危害，及解決過度依賴農藥的問題，發揮巧思運用許多方法走入田野間，使農民能清楚認識田間的生物，以及農藥可能帶來的危害，讓農民自身省思與覺醒，進而改變行動。

接著是來自紐西蘭林肯大學的 Steve Wratten 教授，一開場即言明「世界糧食生產若是以生態農法持續十年，產量將會倍增，然而若是慣行農法則無法。」大規模長時間的單一作物耕作，為了使產量更為提高，而投入了大量肥料與施用農藥，將使土壤變得劣化，以致最終無法耕種。教授提出了，強化生態系統將可以有助農業的發展。並以簡單的四個英文字母「SNAP」敘說此概念，shelter:庇護所、nectar:蜜源、alternative prey:捕食性天敵、pollen:花粉。只要讓天敵找到庇護所，負責授粉的蟲類就有足夠的蜜源。農業與生態並非無法兩立，找回農田的生物就在一念之間。

第三位分享的來賓是財團法人慈心有機農業發展基金會的陳榮宗博士，談到規劃推動「綠色保育標章」驗證的歷程並分享目前的發展成果。綠保標章驗證提供不使用化學肥料與農藥的有機農民一個驗證使其有別於施行慣行農法的農民，亦為消費者在購買產品的一項重要指標。在 104 年已經增修綠保新規範，增修內容包括保育對象及棲地營造方式，都能申請標章。

本場次第四位則為本次研討會的東道主農委會花蓮區農改場的范美玲副場長以「台灣東部水稻田無脊椎動物多樣性與指標物種研究」為題上台分享。 此次研究的場域為花蓮縣富里鄉，主要探討慣行農法與有機農法兩種不同的農法施作下，稻田中的無脊椎動物活動的數量與群集結構，並期望能篩選出台灣東部農業生物

多樣性的指標物種。結果顯示橙瓢蟲、日本長腳蛛、爪哇長腳蛛等三種動物在兩種不同農法下有顯著差異，可做為農業生物多樣性指標物種。

接下來的主題是「開花植物應用於農田蟲害管理研究」，由花蓮區農改場的林立助理研究員與大家分享研究成果。她談到，過去的研究顯示種植開花植物於農田中，可以達到增加農業生物多樣性的目的，因此花蓮農改場在 98 年開始研究與篩選和綠籬植物可以吸引益蟲，並進行多項試驗，在田中種植可以提供天敵棲息環境與提供花粉、花蜜源的植物，篩選出馬利筋可以吸引瓢蟲，並抑制白蘿蔔及黃秋葵發生菜蚜的機率。研究成果可提供往後田間管理的參考。

最後是「Lipahak 富興生態農場」負責人賴萌宏先生經驗分享。首先提到農場的經營宗旨為「與環頸雉和諧共生」。時間回到 2012 年，為了友善對待環境，保護農田周遭的鳥類，賴先生與東華大學環境學院老師合作，向台糖租用田地，並透過林務局經費資助與花蓮農改場的技術協助，在花蓮縣光復鄉與瑞穗鄉交界處將六公頃的土地規劃了三個區域，包括:合作農戶私有田、實驗田、動物棲地。透過這樣實驗的方式希望能找到更友善對待環境，與其和諧共存共榮的方式。賴先生在分享中提到，過程中並不算順遂。

他以鳥害為例與聽者分享，此區的農田起初受到鳥類的危害相當嚴重，透過各種防護措施保或作物成效皆不彰,今年開始用不開溝的方式,使鳥類失去庇護 ，期望能發揮效用減少鳥類對作物的傷害。未來還需付出相當的努力，他將農場自詡為資訊交流平台，期望借助眾人的力量共同為生態農業付出心力。

- **第三節里山倡議與生態農業政策與實務工作者經驗分享**

主持人:李桃生局長(行政院農委會林務局)

(1)社會-生態-生產地景的回覆力指標；發表者:市川薰博士(聯合國大學高頂研究所研究員)

(2)推動台灣里山倡議的策略規劃架構；發表者:管立豪組長(林務局保育組)

(3)舞鶴茶園地景:一個社會-生態的生產地景；發表者:趙榮台研究員(林業試驗所森林保護組)

(4)以農業活動促成自然保育的合作案例-貢寮和禾水梯田；發表者:方韻如資深經理(人禾環境倫理發展基金會)

(5)融入里山倡議的農村環境教育:花蓮豐南村 Pakalongay 解說員培訓課程之發展歷程；發表者:李光中副教授(東華大學自然資源與環境學系)

在短暫的茶敘交流時間後，研討會進入最後一節，有許多實際案例與聽眾分享。一開始由來自日本目前在聯合國大學高等研究所擔任研究員的市川薰博士為

聽者介紹里山倡議實踐相當重視的回復力之評定指標。全部共有二十項，分為五大部分，分別為地景或海景的多樣性與生態維護、生物多樣性、知識傳承與創新、政府及地方公平權益、居民生計幸福指數。

在接下來的場次將鏡頭拉回台灣，第二位分享的為農委會林務局的管立豪組長，林務局也是促成此次研討會的重要推手之一，管組長與聽者報告了目前協助推動濕地水梯田復育成功的案例，其中已經有港口部落、八煙聚落、貢寮水梯田等符合里山倡議精神的實際例子。管組長也分享與國內民間團體推動友善農法的成果，例如:綠色保育標章、富興生態農場等等。除了分享成果外也談到台灣發展里山倡議面臨的挑戰，他提出將研擬一項符合「全球思考、國家適用、在地行動」的推動策略，並計畫建構台灣的里山倡議夥伴關係交流網路，透過整合資源與分享，打造屬於台灣的里山精神。

接下來是台灣的實際案例分享，由林業試驗驗所的趙榮台博士向聽者報告舞鶴茶園的成果。他提到舞鶴農場在停止使用化學農業種植茶葉後，雖然受到小綠葉蟬啃食而無法製成烏龍茶，但將啃食過後的茶葉轉而製成紅茶後，因為茶中帶有淡淡蜜香而受到市場肯定，農民亦因此而受惠。此案例成為農業與自然和諧共存的典範，友善環境的經營方式非但讓農民的收益增加，也讓農業生物多樣性提高,朝向永續發展邁進。此外此案例由自然生態保育協會向 IPSI 提出申請計畫案，獲得認可並得到經費補助。

第三位是由人禾環境倫理基金會資深經理方韻如分享貢寮水梯田的成功案例，「貢寮水梯田生態保育計畫」從 2011 年開始啟動至今目前已經有 12 處總面積約為 7 公頃的合作田。以在地傳統農法建構的「和禾田間作業原則」為基準，在發展農業的同時亦能友善對待環境。透過補償濕地的方式，營造了受到威脅的農田濕地物種棲息地、潮濕向陽植物生育地、回鄉生物的完整水域廊道。在經濟效益層面上也有顯著成效，透過多元經濟支持分擔了對保育的投資，也提高了市場的投資意願。在保護生物多樣性的前提下穩定經營，達到可觀的經濟效益並非難題。

研討會接近尾聲，最後一場發表由東華大學自然資源與環境學系李光中副教授擔綱，介紹花蓮豐南村 Pakalongay 解說員培訓課程之發展歷程。首先李老師從豐南村的地理環境與人口組成作為開場，接著談到規劃過程的挑戰，因而成立管理委員會以及訂定公約。談完背景知識介紹 2009~2011 年的重點部落計畫，發展農事體驗活動，結束之後為了保留廢棄四維的農事體驗區，開始著手進行阿美族少年解說員培訓課程，分為初階、中階、高階的培訓課程。社區廢棄的四維分校做為場域，利用在地的自然與文化資源做為學習教材，當地居民擔任主要講師，成功地將在地知識融入課程中。

(三) 9月24日研討會戶外參訪行程

經過 23 號全天共十四篇的發表後，接著在 24 號進行的是戶外參訪行程。參加戶外參訪行程的外籍學者有 Josef Settle、Kong Luen Heong、鈴木涉、市川薰，除了研討會參與發表的外籍學者以外，亦有許多部門長官以及此領域的諸位先進同行。此次參訪行程共拜訪了豐濱鄉新社部落、豐濱鄉復興無菸部落、富興生態農場。

(1) 新社部落

風和日麗，碧海藍天，一早天公作美參訪行程來到第一站依山傍海的新社部落。一下車走向部落立即受到村民載歌載舞的熱烈歡迎，村民穿著葛瑪蘭族的傳統服飾，用最熱情高亢的歌聲歡迎眾人的到來。首先一開始向眾人分享新社部落的故事點滴，故事的開端源自於對母親的思念以及為了完成岳母遺願，部落村民林玉妃因此走入田中，原本已經荒煙蔓草的田地，恢復了一線生機。在花蓮農改場林泰祐助理研究員的協助下，荒廢的田地變成水稻田，辛苦的田事都由五位自嘲為傻瓜的村民協力完成，這五位傻瓜是女兒(林玉妃)、女婿(龐榮華)、兒子(林鈺祥)、媳婦(宮莉筠)、好友(宋洋忠)。

參訪過程中，部落耆老帶領大家一起祭拜祖靈，以及提供大家享用自製的刺五加飲品還有將食材糯米糰用林投葉邊織包成的阿里鳳鳳，讓參訪的眾人體驗原始的部落風情，部落村民真實不造作的真性情令人動容。

(2) 復興無菸部落

眾人在新社部落旁改搭小巴士前往位於山腰上的復興無菸部落，初次到來的來賓也許會對於「無菸」這兩個字感到好奇，經過解釋後終於明白，原來復興部落是一個不抽菸、不喝酒、不嚼檳榔的部落。經過蜿蜒山路上行，抵達部落後稍做休息，每人選擇一根喜愛的樹枝當成登山杖，沿著羊腸小徑走向部落後方的山區。引領隊伍的是部落的核心人物王明源阿公與部落媳婦張慧芬小姐，高齡八十多歲的阿公，為大家解說步道上的花花草草，傳統的生態智慧令人欽佩。步行的終點是在一個遙望太平洋的山腰，涼風輕拂，心曠神怡，眾人在這樣的氛圍下仔細地聽著阿公與媳婦娓娓道來部落的故事。王明源阿公與張慧芬媳婦也是部落發展生態旅遊的重要推手，成立了「花蓮縣阿美族社區營造協會」，隊為爭取經費改善部落環境，也讓耆老們四處觀摩互相學習，讓每位耆老發揮所長。在吉籟獵人學校的引導下，部落開始發展生態旅遊，帶領外來遊客認識部落傳統的生活智慧，藉由這樣的方式展現山林資源的利用。

下山後回到部落，等待眾人的是豐盛美味的部落傳統風味美食，包括在途中阿公介紹的野菜藤心還有阿美族傳統麻糬、蒸糯米等等，美食佳餚令人大快朵頤，過程中相談甚歡，最後在耆老吹著口琴，以及村民的歌聲中向眾人告別互道珍重。

(3) 富興生態農場

行程從海濱穿過海岸山脈拉到了花東縱谷平原，佇立於平原中央有個富興生態農場，這也是此日參訪行程的最終站。在進行農場繞行解說前，農場負責人賴萌宏先生先是引領大家搗麻糬的活動，使用具有歷史的烏心石杵，輪番上前體驗搗麻糬的傳統況味。

接下來進行的是農場參觀與解說，分為兩組分別為負責人賴萌宏先生與東華大學自然資源與環境學系吳海音老師帶領眾人參觀。從農場的緣起開始到目前發展狀況與面臨問題與眾人分享，參觀解說在細雨中進行，雲雨飄飄的花東縱谷別有一番風味。農場分為兩公頃的私田、兩公頃的實驗田、兩公頃不耕種的濕地，強調友善對待環境，不與農田生物爭地，與自然和諧共生。然而面臨的挑戰是害蟲的威脅，為了保護作物必須要與鳥類鬥法鬥智，各式各樣的考驗都有。在參觀一圈後，負責人賴先生招待每一位來賓享用在地生產的鳳梨汁與蓮子湯。收穫滿滿的一日行程在此告一段落，圓滿完成。

(四) 9月25日富里鄉豐南村參訪行程

陰雨綿綿的早晨，水氣氤氳在海岸山脈的山巒間迴盪。氣溫適宜，神清氣爽，這天的行程由東華大學自然資源與環竟學系李光中副教授所帶領，參與行程的來賓較 24 日減少，共有 4 位外籍來賓參與行程分別為:市川薰博士、鈴木涉先生、Kong Luen Heong 夫婦等。小巴士在駛過富里市區後開始從台九線轉進通往東富公路，不久即進入豐南村的範圍，映入眼簾的除了層層疊疊的山巒還有山下一片片綠草如茵的稻田。抵達後首先在活動中心聽取村民簡報，訴說這個社區的種種故事，以及吉哈拉艾文化景觀設立的歷程。

在結束簡報後，眾人前往小天祥峽谷，由峽谷往下方瞭望是居民克服先天環境限制所形成的特殊水圳景觀，在往上行即是吉哈拉艾文化景觀著名的梯田區，梯田傳承了老祖先的智慧，也是人類與環境共生的象徵，國際的稻田專家也給了豐南村寶貴的建議。

參觀完梯田後，眾人來到了原本廢棄的四維分校，這裡現在經過活化後成為每週六 Pakalongay 課程的場域，今日短暫的參訪行程在體驗客家風味午餐後畫下句點，來台參加研討會的外籍來賓也即將離台，眾人在不捨中合影握手道別。

第二節、 台灣里山倡議實務工作者案例論述工作坊

一、 第一階段

(一) 工作坊目標

促進實務工作者的案例實踐、論述和交流，是里山倡議推動的核心工作。本工作坊藉由探討台灣里山倡議的推動策略架構，並參考里山倡議國際夥伴關係網絡(IPSI)的運作架構及其案例報告論述要點和撰寫格式，促進台灣里山倡議實務工作者理解、發展和論述實例報告，以增進實務工作者與國內外里山倡議社群溝通和展現實務案例的能力。

(二) 工作坊內容

1. 時間：2015 年 5 月 28 日（週四）~5 月 29 日（週五）
2. 地點：國立東華大學環境學院、七星潭海岸(類里海案例地景資源參訪)、伍佰戶農場(友善環境農法參訪)
3. 出席人員：林務局保育組夏榮生簡任技正、黃群策科長、鄭伃萍助理；花蓮區農業改良場(新社生態農業案例)林立助理研究員；財團法人觀樹教育基金會(成龍溼地案例)王昭湄主任；財團法人台灣生態工法發展基金會(八煙及清水濕地案例)廖仁慧執行長；狸和禾小穀倉(貢寮水梯田案例)謝傳鎧先生；花蓮縣豐濱鄉原住民觀光產業發展協會(港口部落案例)舒米・如妮總幹事、呂憶君女士；花蓮縣富里鄉豐南村吉哈拉艾文化景觀管理委員會(Pakalongay 課程案例)宋雅各先生、范綉英女士、藍姆路卡造先生、王晉英先生、王俊傑先生；花蓮縣瑞穗鄉富興 Lipahak 生態農場(富興生態農場案例)賴萌宏先生；花蓮縣阿美族社區營造協會(復興無菸部落案例)張慧芬總幹事；台灣環境資訊協會廖靜蕙女士；國立東華大學李光中副教授、王鈴琪助理、鍾孟瑾博士生、顏侶伃碩士生；總計 21 位。

4. 議程：

時　間	議程內容	主持人或講者
第一天		
09:40-10:00	報到、領取會議資料	
10:00-10:10	開幕引言	夏榮生簡任技正(林務局保育組)
10:10-11:10	推動台灣里山倡議的策略架構	夏榮生簡任技正(林務局保育組)
11:10-12:00	里山倡議國際夥伴關係網絡(IPSI)的運作架構及其案例報告的論述要點和撰寫格式	李光中副教授(東華大學自然資源與環境學系)
12:00-13:00	午餐(東華大學東湖畔[1])	
13:00-14:50	案例報告撰寫工作坊(1) 與里山倡議三摺法的對應關係	李光中副教授(東華大學自然資源與環境學系)+ 全員
14:50-15:10	茶　敘	
15:10-17:00	案例報告第一階段成果發表(1) 與里山倡議三摺法的對應關係	夏榮生簡任技正(林務局保育組) + 全員
17:00-18:30	七星潭海岸[8]地景資源解說	
18:30-20:00	晚餐及自由活動	
20:00~	回東華大學及就寢(夜宿東華會館[9])	
第二天		
07:00-07:30	早餐(東華會館)及前往伍佰戶農場	
07:30-08:30	伍佰戶農場[10]戶外參訪	
08:30-09:00	回東華大學休息及茶敘	
09:00-11:30	案例報告撰寫工作坊(2) 案例的故事發展與結果	李光中副教授(東華大學自然資源與環境學系)+ 全員
11:30-12:30	東華大學校園地景資源解說(含圖書館塔樓鳥瞰)	
12:30~13:30	午餐(東華大學綠色實驗餐廳[11])	
13:30~15:30	案例報告第一階段成果發表(2) 案例的故事發展與結果	夏榮生簡任技正(林務局保育組) + 全員
15:30~	結業、平安快樂回程	

(三) 工作坊討論要點

- 台灣生態保育主管機關對於里山倡議政策的重視：近年來許多專家學者均提倡里山倡議，但負責台灣生態保育的主管機關林務局之論述在政策架構上的意義不同於一般，此里山倡議的策略架構要能運作，端賴台灣里山倡議各個實務工作者的實地執行經驗成果與網絡交流。
- 新夥伴的參與：致力於生態農業研究與推廣的花蓮區農業改良場以及擅長於民族植物的利用與解說的阿美族復興無菸部落，首度參與里山倡議夥伴關係網絡平台，

[8] 七星潭海岸 http://tour-hualien.hl.gov.tw/Portal/Content.aspx?lang=0&p=005030001&area=2&id=38
[9] 東華會館 (03)8630103；http://www.lio168.com/
[10] 伍佰戶農場 (03)866-3497；http://faculty.ndhu.edu.tw/~LCenews/e_paper/e_paper_c.php?SID=249
[11] 東華大學綠色實驗餐廳 (03)863-3308；http://ndhuecokitchen.blogspot.tw/

並展現出願意瞭解並持續參與的態度，是本次工作坊在社會資源方面的一大進展。

- 實務工作的限制與討論回應：

(1) 農場範圍不包含社區聚落的侷限：計畫主持人李光中回應里山倡議在定義上並無限定面積大小，不一定要以地景的大尺度觀點來判定是否是里山倡議案例，只要與友善環境有關、關心農戶生計、追求農村互助精神與生活品質等，均是里山倡議討論的範疇。

(2) 以在地青少年解說培訓課程案例投入里山倡議的侷限：計畫主持人李光中回應可以是里山倡議五大面向中的其中一兩項主題，豐南村 Pakalongay 課程可能可以歸類於「認可在地傳統和文化的價值與重要性」、「貢獻社會-經濟成長」等兩面向。

(3) 社區內部里山倡議推動者人力不足的困境：復興無菸部落因人口外流問題嚴重，部落僅餘三十餘戶，幾乎為老年人與孩童兩名，故張慧芬總幹事強調推動人力不足、創造就業機會、促使青年回鄉成為首要之急；港口部落則提問如何能讓部落在地居民理解里山倡議（知識）？如何能讓部落在地居民感受（情意）並實踐（行動）水梯田生態復育？具體事例如：不灑藥的動力從何而來？巡護水圳的人力從何而來？成龍溼地回應分享其廣結善緣，與在地小學合作，從兒童環境教育開始著手，並透過國際藝術節系列活動的宣傳方式，引發在地人關心並理解友善環境的重要性，期待未來有更多漁民加入不抽地下水的行列。

(4) 資源分配的困境：港口部落反應所獲得的資源需要更直接且集中，以便能更有效率的執行更多友善環境工作。主管機關林務局夏榮生簡任技正回應做就對了，資源分配的方式需要後續檢討。

(5) 農業政策與保育政策各有侷限：富興生態農場提出主管農業農糧與生態保育的機關不同，其施行政策理念難免不同，而使里山倡議實務工作有窒礙難行之處；所幸兩政策主管機關同屬行政院農業委員會，因此期許能有更高層面的整合；且不宜朝令夕改、需長久施行。主管機關林務局夏榮生簡任技正回應現階段各單位整合困難，需要里山倡議實務工作者持續地在夥伴關係網絡平台中提出討論，長久勢必會引發關注，進而促進跨單位合作的機會。計畫主持人李光中亦認同透過此里山倡議夥伴關係網絡的持續討論，期待柔性突破政策決策上的限制。

- 對於里山倡議案例交流平台的期待：台灣生態工法發展基金會期待透過平台能獲知其他夥伴的特色與操作方式(如：產銷通路)，檢視問題並擬定策略以彌補不足之處；期許建構一個友善環境產業的行銷平台，讓社會大眾有機會能了解友善環境產品的生產與行銷(如：透過工作假期等方式)。

二、 第二階段

(一) 工作坊目標

在第一階段台灣里山倡議實務工作者案例論述工作坊的知識與關係交流基礎之下，本階段工作坊藉由公開發表的場合，促進台灣各地符合里山倡議精神、從事「社會-生態-生產地景」保全活用的相關公私部門機關團體之實地案例分享及政策研究報告，以增進實務工作者、政策策略推動者與國內外里山倡議社群溝通和展現案例的能力。

(二) 工作坊內容

1. 時間：104 年 11 月 8 日（星期日）
2. 地點：國立東華大學環境學院大樓 A136 教室
3. 出席人員：台灣大學榮譽教授王鑫；林務局保育組管立豪組長、黃群策科長；林務局花蓮林區管理處吳坤銘處長、紀有亭課長;花蓮區農業改良場范美玲副場長；富興 Lipahak 生態農場賴萌宏執行長;花蓮縣阿美族社區營造協會張慧芬總幹事；台南市水雉生態教育園區環境教育李文珍專員；花蓮縣富里鄉豐南社區發展協會王晉英理事長；人禾環境倫理發展基金會(貢寮水梯田案例)薛博聞先生；台灣環境資訊協會廖靜蕙女士；國立東華大學李光中副教授、王鈴琪助理、顏侶伃碩士生、林彥均碩士生、宋侑軒碩士生、邱雅莘學士生；以及參與 2015 年中華民國環境教育學術暨實務交流國際研討會台灣里山倡議政策與實務工作者案例交流實務論壇的環境教育實務工作者及學術研究者；總計 68 位。

4. 議程：

時　間	議程內容	主持人及演講人
08:30-09:00	報到、領取會議資料	
09:00-09:10	開幕致詞	王鑫教授、管立豪組長
第一時段 09:10-10:30	**台灣里山倡議Ⅰ：推動政策與策略**	**主持人：王鑫教授** (文化大學特約講座、台灣大學榮譽教授)
09:10-09:30	借鏡里山倡議國際經驗	李光中副教授 (東華大學自然資源與環境學系)
09:30-09:50	推動台灣里山倡議的策略規劃架構	管立豪組長 (林務局保育組)
09:50-10:10	里山倡議於花蓮林區管理處之規劃策略	紀有亭課長 (林務局花蓮林區管理處育樂課)
10:10-10:30	水稻田生物多樣性指標物種研究與實務應用	范美玲研究員兼副場長 (花蓮區農業改良場)
10:30-10:40	茶敘、休息	
第二時段 10:40-11:55	**台灣里山倡議Ⅱ：實地案例分享**	**主持人：吳坤銘處長** (林務局花蓮林區管理處)
10:40-10:55	「米農該」從生產型棲地談：重建社會生態的生產地景與對應里山三摺法所面臨的問題探討	賴萌宏先生 (富興 Lipahak 生態農場負責人)
10:55-11:10	花蓮豐濱鄉阿美族 Dipid 部落民族植物的活化利用	張慧芬女士 (花蓮縣阿美族社區營造協會總幹事)
11:10-11:25	台南市水雉生態教育園區的理念與實務	李文珍女士 (台南市水雉生態教育園區環境教育專員)
11:25-11:40	融入里山倡議的農村環境教育： 花蓮豐南村 Pakalongay 解說員培訓課程	王鈴琪女士(東華大學自然資源與環境學系專任研究助理) 王晉英先生(花蓮縣富里鄉豐南村社區發展協會理事長)
11:40-11:55	吉哈拉艾文化景觀的社會-生態-生產地景回復力指標初探	李光中副教授(東華大學自然資源與環境學系) 陳孟莉代理科長(花蓮縣文化局文化資產科)
11:55-12:10	茶敘、休息	
第三時段 12:10-13:00	**台灣里山倡議發展策略建議**、午餐便當	**主持人：王鑫教授、管立豪組長**

(三) 工作坊討論要點

本階段工作坊事先經過與指導單位林務局溝通討論之後，為讓台灣里山倡議案例有公開發表的機會，並同時增進對於國際、國家及地方里山倡議推動政策與策略的認識，而選擇於環境教育年度盛事的 2015 年環境教育研討會中實務論壇場次中辦理第二階段工作坊。為讓各案例報告者能擁有充分時間分享並配合大會議

程，而使第三時段台灣里山倡議發展策略建議與討論時間緊縮，僅將第三時段的討論要點陳述如後。

- 淺山保育與里山倡議的異同：林務局保育組管立豪組長回應目前兩者主管機關都是林務局，淺山保育因經濟活動影響很大(如：石虎)，淺山保育與里山倡議可結合討論，農委會主委已經提出朝向生態農業發展的意願，若再加以農糧署的重視，期待未來會有更多資源挹注。計畫主持人李光中回應因為在台灣高山地區無法自給自足的高山農業問題嚴重而複雜，不適合以里山倡議倡導人與大自然和諧共生的自給自足觀點來討論；故在台灣特別能談淺山丘陵，但並未限定海拔幾百公尺是淺山。
- 水資源不足議題：因著休耕政策及光復大農大富平地森林園區開發而使抽水情形嚴重，進而產生水體不足的現象(如：馬太鞍溼地變乾地、大興村需另闢水源)。花蓮林區管理處紀有亭課長回應需委託專家長期監測水資源才能正確推知實際原因。計畫主持人李光中回應馬太鞍濕地與富興生態農場相似，均位於兩個水系之間，為因應未來全球氣候變遷的趨勢，農業活動應如何調整以適應氣候變遷是一個亟待討論的新思考方向。

第三節、台灣里山倡議推動策略之 IPSI 合作計畫英文提報文件

IPSI Collaborative Activity Proposal Form

The following form is for use when submitting proposed IPSI Collaborative Activities for consideration by the IPSI Steering Committee. See the Collaborative Activity Guidelines on p. 3 for more information.

Please return the completed form to the IPSI Secretariat (isi@unu.edu).

> *IPSI Collaborative Activities are the activities that shall be undertaken by more than one IPSI member and constitute an important part of IPSI activities with the purpose of fostering collaboration within the IPSI membership and implementing the IPSI Strategy and Plan of Action. The IPSI Collaborative Activities shall be developed and implemented with the endorsement of the Steering Committee in accordance with the Collaborative Activity Guidelines. Resource mobilization for IPSI collaborative activities shall be the responsibility of the implementing members in principle.* – IPSI Operational Guidelines, Chapter 5.4

Date of Application:	**2015.12.04**

Project title:	
Facilitating the Development of a Taiwan Partnership for the Satoyama Initiative (TPSI)	
Collaborating organizations *(IPSI members)*: *（*Please underline the leading organization)*	
*National Dong-Hwa University, The Society for Wildlife and Nature (SWAN) International, Taiwan Ecological Engineering Development Foundation, Environmental Ethics Foundation of Taiwan (EEFT)	
Other contributing organization(s) *(including IPSI non-members)*:	
*Forestry Bureau, Council of Agriculture, Taiwan; Hualien District Agricultural Research and Extension Station, Council of Agriculture, Taiwan	
Contact:	
Name: Kuang-Chung Lee	Job title: Associate Professor
Organization: Department of Natural Resources and Environmental Studies, National Dong-Hwa University	
E-mail address: kclee2000@gmail.com	
Telephone: +886 (0)910030631	Fax: +886 (0)3 8510218
Address: No. 1, Sec. 2, Da Hsueh Rd. Shoufeng, Hualien 97401, Taiwan	
Expected term *(e.g. 1 January 2014 – 31 December 2015)*:	
1 October 2014 – 31 December 2017	
IPSI strategic objective(s) addressed *(tick all that apply; see p. 3 for more details)*:	

○Increase knowledge and understanding of SEPLS
○Address direct and underlying causes responsible for the decline or loss of SEPLS
○Enhance benefits from SEPLS
Enhance human, institutional and sustainable financial capacities

Continued on next page.

Description of the activity:
Please provide as much information as possible on:

- Background
- Activities (including site locations if applicable)
- Expected outcomes
- Actors and task sharing
- How the activity relates to the *IPSI Strategy* and *IPSI Plan of Action*
- Resources, funding
- Monitoring and reporting

1. Background and goals

Ever since Satoyama Initiative was introduced to Taiwan in the late 2010, it has received tremendous popularity from the government and the general public. Practices engaging in conservation and revitalization of socio-ecological-production landscapes that are in compliance with the goal of Satoyama Initiative are on the rise. In recent years, National Dong-Hwa University and Forestry Bureau, Council of Agriculture have been working together on promoting the Satoyama Initiative in Taiwan. In spite of the fact that it has brought about specific influences and effects, there are more challenges ahead. It calls for a more integrated approach to setting up a national strategic framework for promoting Satoyama Initiative in Taiwan. Learning from the experiences of the International Partnership for Satoyama Initiative (IPSI), this collaborative project first aims to analyze the opportunities and problems in promoting Satoyama Initiative in Taiwan, followed by proposing a national strategic framework for the Forestry Bureau in pushing forward Satoyama Initiative in Taiwan in the near future.

2. Activities

In this collaborative project, 'think global,' 'adapt national' and 'act local' are considered interrelated hierarchical concepts which help to sort out the targets and tasks for promoting Satoyama Initiative in Taiwan. There are two targets and five task activities for the four-year collaborative project.

The first target, corresponding to 'think global' and 'adapt national,' is about addressing issues of socio-ecological production landscapes and formulating solutions. Three task activities related to the first target include enhancing international participation and exchange, working on policy research and strategic framework for implementation as well as facilitating knowledge of indicators for monitoring.

The second target, corresponding to 'act local, is about conservation and revitalization of socio-ecological production landscapes. Two task activities related to the second target include enhancing capacity building for on-the-ground practitioners and relevant governmental institutions, enhancing and networking on-the-ground activities

3. Expected outcomes

1) Enhancing international participation and exchange:

- Contributions to IPSI conferences and workshops;
- Conduction of international conferences and workshops concerning Satoyama Initiative in Taiwan

2) Working on policy research and strategic framework for implementation:
   - Reviews of problems and opportunities of promoting Satoyama Initiative in Taiwan;
   - A mid-term national strategic framework for promoting Satoyama Initiative in Taiwan
3) Facilitating knowledge of indicators for monitoring:
   - Experience of participatory identification and evaluation of indicators of resilience of the SEPLs in Taiwan
4) Enhancing capacity building for on-the-ground practitioners and relevant governmental institutions
   - Field trips for exchange of knowledge and know-how among on-the-ground practitioners
   - Workshops of case study reports for on-the-ground practitioners in light of the Satoyama Initiative
5) Networking on-the-ground activities
   - A pilot work for setting up a Taiwan Partnership for the Satoyama Initiative (TPSI)

4. Actors and task sharing

- Academics: National Dong-Hwa University is the project leader and coordinator
- Governmental Institutions: Forestry Bureau, Council of Agriculture is the key project supporter as well as the key policy-making authority responsible for promoting Satoyama Initiative in Taiwan
- IPSI members: Three IPSI members in Taiwan including the Society for Wildlife and Nature (SWAN) International, the Taiwan Ecological Engineering Development Foundation and the Environmental Ethics Foundation of Taiwan (EEFT) will be invited to participate in the conferences and workshops and share their experiences of on-the-ground activities
- IPSI non-members: Hualien District Agricultural Research and Extension Station and other local practitioners will be invited to participate in the conferences and workshops and share their experiences of ecoagriculture knowledge

5. How the activity relates to the IPSI Strategy and IPSI Plan of Action

The collaborative project focuses on setting up a national framework for promoting Satoyama Initiative in Taiwan as well as enhancing and networking partnership among governmental institutions, on-the-ground practitioners and experts. Therefore, the collaborative project closely related to the IPSI Strategy Objective 'four' as well as its priority actions 'a,' 'c' and 'e' for the IPSI Plan of Action.

6. Resources, funding

The financial resources for conducting this collaborative project are mainly from Forestry Bureau, Council of Agriculture, Taiwan; The budget for this four-year collaborative project is about US$ 170,000

7. Monitoring and reporting

Annual Project Progress Reports will be submitted to the Forestry Bureau and will be available online (in Chinese). We will be happy to share important findings and progress to IPSI Secretariat and conferences.

Please attach additional pages as necessary.

IPSI Secretariat use only

第四節、台灣里山倡議推動策略之英文說帖 (草案)

A National Strategic Framework for Promoting Satoyama Initiative in Taiwan

ABSTRACT

Ever since Satoyama Initiative was introduced to Taiwan in the late 2010, it has received tremendous popularity from the government and the general public. Practices engaging in conservation and revitalization of socio-ecological-production landscapes that are in compliance with the goal of Satoyama Initiative are on the rise. In recent years, Forestry Bureau has been involved in promoting restoration of rice terraces and wetlands; in other words, it has actively responded to the international Satoyama Initiative and Biodiversity Aichi Targets. In spite of the fact that it has brought about specific influences and effects, there are more challenges ahead. Learning from how operation framework works between international Satoyama Initiative and its partnership, this paper first intends to analyze the opportunities and problems in promoting Satoyama Initiative, followed by suggestions in achieving a complete strategic framework (including strategic objectives, a strategic framework, an operation framework and action directions) to move forward Satoyama Initiative in Taiwan. It aims to provide related strategies and action plans for discussion for Forestry Bureau in pushing forward Satoyama Initiative in Taiwan. In conclusion, there is an urgent need to come up with a strategic and integrated framework combining "think global, adapt national and act local" for promoting Satoyama Initiative in Taiwan. It is also important to establish a Taiwan Partnership for the Satoyama Initiative (TPSI) through which stakeholders can work collaboratively to, first, facilitate revitalization of socio-ecological production landscapes and seascapes, and second, move closer to the goal of living in harmony with nature.

Keywords: Satoyama Initiative, strategic framework, Biodiversity Aichi Targets

Ever since Satoyama Initiative was introduced to Taiwan in the late 2010, it has received tremendous popularity from the government and the general public. Practices engaging in conservation and revitalization of socio-ecological-production landscapes that are in compliance with the goal of Satoyama Initiative are on the rise. In recent years, Forestry Bureau has been involved in promoting restoration of rice terraces and wetlands; in other words, it has actively responded to the international Satoyama Initiative and Biodiversity Aichi Targets. In spite of the fact that it has brought about specific influences and effects, there are more challenges ahead. Learning from how operation framework works between international Satoyama Initiative and its partnership, this paper first intends to analyze the opportunities and problems in promoting Satoyama Initiative, followed by suggestions in achieving a complete strategic framework (including strategic objectives, a strategic framework, an operation framework and action directions) to move forward

Satoyama Initiative in Taiwan. It aims to provide related strategies and action plans for discussion for Forestry Bureau in pushing forward Satoyama Initiative in Taiwan. In conclusion, there is an urgent need to come up with a strategic and integrated framework combining "think global, adapt national and act local" for promoting Satoyama Initiative in Taiwan. It is also important to establish a Taiwan Partnership for the Satoyama Initiative (TPSI) through which stakeholders can work collaboratively to, first, facilitate revitalization of socio-ecological production landscapes and seascapes, and second, move closer to the goal of living in harmony with nature.

1. Opportunities and challenges faced in promoting Satoyama Initiative in Taiwan

1) A brief overview of Satoyama Initiative's development in Taiwan

Satoyama Initiative has gained a large amount of support from both the government and public since its concept and practices were introduced to Taiwan in the year of 2010. Forestry Bureau especially has supported a number of policy research and on-the-ground activities, which have helped to lay the foundations of Satoyama Initiative in Taiwan. There are currently more and more practices of conserving socio-ecological production landscapes all across Taiwan that go along with Satoyama Initiative's spirits and are supported by different stakeholders as follows.

- Forestry Bureau of Council of Agriculture: Having adopted Satoyama Initiative as its theme, in cooperation with the National Taipei University, the National Pingtung University, and related civil organizations, Forestry Bureau of Council of Agriculture assisted the following mentioned regions in moving forward the ecological restoration of rice terraces and wetlands, community forestry, and relevant projects. Taiwan Ecological Engineering Development Foundation located within Ba-Yien Village of Jinshan not only aided fallow rice terraces to return to an eco-friendly state but also enhanced local industries to revive. It even went on to propose Jinshan Initiative. Environmental Ethnics Foundation of Taiwan situated within Jilin of Gongliao of New Taipei City helped promote environmentally friendly rehabilitation of rice terraces, monitored ecological restoration effects, and developed experimental industries. Taiwan Tourism Development Association located in Makutaay of Fengbin Township of Hualien worked on artistic landscape creation, eco-friendly recovery of wetlands, and indigenous industry development. Through ecological compensation and environmental art festivals, 觀樹 Education Foundation situated within Cheng-Long Wetlands of Kouhu Township of Yunlin County helped to revive Satoumi Wetland, to sustain fishery and environment education. The Pingtung University gave assistance to Adiri tribe of Wutai Township of Pingtung in developing eco-tourism with Satoyama Initiative as its theme.
- Bureau of Cultural Heritage of Ministry of Culture and bureau of culture of provincial governments: After the major amendment of Cultural Heritage Conservation Act in 2005, it has extended to include agricultural landscapes as cultural landscapes, which can be

referred to as an act relevant to Satoyama Initiative and wetland conservation. According to statistics collected in August 2014, up to forty-six cultural landscapes have been registered and announced in compliance with Cultural Heritage Conservation Act, with five of which closely related to socio-ecological production landscapes promoted by Satoyama Initiative. They are, namely Twin Heart Stone Weir in Chimei of Penghu, stone weir group in Jibei of Penghu, Cihalaay in Fengnan Village of Fuli Township of Hualien, traditional region in Langdao Tribe of Lanyu Township, and Wann-an 老田區 of Chishang. The core resources of these five Satoyama and Satoumi-like cultural landscapes can be said to have relation with artificial wetland ecological resources. To put differently, the landscapes and seascapes resulted from long-term interaction between residents of specific cultural groups and natural environment line up on the side of Satoyama Initiative in having man and land in harmony and coexistence as the ultimate goal.

- Ministry of the Interior of national park authorities: Likewise, Ministry of the Interior of national park authorities promoted a conventional way of Milkfish breeding in shallow waters in the foraging areas of Black-faced Spoonbills at Taijiang National Park and successfully enhanced the running of ecological fish farms that are friendly to Black-faced Spoonbills. Taroko National Park worked with Chixin Organic Agriculture Development Foundation to encourage organic farming in Westwood Farm which gradually facilitated transformation of highland farming along the Cross-Island Highway. Yangminshan National Park started strategic studies on conservation and sustainable operation in relation to cultural landscapes, that is, water canals and rice terraces in the surrounding eighteen tribes. Yushan National Park and Shoushan National Nature Park helped with promotion of organic rice paddies and founding of Satoyama School respectively.
- Academic research, agricultural experiments and promoters: In Pinglin, Graduate Institute of Building and Planning of National Taiwan University made an effort to push forward a series of various types of Taiwan Blue Magpei Tea which is a product of environmentally friendly farming. Besides promoting organic rice farming and authentication, Hualien District Agricultural Research and Extension Station of Council of Agriculture also carried out a pioneering study of using invertebrates as agricultural biodiversity indicators in rice paddies in Fuli Township of Hualien. What's more, it assisted Hualien aboriginal tribes with the promotion of environmentally friendly farming and helped 行健 Organic Village in Sanxing Township of Yilan in developing Aquaponics, an organic fish breeding mode.
- As for civil organizations, Chixin Organic Agriculture Development Foundation is involved in promotion of Green Mark and Green Agricultural Products; 觀樹 Education Foundation set up 裡山塾 in shallow hills in Miaoli YuanLi to promote food and

agricultural education and Satoyama experience activities. In addition, LiPaHak Ecological Farm in Ruisui Township of Hualien collaborated with local farmers, working holiday volunteers, National Donghwa University, Hualien Forest District Office of Forestry Bureau, Hualien District Agricultural Research and Extension Station of Council of Agriculture, Taiwan Sugar Corporation, and related civil organizations and successfully brought an ecological farming experimental region into reality with the purpose of "existing in harmony with ring-necked pheasants".

- Others: There are many more practices in which eco-friendly farming was introduced to agriculture so as to achieve industrial, ecological and social goals. All of them are in line with the spirit and practice of Satoyama Initiative; they are waiting for further investigation and compilation, though.

2) Challenges of promoting Satoyama Initiative in Taiwan

Challenges faced in promoting Satoyama Initiative in Taiwan can be reviewed from four angles:

- A need for a comprehensive policy and strategic planning

Despite of the fact that Satoyama Initiative has been very welcomed by the Taiwanese government and the public, and there have been more and more relevant reported practices in accordance with Satoyama Initiative's spirits, a large part of agricultural production environment has been contaminated by conventional farming; that is to say chemical fertilizers, pesticides and herbicides. According to statistics, organic farming has been applied to merely 1% of arable land, let alone eco-friendly farmed lands. The answer to how to facilitate eco-friendly farming in rural areas in Taiwan in order to boost the effects of agricultural production environment still awaits to be solved by integration of various systems.

Currently speaking, Satoyama Initiative are being promoted and supported by Forestry Bureau, national park authorities, Bureau of Cultural Heritage and Department of Cultural Affairs of some counties and cities, departments of agricultural experimental research and promotion, civil conservation organizations and community associations. In recent years, only Forestry Bureau has called for national and international Satoyama Initiative meetings to offer interactions and temporary promotions; most of the other above mentioned departments function independently and lack a common communication platform to exchange ideas and knowledge. Nothing like a government department has yet taken up the role of a national promoter to propose an integrated policy and strategies in pushing forward Satoyama Initiative in Taiwan. Even though Forestry Bureau's work on rice paddy and wetland restoration programs has brought attention, it is true that there is a strong need to have comprehensive and integration-oriented policies and strategies.

- A need for knowledge analyses and exchanges of academic studies and practical experience

Even though it is true to say that the notion of Satoyama Initiative has gained a certain degree of governmental and civil popularity in Taiwan; most of the people simply understand it literally as terms like sustainable development and ecological tourism, and thus have different interpretations, which has eventually led to disagreements in terms of consensus and actions. Satoyama Initiative has been brought to Taiwan for nearly four years, and there have been some research reports, theses, and popular science articles that discuss the core concept, values, goals, promotion framework, and good practices of international Satoyama Initiative; still, they failed to present a deeper analysis in relation to the origin, background, operation mechanism, initial development issues and content of good practices of international Satoyama Initiative. Consequently, they are considered shallow on the matter of so-called learning from international Satoyama Initiative's essence and practices. On top of the above, many of the local good practices are academically insufficient in the way that they lack comprehensive studies, classification, analyses, exchanges and discussions of knowledge and experiences among practical doers. All in all, a domestic description and practical framework for Satoyama Initiative have yet to be built.

- A need for a capacity building mechanism

Satoyama Initiative needs not only practical doers as pioneers, but the public's support. Therefore, it is a top priority to provide capacity building for practical doers. Presently, some government departments involving in production and civil organizations in promotion have actually helped the public to preliminarily grasp Satoyama Initiative's goals and practices. With the fact that existing practical doers do their jobs in their own way while interested parties have no way in, there is obviously a need to come up with relevant capacity building courses and workshops for practical doers.

- A need for good practices guided along Satoyama Initiative's complete framework

Currently there is a need for good practices in accordance with Satoyama Initiative's complete framework, albeit along with Satoyama Initiative's spirits. In addition, such practices also lack analytical reports on detailed planning processes, management frameworks and implementation outcomes. As a consequence, current local Satoyama Initiative practices are mostly outcome demonstrations and explanations which are not suitable for international or domestic practical doers to learn from and refer to.

2. Strategic framework for promoting Satoyama Initiative in Taiwan

1) Reasons in promoting domestic and foreign policy for Satoyama Initiative in Taiwan

- Third United Nations Summit on Sustainable Development（Rio+20）Policy Statement

On June 20 to 22, 2012, the Third United Nations Summit took place in Rio De Janeiro of Brazil and published the policy statement “the Future We Want” in which “We need a comprehensive and integrated approach to enhance the promotion of sustainable human development model in harmony with nature, and to guide mankind in the restoration work of the Earth's ecosystem’s health and integrity ... We agree to promote international cooperation and partnership ... It’s our vision to be in harmony with nature” is stated. This statement is consistent with the goals and methods of Satoyama Initiative, and it is through international cooperation that international partnership for the Satoyama Initiative achieves these goals.

- Biodiversity Aichi Targets (2011-2020) and Satoyama Initiative

The Convention on Biological Diversity Tenth Conference of the Parties (CBD COP10) was held between October 18 and 30, 2010 in Nagoya, Japan, and the new biodiversity target of 2011-2020, namely Aichi target was proposed. It is Aichi target’s vision to be in harmony with nature; to be specific, it is “to complete the assessment, conservation, restoration and wise use of biodiversity, to maintain ecosystem services, to sustain a healthy planet, and to provide all the fundamental benefits for human before the end of 2050”. With Aichi Target’s vision, five types of strategic goals and twenty Aichi Biodiversity Targets have been developed to work in compliance with national biodiversity strategies and action plans for different countries.

In the above-named Convention on Biological Diversity Tenth Conference of the Parties, the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) went hand in hand with the Ministry of the Environment, Government of Japan in announcing the promotion of the International Partnership for the Satoyama Initiative (IPSI) to work as one of the crucial tools of realizing the new biodiversity Aichi targets. Up to now, nearly 164 associations have been attracted to join in more than four years, and five conferences have taken place. It is its hope to help realize Aichi target, being in harmony with nature, through sharing and exchanging experiences and practices among various nations.

According to the document, Contributions of the Satoyama Initiative to mainstreaming sustainable use of biodiversity in SEPLs, jointly published by the United Nations University Institute for the Advanced Study of Sustainability (UNU-IAS) and Institute for Global Environmental Strategies (IGES), Satoyama Initiative is closely related to the following nine Aichi Biodiversity Targets. They are, namely sustainable use of natural resources (Goal 4); sustainable fisheries (Goal 6); sustainable management area (Goal 7); reserves (Goal 11); agricultural biodiversity (Goal 13); basic ecosystem services (Goal 14); biodiversity and carbon storage (Goal 15); traditional knowledge (Goal 18) and biodiversity knowledge (Goal 19).

- Theme of the year: “International Year of Family Farming” of the United Nations and

"Wetland and Agriculture: Partners for Growth" of The Ramsar Convention

To tie in with the International Year of Family Farming, The Ramsar Convention Secretariat has adopted Wetlands and Agriculture: Partners for Growth as the theme for 2014 World Wetlands Day. Those who have paid close attention to global environmental issues in recent years can easily notice a growing worldwide tendency to regard agriculture, water, and wetland conservation and use as a whole in resolving environmental problems, which happens to hold the same perspectives as Satoyama Initiative.

- Forestry Bureau's Biodiversity Promotion Plan

To line up on the side of Convention on Biological Diversity, Forestry Bureau of Council of Agriculture has worked on a biodiversity promotion plan applicable to our home country since 2001, and coordinated the implementation of biodiversity work among various ministries. After the completion of phrase one in 2007, it took a further step to work with 2010 Biodiversity Target's revised action plan to help realize six goals, with thirty-eight action plans. Forestry Bureau plays the role of policy-making authority in biodiversity conservation in Taiwan whereas international Satoyama Initiative works as a proactive response to the Aichi Biodiversity Target (2011-2020). Therefore, Forestry Bureau being Satoyama Initiative's policy maker and integrated plan facilitator is well justified. Taiwan is currently lack of new policies and specific plans to respond to Aichi Biodiversity Target, and Satoyama Initiative's wide involvement (having nine Aichi targets) requires participation of various stakeholders. With the fact that the existing international partnership for Satoyama Initiative being so organized and methodical, it is considered innovative for Forestry Bureau to function as a policy maker and facilitator for Satoyama Initiative in Taiwan, and an international partnership convening authority. With 2020 Aichi targets deadline coming up, it is suggested Taiwan grasp the opportunity to develop and promote new policies.

2) Strategic objectives for promoting Satoyama Initiative in Taiwan

With Aichi Biodiversity Target 2011-2020 as a guide, Satoyama Initiative for Taiwan aims to draw on the operation mechanism of international partnership for Satoyama Initiative to establish its own partnership. Through integrated planning and promotion, enhancement of knowledge exploration and exchange of academic theories and practical experience, capacity building for practical doers and encouragement of good practices directed by Satoyama Initiative's complete framework; Satoyama Initiative for Taiwan aims to set up its own local descriptions and practical experience models, to actively share with the international community, and to contribute to the realization of Aichi Biodiversity Targets.

3) Strategic framework for promoting Satoyama Initiative in Taiwan

Strategic framework can be discussed on two aspects, namely domestically and internationally. Domestically speaking, this paper recommends Forestry Bureau, which is the authority working alongside Convention on Biological Diversity, take up the role of convening authority to help set up Taiwan Partnership for the Satoyama Initiative (TPSI) through an integrated approach; to invite related government ministries, academic and experimental research institutes, the community, civil organizations and other related organizations, and green enterprises to participate in work of Satoyama Initiative for Taiwan; and to seek diverse financial mechanisms and resources to push forward or support joint cooperation or individual attempts.

Internationally, learning from the operation mechanism and related guidelines of international partnership for the Satoyama Initiative (IPSI), it is our objective to encourage related domestic institutions and organizations to join IPSI, and it is through IPSI annual conference, related meetings and website information exchanges that Taiwan learns from others and shares her fruitful results.

4) Operation framework and directions for promoting Satoyama Initiative in Taiwan

In this paper, “think global”, “adapt national” and “act local” are considered interrelated hierarchical concepts which help classify the operation framework of Satoyama Initiative for Taiwan into two mutually supportive targets and five directions, as described as follows:

Target 1: analyses of current situation and problems of socio-ecological production landscapes and suggestions, including three directions:

- International participation: Internationally, domestic institutions and organizations will be encouraged to join the international partnership for the Satoyama Initiative (IPSI). Via participation in IPSI annual conference and general meetings, there is a good chance for them to learn from others and share results as well. Domestically, international seminars and workshops will be organized, scholars and experts of relevant international organizations will be invited to Taiwan to share their professional experience, and to conduct field surveys so as to fully understand the progress of Satoyama Initiative in Taiwan.
- Policy research: It is suggested through learning from international partnership for the Satoyama Initiative operation mechanism (IPSI) that partnership for the Satoyama Initiative for Taiwan can be established. Also, through learning from relevant international eco-friendly agricultural policies and plans, opportunities and problems concerning relevant domestic agri-environmental policies and conservation policies can be analyzed and reviewed. The ultimate goal is to propose a comprehensive promotion policy for Satoyama Initiative in Taiwan, and establish a conservation and utilization strategy for socio-ecological production landscapes in rural communities in Taiwan.

- Knowledge facilitation: It is considered that Taiwan can take an active role in acquiring knowledge from research results and practical experience of both international and domestic Satoyama Initiative's major themes, especially those regarding socio-ecological production landscape restoration indicators. It plans to further make use of the knowledge in policy formation, capacity building, and field activities so that knowledge and exchanges among Satoyama Initiative partners can increase.

Target 2: conservation and utilization of socio-ecological production landscapes

The second target is about engaging in conservation and utilization of Taiwanese Satoyama landscapes (socio-ecological production landscapes) based on Satoyama Initiative good practices supported by Forestry Bureau, and widely inviting practical doers and relevant practices to participate. They can be done in two directions as follows:

- Capacity building: Through planning Taiwan Partnership for the Satoyama Initiative (TPSI), an information dissemination website and quarterly newsletters, relevant information can be sent to network partners and the public. Also, organizing of environmental education activities for the youth and parents regarding Satoyama Initiative can raise understanding and gain identification from the youth about the importance of Satoyama Initiative and socio-ecological production landscapes. What's more, via workshops and in-field surveys it is believed that mutual learning, studying and discussing among practical doers, researchers and policy makers will increase, and ability of preserving and utilizing socio-ecological production landscapes will also be enhanced.
- Good practices: By gaining knowledge from the complete three-folded Satoyama Initiative framework, "vision-method-action strategy", it is considered that information dissemination, environmental education activities, workshops, field survey exchanges, seminars and other channels can encourage practical work partners of Satoyama Initiative for Taiwan to develop good practices in line with international Satoyama Initiative's three-folded framework. They can also assist in reporting and discussing of the planning, management framework and action contribution of good practices; help judge and select good practices; provide reference for domestic practical work partners; and share results of good practices of Satoyama Initiative for Taiwan with the international community via international partnership for the Satoyama Initiative conference or other related information platforms.

3. Conclusions

The meaning of "initiative" is "a new, initial action or movement intended to solve a problem". Since the introduction of Satoyama Initiative to Taiwan at the end of 2010, both the government and civil organizations have taken a considerable degree of pioneering actions, which are well worth praise and recognition. However, in order to further learn from international Satoyama Initiative and review Taiwan's current and

future status, there is an urgent need to come up with a promotion strategy with an integrated framework combining “global thinking, national adaption and local action” for Satoyama Initiative in Taiwan. It is also important to establish a Taiwan partnership exchange network for Satoyama Initiative through which participants focus on collaborative planning and management mechanisms so as to, first, facilitate conservation and utilization of socio-ecological production landscapes and seascapes, and second, move closer to the goal of harmony and coexistence between man and the nature. Last but not least, it is also hoped that Taiwan can have descriptions and a practical experience model of its own regarding Satoyama Initiative for Taiwan, actively share with the international community, and contribute to realization of Biodiversity Aichi Target. The above are a number of recommendations the author has put forward, with a hope to attract wider attention and start more discussions, and provide reference for Forestry Bureau and relevant ministries on the matter of policies and promotion plans for Satoyama Initiative in Taiwan.

Table 3 Work directions and content for promoting Satoyama Initiative in Taiwan

Work directions	**Content (examples)**
International participation	Participate in IPSI Annual Conference and related meetings
	Organize international seminars and workshops
Policy Research	Analyze and learn from the operation mechanism of the international partnership for Satoyama Initiative
	Set up related systems and operation mechanism of partnership for Satoyama Initiative in Taiwan
	Learn from policies and strategies of international Satoyama Initiative and related eco-friendly agricultures
	Analyze and review opportunities and problems faced in implementing Satoyama Initiative in Taiwan
	Study and draw up a comprehensive promotion strategy for Satoyama Initiative in Taiwan
	Study and draw up a ‘socio-ecological production landscape’ conservation and utilization action plan for rural communities in Taiwan
Knowledge enhancement	Learn from sustainable farming techniques and action plans of international Satoyama Initiative practices
	Compile eco-friendly farming methods all across Taiwan, production technology and marketing models; establish category and operation mechanism for local practices
	Analyze international restoration indicator research results concerning socio-ecological production landscapes, develop a comprehensive and measurable indicator applicable for Satoyama Initiative in Taiwan (inclusive of social, ecological and economic aspect)
	Research into eco-friendly farming monitoring indicators (agricultural biodiversity indicators), set up and implement indicator authentication methods
	Subsidy policy studies and trials on rice terraces and wetland ecology recovery
Capacity building	Plan and manage an information dissemination website and quarterly newsletters for Taiwan Partnership for the Satoyama Initiative
	Hold environmental education activities for the youth and parents

	concerning Satoyama Initiative
	Organize in-field workshops for Satoyama Initiative practical doers (have Satoyama Initiative good practices backed up by Forestry Bureau as a foundation and expand invitation)
Good practices	Assist Satoyama Initiative practical doers in developing good practices in line with international Satoyama Initiative's three-folded framework (based on Satoyama Initiative good practices supported by Forestry Bureau and widely invite interested parties)
	Judge and select good practices in accordance with international Satoyama Initiative's three-folded framework
	Share fruitful results of good practices of Satoyama Initiative in Taiwan domestically and internationally

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附錄一 東華大學IPSI案例英文報告：吉哈拉艾文化景觀的協同規劃歷程

資料來源：IPSI 網頁
http://satoyama-initiative.org/en/collaborative-planning-and-management-of-socio-ecological-production-landscapes-a-rice-paddy-cultural-landscape-conservation-in-an-indigenous-community-taiwan/

1. **Title:** Collaborative Planning and Management of Socio-Ecological Production Landscapes: a Rice Paddy Cultural Landscape Conservation in an Indigenous Community, Taiwan
2. **Author**: Dr. Kuang-Chung Lee, a member of IUCN-WCPA since 2006, has six year work experience in the Nature Conservation Division of the Council of Agriculture (COA) as well as in the Tarorko National Park Headquarters from 1991 to 1997. He is now an associate professor in the Department of Nature Resources and Environmental Studies of the National Dong-Hwa University. From 2002 to the present, he has led and carried out eighteen research projects which mainly focused on community participation, collaborative planning and management of rural areas and different IUCN categories of protected areas in Taiwan.
3. **Name of organisation**: National Dong-Hwa University
4. **Summary**: In 2005, the idea of landscape/seascape conservation was introduced into the amended Cultural Heritage Conservation Act as a new legal subject entitled ‘Cultural Landscape' in Taiwan. Unlike traditional strict protected areas, namely the IUCN protected area category I-IV, the Cultural Landscape is a new concept to Taiwan that emphasizes the interaction of local people and the land. In order to help stakeholders of governmental authorities and local communities to apply this new instrument, the researcher employs a community-based participatory approach to enhancing partnership among them. The research has especially learnt from the operational guidelines of IUCN protected area category V (the protected landscapes) and the Satoyama Initiative as well as the goal of ICCA aimed at empowerment of local indigenous community. A pilot study area of a rice paddy production landscape in the indigenous Fengnan village, Hualien County was selected as a potential Cultural Landscape site. A participatory action research was conducted by the researcher in light of the collaborative planning theory and methods to enhance partnership among the villagers, the local authorities officers and experts. Various formal and informal forums were conducted in the local area from 2011 to 2014 to achieve consensus on the Codes of Conduct as well as the Management Plan for the Cultural Landscape. Through intense communication on the forums, stakeholders jointly designated the site as a legal Cultural Landscape, developed a mid-term Cultural Landscape Conservation Plan and set up a local management committee for implementation of the Plan. The case study shows that a landscape approach based on the idea of the Satoyama Initiative and ICCA can be more welcomed by local people and create a new style of ‘living' protected landscape into Taiwan's national protected area system.
5. **Themes**: forests and agricultural fields
6. **Keywords**: collaborative planning, cultural landscape, stakeholder participation, public forum, socio-ecological production landscape
7. **Map location**: N23°08'51"+E121°17'00"
8. **Google Map link**:

https://maps.google.com.tw/maps?q=%E8%8A%B1%E8%93%AE%E7%B8%A3%E5%AF%8C%E9%87%8C%E9%84%89%E7%9F%B3%E5%8E%9D%E6%BA%9D&hl=zh-TW&ie=UTF8&ll=23.150857,121.288891&spn=0.032396,0.066047&sll=23.126468,121.291122&sspn=0.064804,0.132093&oq=%E7%9F%B3%E5%8E%9D&t=h&brcurrent=3,0x346f6d12416dd8b9:0x3e2b4f71bbf52110,0,0x3468b3c174281203:0x5ade37c6eafc1d73&hnear=%E7%9F%B3%E5%8E%9D%E6%BA%9D&z=15

9. Project Description: This two-year action research project was commissioned by the Hualien County Cultural Affairs Bureau and implemented from May 2011 to June 2013 by the National Dong-Hwa University. The goal was to facilitate a collaborative planning process to help stakeholders to designate a Rice Paddy Cultural Landscape and formulate its Management Plan. Research funding was in total about US$ 65,000.

10. IPSI Activity Clusters:

3) Cluster 2 (Policy Research)- The project aims to explore a landscape and participatory approach to incorporating the Satoyama Initiative framework into a rural Cultural Landscape designation and its management plan under relevant legal instruments of Taiwan.

4) Cluster 5 (On-the-Ground Activities)- An indigenous village and the surrounding production landscape in eastern rural Taiwan was chosen as the case study area (Pic 1). The goal of the empirical study is to explore, first, to what extent the Satoyama Initiative framework can fit into the management plan of the rural cultural landscape. Second, what contribution a collaborative planning approach can make to reach consensus among different stakeholders.

11. General background of the project area:

1) Location: Fengnan village is located at the most southern tip of Fuli township, with the Coastal Range across its east connecting with Cheng-gong Town of Taitung County. The village occupies up to 35.18 km² and is the largest village in the township. The boundary of Ciharaay cultural landscape is a complete watershed of the Stonghouse Ravine Stream that is situated on the most north of the Turtle Stream watershed. The Ciharaay cultural landscape covers a land area of 1,040 hectares. Right next to it is the 1682-meter highest peak of the Coastal Range. The area distributed with rice terraces, irrigation canals and the aboriginal tribe Ciharaay downstream of Stonehouse Ravine Stream is the core area of the entire cultural landscape, with 20 hectares of rice terraces and 6 irrigation canals adding up to 4,100 meters long (Fig 1).

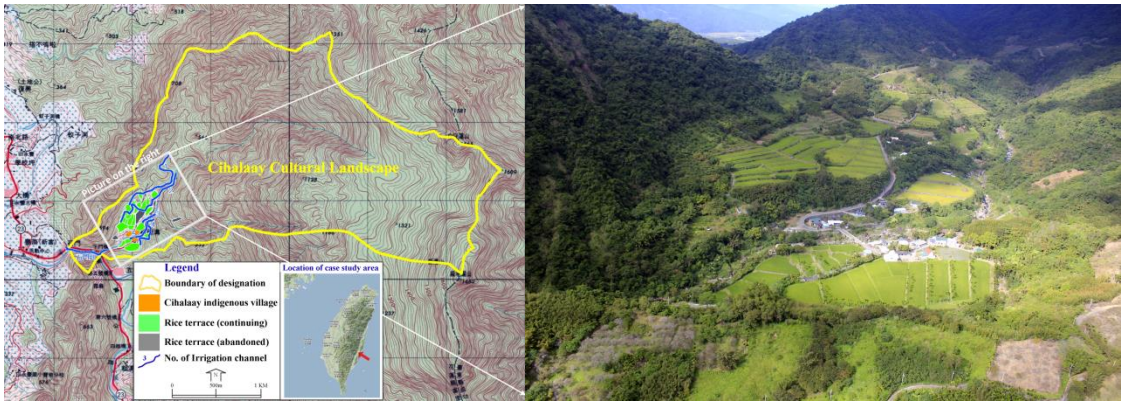

Fig 1 Boundary of Cihalaay Cultural Landscape

Picture 1 The newly designated Cihalaay Cultural Landscape covers nearly 1000 hectares and comprises mosaic landscapes of a indigenous village, rice terraces and irrigation channels, orchards, secondary forest, nature forests and streams.

2) Land use and land ownership: 94.7% of the designated cultural landscape is forest area. 5.2% is unclassified and 0.1% is hillside conservation area on land use zoning; whereas on land use classification, 87.4% of it falls into forestry, 5.1% is agriculture, 6.4% is unclassified, 0.9% is construction, 0.1% is transportation and 0.34% is private land which occupies 35 hectares of the total area.

3) cultural groups: There in the cultural landscape are 26 households, that is a population of 150 in which 97% are Amis, with only one Hakka, one Bunun, one Atayal and two new immigrants. Of all the households, most of them have an average household population of five, the second most has seven and 2-3 households have more than 10 members. As per religion, Ciharaay is mostly occupied with aboriginals and thus most residents are Christians, only one household is Catholics and another Jehovah's Witness.

4) Age structure: Depending on the size of economic activity, three age groups are concluded in the cultural landscape range. The first age group is composed of 35 people who are aged from 0 to 14 in which 20 of them reside in the area and 15 of them relocated to Taipei. Due to the fact that the government offers subsidies to teenagers who attend school, most of the teenagers choose to further studies after junior high school, however; only about 50% of senior high school graduates further their studies. Most of those who have decided to get a job instead of studying choose to work in big cities such as Taipei, Taoyuan and Taitung because of the very few job opportunities in Hualien. The second age group has a population of 90-100 between the age of 15 and 64 in which 40 of them reside locally and 50 of them spread to work in the northern part and Li-shan. This age group is the most productive, and has working ability and capacity, and therefore is mostly involved in agriculture, carpentry, construction, factory working, with only a small number of younger ones in the service sector. The last age group refers to 20 seniors who are above the age of 65 in which ten live in the area and the other ten in Taipei. The seniors who reside locally engage in low labor work as well as agriculture, carpentry and weaving.

5) Education level: Most of the residents have primary school qualification, with some

having received senior high school or vocational education. At present, residents under the age of 30 mostly have attained senior high school or vocational school; whereas those who are above 50 are mostly primary school graduates, with some illiterated. As for residents aged between 30 and 50, they are a mixture of the above-mentioned groups. If an agricultural society has a small educated population, it will make it difficult for new agricultural technology to promote and new agricultural information to flow quickly.

6) Choice of crops: The area is located on a sloped hillside, with most of it being woodland and dry land, and only a small part of farmland, thus small-scaled fields are cultivated for planting. With the forming of steps of terraces, farmers put focus on planting rice mainly on the farmland, and vegetables for self-consuming such as tree beans; as for dry land and woodland, plums, sweet peaches, persimmons, oranges, bamboo shoots, grafted pears, nuts and coffee is planted, and lilies could also be found earlier in the area.

7) Method of farming: (a)Rice planting: Yinchuan had signed a contract with Fengnan rice farmers ten years ago, and that is why there was quite a surprising amount of organic rice planted in the district, however; with time goes by, the current proportion of organic farming against non-organic has dropped to 48:52, which is in fact as a result of farmers getting older and finding non-organic easier; (b)Plum planting: because the cost of plum planting is low and plums do not require the application of pesticides, plums are still being grown in most of the area; (c)Coffee is another kind of plants which needs no pesticides. At present, only one household is involved in this 100% pesticide-free planting; (d)Bamboo shoots are a type of wild plants whose harvest season falls in March and April each year. When it comes to harvest time, farmers travel far up to the mountains to pick bamboo shoots and carry them to markets for sale or home for self-consumption, thus it is believed that they are also pesticide-free. (e)Others including sweet peaches, persimmons, oranges, grafted pears, betel nuts are produced through a non-organic way of farming as herbicides are applied.

Picture 2 Besides of certified organic farming, natural farming is expanding

8) Rice production marketing: Fengnan has a clean water and natural environment to grow organic crops, however; traffic is quite inconvenient, thus sales can only to be made through food dealers. Organic rice, for example, has a better market price, but its relatively higher cost and manpower problems stop farmers from growing, therefore; not all farmer households are involved. Still, around a half number of rice farmers adopt non-organic farming. As for organic rice, most farmers who have taken part in local organic rice production and marketing class sell their crops at Yinchuan Sustainable Farm whereas those who have not sell their crops to Jicheng Rice Company. Besides, the Fengnan Community Development Association organizes cultural and eco-tourism

activities for tourists from time to time, so farmers have another source of income.

9) Fruit production marketing: (a)Plums: Organic plums being purchased by Yinchuan Sustainable Farm and non-organic plums being bought by merchants at market price which is subject to change with the size of the fruit. The fact is the larger the fruit, the higher the price; and the closer to the early period of purchase, the higher the price. The price can go down so much at the end that farmers simply give up picking; (b)Coffee. One household who planted rice three years ago started harvesting in the year of 2012 and planned to switch to homegrown organic coffee for self-marketing in Ciharaay (Stonehouse Ravine) in the future; (c)Sweet peaches, persimmons, oranges and grafted pears: Because planting takes place very close to mountainous regions inhabited with numerous groups of monkeys, they are usually the very first ones to enjoy ripe fruits, with very few left for farmers; (d)Betel nuts, bamboo shoots: They are usually purchased by merchants at higher prices compared to those grown on flatlands because wild grown bamboo shoots have more texture to them.

12. Methodology: The project, first, learnt from the landscape approach of IUCN protected landscape and the Satoyama Initiative and, second, explored opportunities of relevant national legal instruments for application. A collaborative planning process was facilitated to involve multi-stakeholder participation in designation of the Cihalaay Cultural Landscape and formulation of its Management Plan (Fig 1). Drawing on a theory of collaborative planning advanced by Healey (1997), this research sees a planning and management process as a social process that helps to build up knowledge resources, relational resources and mobilization capacity among all stakeholders (Fig 2).

Fig 1 Research Flow Chart

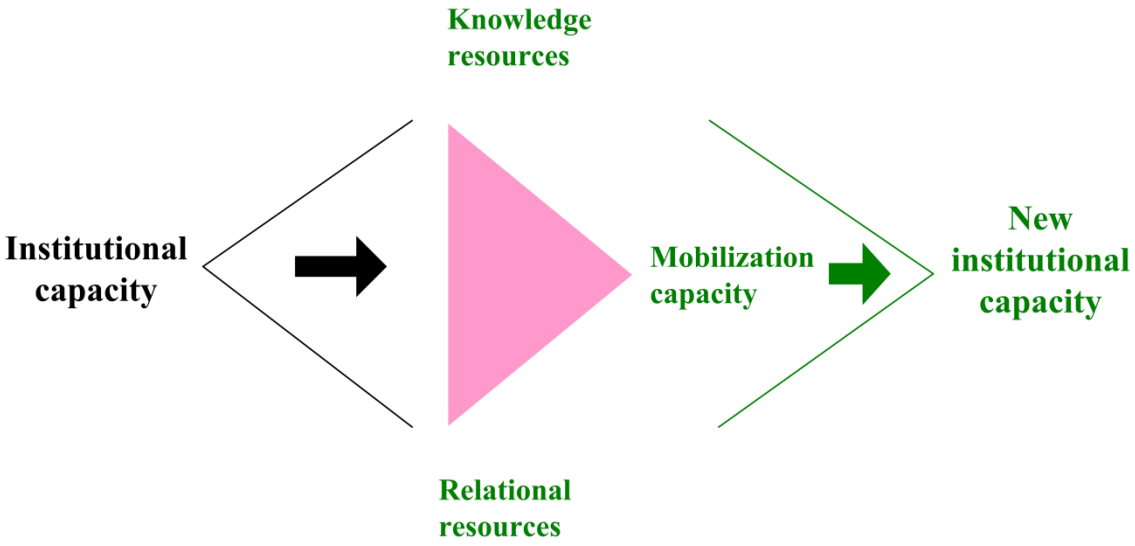

Fig 2 Theory of Collaborative Planning (Healey 1997)

A pilot study area of a rice paddy production landscape in the indigenous Cihalaay village, Hualien County in eastern rural Taiwan was selected as a potential Cultural Landscape site. The study employed a watershed-based approach to assisting stakeholders to designate a protected landscape which covers nearly 1000 hectares and comprises mosaic landscapes of an indigenous village of 25 households, 20 hectare rice terraces, 6 irrigation canals, orchards, secondary forest, nature forests and streams. Five steps of a participatory planning process (including preparation, discussion, consensus-building, action planning, implementation and monitoring) were facilitated by the research team of National Dong Hwa University in light of the collaborative planning theory and qualitative methods (participant observation, interviewing and group discussions) from May 2011 to Jun 2013 to enhance partnership among stakeholders (Fig 3).

Fig 3 Steps of the Participatory Planning Process

13. Identification of values of the Ciharaay cultural landscape

1) Showing positive significance of human interaction with nature: Landscapes including

rice terraces, irrigation canals and tribes in Ciharaay are situated on sloping hills at downstream of Stonehouse Ravine Stream. It is the fruit of the Amis tribe, Ciharaay's continuing cultivation, sustainable use and maintenance. Sloping hills at midstream of Stonehouse Ravine Stream are secondary forests, mostly planted with fruit trees and bamboo while the natural integrity of mountainous forest area upstream is largely preserved the natural integrity. In terms of the whole landscape, from natural forests upstream of Stonehouse Stream catchment to secondary forests and rice terraces used and maintained midstream and downstream, the presentation is so well-structured that it serves a clear evidence of harmonious interaction among people, land and nature, and reveals an opportunity for sustainable land use. The designated area complies with the 'continuing landscape' in terms of UNESCO's World Heritage cultural landscape categories.

2) Representative and historical value: Stone Gate Canal being the first reclamation example of non-governmental Chinese-aboriginal cooperation was built between 1926 and 1928 to supply irrigation water to 20 hectares of rice paddies in Cilamitay area of Fengnan village up until today. It has been of great benefit to the village and local economic value. In addition, the design and application process of Stone Gate Canal were recorded in historical documents in the Japanese colonial period which in turn supports the authenticity of the Canal. The other five irrigation canals upstream were built by Ciharaay indigenous people with their bare hands and simple tools. The canals go past several steep slopes and cliffs and it can still be imagined how difficult the construction works were. All the above reflects the developing patterns and features of irrigation canals and rice paddies in early Taiwan which is considered having representative and memorial history and cultural value.

Picture 3 Stone gate irrigation canal was built in the 1920s

Picture 4 Interviewing with a local elder about the history of chanal building

3) Social value: In Taiwan, the amendments to the Cultural Heritage Conservation Act and its implementation rules were made in 2005 and 2006, for the first time bringing cultural landscapes into cultural heritage conservation. However, due to the fact that many cultural landscapes are where local people live, planning and management of cultural landscapes are closely related to local residents' production activities, customs, use and conservation of natural resources. The process for registration of rice terraces and irrigation canals in Ciharaay of Fengnan Village as a cultural landscape adopting a collaborative planning approach has successfully incorporated local knowledge, promoted mutual communication between relevant authorities and local people. The process stimulated the establishment of tribal autonomous Cultural Landscape Management Committee and Tribal Code of Conduct for the cultural landscape. Thanks to all the work done, the planning process of the Ciharaay cultural landscape has become a good example.

4) Rarity value: First, the range of Ciharaay cultural landscape includes the entire Stonehouse Ravine Stream watershed in which natural forests, streams, secondary forests, orchards, rice terraces, irrigation canals, ponds and settlements together construct a dynamic mosaic of social-ecological production landscapes. The Ciharaay cultural landscape is the only one, among 42 designated cultural landscapes of Taiwan, which employs a landscape and collaborative approach to the planning process. Second, rice terraces in eastern Taiwan are mostly located on alluvial plains or river terraces whereas the rice terraces in the Ciharaay cultural landscape are distributed down along sloping hills, and thus is a rarity. Third, some of the early reclaimed fields have been abandoned for 20-30 years, and thus can still be seen that small-scaled terraces and walling stone structures have remained intact. Also, large stones along original side slopes can be found in the fields. Such small and irregular-sized reclaimed terraces conforming to nature environment slowly vanished at a later time due to mechanized leveling and combining. Luckily, some spots of the designated cultural landscape have been brought under conservation and therefore have made its way to become an example of "fossil cultural landscape" of early rice terraces in eastern mountainous areas. Fourth,

5) Indigenous cultural value: 'Ciharaay' in Amis language refers to two kinds of stream fish, Taitung river loach and Japanese monk goby, which are discovered in streams by Amis ancestors migrating from Taitung coast. Amis in east part of Taiwan is in their custom to

name places after living things, mostly plants, with some after animals. However, to name a place after a species of fish is quite rare and that is why the discussed cultural landscape here has a high possibility to be a unique case, which may be associated with background of tribal migration from the coastal areas.

14. Challenges and Progresses:

1) *Challenge 1* (feasible framework and institutional arrangements for application): Designation of Cultural Landscapes under newly amended Cultural Conservation Law provides opportunities for satoyama-like rural landscape conservation. However, most designated cultural landscapes are about historical architecture conservation. None employs an integrated landscape and community-based approach to benefiting both local people and their living landscapes. *Progress of the case study*: A mutually beneficial linkage between the local community and the local authority was suggested based on an analysis of feasible legal and administrative arrangements (Fig 4). The bottom-up Code of Conduct proposed by the Local Management Committee was deliberatively infused into the top-down Management Principles and Plan through a series of local stakeholder meetings and official meetings. The three-fold approach of the Cihalaay Cultural Landscape (Fig 5) in light of the Satoyama Initiative was developed and agreed by all stakeholders to be the framework of the Mid-term Management Plan.

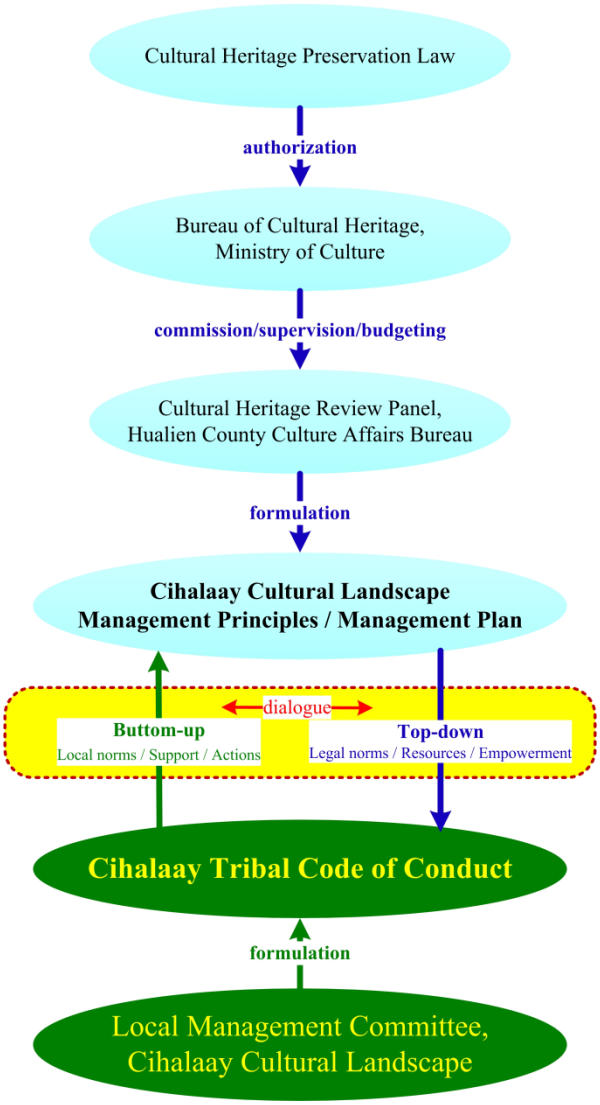

Fig 4 Mutually beneficial linkages between local community and local authority

Picture 5 PPGIS workshops were held for mapping production landscapes

Picture 6 A Local Management Committee meeting of Cihalaay Culture Landscape

Fig 5 Cihalaay three-fold approach to satoyama initiative

2) *Challenge 2* (design and exercise of a collaborative planning process): A satoyama-like cultural landscape is the outcome of a long-term interaction of local people and the rural environment. To sustain a satoyama-like landscape in an aging and declining rural area, a collaborative governance needs to be fostered to empower the local community while involving all stakeholders in the planning process. In Taiwan there is a lack of community-based case studies on the Satoyama Initiative to be learned from. *Progress of the case study*: In this project the research team employed Healey's theory of collaborative planning to design and evaluate the multi-stakeholder participation processes. Knowledge resources for investigation and conservation of the Cihalaay Cultural Landscape were created through active dialogue among the local community, experts and officials (Fig 6). With the help of the research team of National Dong Hwa University, a multi-stakeholder partnership platform composed of the Local Management Committee, the Cultural Landscape authorities and other relevant authorities was developed to enhance social capital among stakeholders (Fig 7). Seven formal stakeholder partnership platform meetings were conducted in the local village from July 2011 to March 2013 to help stakeholders discuss issues of the cultural landscape designation and reach consensus on the Management Plan. The Mid-term Management Plan of the Cihalaay Cultural Landscape (Fig 8) comprises 6 elements including vision, legal basis, five strategies for action (see Fig 5), work tasks according to the strategies, time table and input of stakeholders (possible sources of funding and projects). Indicators for evaluating future outcomes have not yet been developed. The SEPLs indicator development and evaluation will be the next research topic of the case study.

Fig 6 Dialogue between expert knowledge and local knowledge to increase knowledge resources

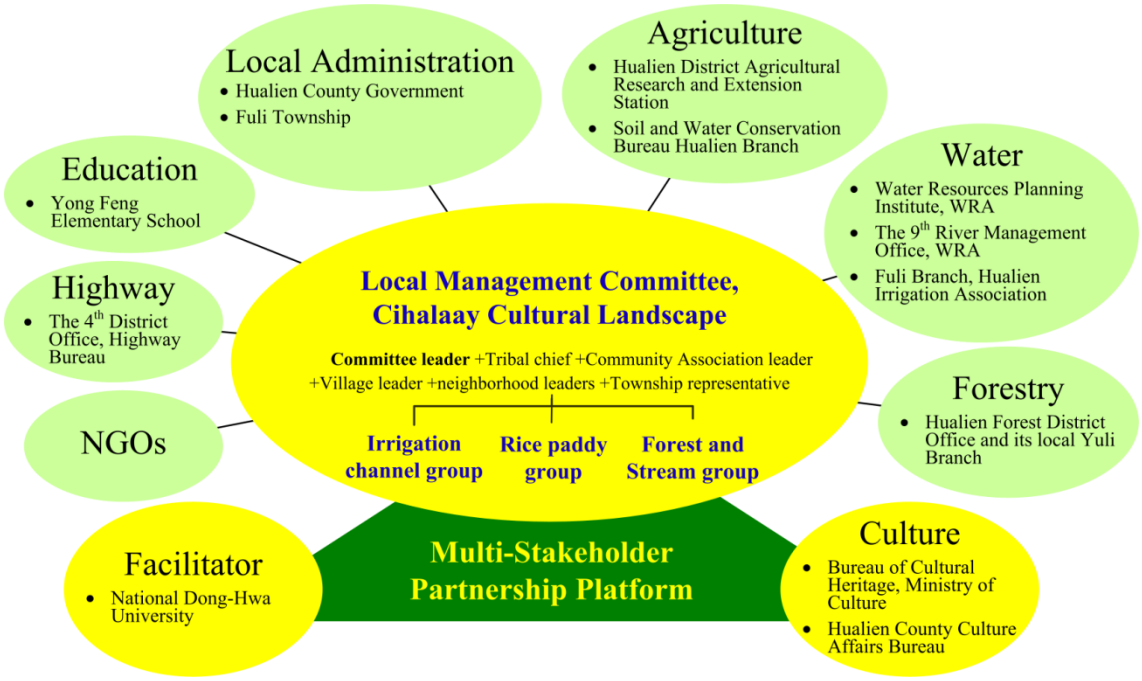

Fig 7 Stakeholder Partnership Platform to build up social capital

Fig 8 Formulation of Management Plan to enhance mobilization capacity

Picture 7 Most multi-stakeholder platform meetings were held in the local village

15. Conclusions: The two-year action research projects have successfully introduced the Satoyama Initiative's three-fold approach into formulation of the Cihalaay Cultural Landscape Management Plan through a multi-stakeholder participation process. Based on an analysis of the legal and administrative arrangements, the projects facilitated dialogue between the local community and the governmental authorities and helped to transform the local code of conduct for Cihalaay Cultural Landscape into its formal Management Principles. The project helped the cultural landscape authority to conduct a series of stakeholder partnership platform meetings to reach consensus on the designation and the Management Plan of the Cihalaay Cultural Landscape. The case study shows that the landscape approach in light of the Satoyama Initiative can help to create a new style of protected areas (IUCN protected area category V) into Taiwan's national protected area system. The Satoyama Initiative can be applied not only beyond but also within protected areas.

Picture 8 College students worked with local youth on rice transplanting

Picture 9 Geo- and Eco-tourism can contribute local economy

Website link of the Department of Natural Resources and Environmental Studies, National Dong-Hwa University: http://www.ces.ndhu.edu.tw/files/11-1020-8062.php

附錄二 復興無菸部落參與式資源調查成果摺頁

實現

Dipid
復興無菸部落 與山海溪流一
ー和諧共生的里山倡議

為了實現生物多樣性的保育與利用（即保全活用）2010年10月由聯合國大學與日本政府共同啟動了里山倡議的國際行動計畫。

里山 (Satoyama) 一詞源自日語，指範圍涵蓋農村聚落，梯地及其周圍林地等整體地景，具有提供傳統農村生活所需之薪材、落葉堆肥、水源與野菜等功能，呈現人與大自然各取所需、循環不息的馬賽克景觀。

「倡議」的英文是「intiative」，意思是各取所需，「解決問題的初始，創始行動」，因此里山倡議相當重視實踐，就讓我們一同透過里山倡議三個法架構來瞭解復興無菸部落 Dipid 如何落實里山倡議的精神

復興無菸部落以落實 Dipid 與周遭山、海、溪流的自然環境和諧共生為目標，以保護和永續利用山林溪流資源，維持梯田的生產、生台和景觀功能，傳揚傳統知識與技能增進多元夥伴關係為對策，並擬定五大行動面向

資源使用控制在環境承載量和回復力之限度內

不僅止於鼓勵在地人以友善環境的農法進行旱作，以嚇阻代替獵捕侵擾農作之野生動物，更對於外來遊客旅遊型態與預約人數進行控管，以控制在環境承載量和回復力之限度內。

循環使用自然資源

水資源豐沛的復興部落，善於妥善運用水資源於搬米，嚇阻野生動物，並循傳統方式進行堆肥，皆是在地居民循環使用自然資源的例子。

傳揚傳統生態智慧與技能

透過部落耆老解說導覽，並帶領遊客深度體驗先民善用民族植物的方式，進行小眾旅遊，以傳揚傳統生態智慧與技能。2015 年更實試初推傳統草鞋編製民俗技藝 增進在地居民凝聚及旅外同鄉歸鄉，提升其文化認同。

促進多元權益關係人的參與合作

早年與在地的真耶穌教會結合，義務推廣許多公益理念，近年來更與東華大學學者專家及林務局花蓮林區管理處、水保局花蓮分局、花蓮農業改良場等單位合作，進行更多元的社區培力計畫。

增進 Dipid 生活品質與經濟收益

無菸 無酒 無檳榔的身心健康生活，早已在復興無菸部落行之多年，目前仍持由部落義工向外推廣；而近年來越來越興盛的生態旅遊與在地農特產（洛神花 刺五加 薤心等），也提高了經濟收益。

「目標」

Dipid與山、海、溪流的和諧共生

「方法」

- 杜絕不友善的漁獵方式，以保護和永續利用山林溪流資源
- 改以友善環境的農法進行旱作，以維持梯田的生產、生態和景觀功能
- 發展小眾旅遊的解說體驗，以傳揚傳統知識與技能
- 增進多元夥伴關係，以促使在地青年回鄉就業

花蓮縣豐濱鄉復興部落

一個令人感到真誠而溫暖的純樸部落

復興無菸部落

如同許多農村人口外流且老化，但因堅定信仰的支持，使僅存的在地居民人老心不老，於民國九十五年成為全國第一個無菸無檳榔的無菸部落。

雖然現在人力不足以維持梯田的耕作，但在地的Faki、Fai—阿美語的男性長輩、女性長輩之意ー 老當益壯，仍然遵循著傳統阿美族順約樣實的生活方式，保全活用自然資源、與大自然和諧共生。

保存活用森林產物

貼心小叮嚀 /

來到Dipid，可以試著學習與大自然和諧共生的純樸生活，如果以不友善環境的方式對待自然資源者(如：電毒魚)，可得依法究辦喔！

為尊重在地居民，一律採取**預約制**！

為友善生態山林，參訪團體適合**15人**以內喔！

聯絡資訊

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理事長王明源　總幹事張慧芬

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0928-813-592

臉書粉絲專頁搜尋

花蓮 Dipid- 復興無菸部落

企劃製作 /
花蓮縣阿美族社區營造協會、
東華大學自然資源與環境學系地景保育與社區參與研究室、
中華民國自然生態保育協會共同製作

諮詢顧問 / 王明源、張慧芬、張惠珠、李光中
撰文 / 王鈴琪
手繪圖 / 鄭丽文
攝影 / 王鈴琪、謝逸侯、顏绍伃、林祐竹、鍾孟瑾
美術編輯 / 謝逸侯

發行 / 行政院農業委員會林務局與花蓮林區管理處共同發行

1. 野菜 -

被戲稱作草食性民族的阿美族，真的很愛吃草喔！舉凡昭和草 (Kalawangay)、大花咸豐草 (Kasipilay)、龍葵 (Tatokem)、過貓 (Pahko)、山蘇 (Lokot)、牧草心 (Peneng)等等，不勝枚舉，阿美族野菜多半摘取嫩葉川燙後，就搖身一變成為令人垂涎欲滴的阿美族珍饈囉！

2. 山棕 -

山棕，阿美語作 Sangela，其基部棕色粗纖維可作蓑衣，葉可作掃把，皮可編織童玩等器物，嫩枝醃心可食用，山棕為阿美族善於一物多用的一例。

3. 金東耳筍 -

金東耳筍，阿美語發音似日語 Kintol，又稱觀音竹、箣竹，在花蓮分布並不多，是理事長王明源 Faki 於民國八十五年特地至德武部落 (Linya) 取種來復興分送、種植的金東耳筍涼拌可食，與排骨燉煮也別有一番風味，其剛去外皮的過程繁瑣是勤勞的人才能享受的美食呢！

4 洛神花 -

近年來復興部落因缺乏人力管理維護水圳梯田，因而改種植旱作，如：不灑農藥的火龍果、洛神花等，其中洛神花已發展可讓遊客醃製洛神花的體驗遊程，復興部落的洛神花物美價廉，品質不亞於台東呢！

5. 黃藤 -

黃藤，阿美語發音作 Woway，其嫩枝醃心稱為薤心 (Dongec)，苦中回甘的藤心排骨湯，阿美族視為是刺激乳汁分泌的哺乳聖品；剝取其藤皮，可用於綑綁或藤編手工藝；老莖可製成傳統藤床、藤椅、背簍等用品。

6. 颱風草 -

大多數人都知道看颱風草的葉中央有幾個，今年就會有幾個颱風真正入侵台灣，理事長王明源 Faki 隨手指著路邊的颱風草談到阿美族何以如此有智慧的保全活用森林產物，他表示：「聖經上說」你去察看螞蟻的動作就可得智慧」，言下之意，遵循聖經教導師法自然就可得著智慧。

7. 紅藜 -

紅藜 (Kowal) 與小米 (花蓮阿美族稱作 Hafay，台東阿美族稱作 Lamero) 同是早年阿美族很普遍的傳統旱作，其結實累累的成串種子可混在麻糬 (Tolon) 裡一起搗打，或者和在米中一起煮食，都是增加膳食纖維的健康米食。其中，紅藜泛紅的嫩葉在那買不起化妝品的時代，是愛美少女們最佳膳脂替代品喔！

8. 刺五加 -

花蓮特有的野生刺五加，在許多醫學報告裡顯示具有抗氧化、解疲勞之效，如今與農會合作生產，成為復興部落的特色幸茶，用以款待遠道而來的貴客，亦歡迎重視養身的您立馬打包採購喔！

9. 薀草 -

葉形有點像木瓜的薀草
花蓮的阿美族稱之為與木瓜同音的 Kowa
她曾是台灣重要的經濟作物其麵心可作為高級手工紙張，取出質地有如保麗龍般薀草麵心的過程趣味橫生，經過一番折騰，「 波 」了一聲，麵心驟然飛上天，落下，薀草外皮的粉末，據說可敷在傷口上，相傳有治療創傷之效薀草嫩枝的心，讓大家吃了清涼解渴透心涼。

復興部落旅遊小地圖

2. 入口水鹿意象 -

水鹿的阿美語發音作「馬隆恩 Malongen」其嗅覺聽覺敏銳機警，是一種極為合群的群居動物，代表著復興部落耆老希冀後嗣子孫敏捷而團結的殷切期盼。

3. 真耶穌教會 -

民國四十一年真耶穌教會設立之後，復興部落便積極與教會結合，因著宣揚在基督裡成為新造的人之無菸健康理念，而成為全國第一個無菸部落。居民秉持著愛人如己的信念，四處做志工，服務其他地區老人，信仰真可說是復興部落的在地策動凝聚核心。

4. 搭路岸 -

搭路岸 Taloan(阿美語「工寮」之意)裡藏有善用水資源的祖傳智慧：傳統搗米器具的阿美語稱作「Pitifekang」，利用復興豐沛的水力來搗打穀粒；在傳統搗米器具的四圍另有手動打水器、石磨可以讓人緬懷古早生活喔！

5. 聚會所 -

因為信仰之故而沒有豐年祭的復興部落，聚會所是部落居民舉辦討論會議、培訓課程及節慶活動的聚集場所。復興近年來社區營造及旅遊活動逐漸頻繁，亦經常成社區成果展現與接待遊客的地方呢！

6. 力比旦溪 -

阿美族祖先遷徙至此，見此地遺留海中貝類(阿美語稱為「力比 Dipid」)繁多，故稱那條貝殼密集的溪為「力比旦溪 Dipitan」，此地因而稱之為「力比 Dipid」部落，至戰後才改稱「復興部落」。

7. 瀑魯幹溪 -

先民來到溪邊發現有酒甕(阿美語「瀑魯 Polo」)，便將此溪命名為「瀑魯幹溪 Polopkang」。

為防止野生動物下山享用 Faki、Fai 辛苦耕種的農作物，於是在瀑魯幹溪邊設置阿美族語稱為「sapifahfahkofafoy」的竹筒，盛滿水後的竹

筒因旋轉而敲擊發出清脆響聲以驅趕嚇阻代替獵捕動物，這是復興友善環境的具體措施之一。

8. 加塱溪 -

「加塱溪 Kalong」，阿美語指「共享」之意，以紀念首位從太巴塱移居至復興部落開墾的阿美族其樂於分享的精神。加塱地區有著大茄苳及大榕樹，茄苳樹下傳說曾有巨蟒盤據，後來以火驅趕才使之離開樹窩。

9. 眺望綠島大石 -

天晴海清時，可以躍上這海岸山脈的大岩塊，哼著古早的小夜曲，眺望著遠方的綠色島嶼，遙想著某個伊人，這是個靜心的好所在。

10. 拉拉芭岸 -

「拉拉芭岸 Lalapaan」意指放牛之地，循著一條古樸而毫無水泥的步道往上走，每一層階梯都運用著阿美族祖先流傳的生態工法，讓我們邊走邊感佩這條原住民與大自然共存共榮的心血結晶。

阿里鳳鳳 -

不同地域有著不同植物而衍生出各具特色的阿美族飲食文化，在花東縱谷的阿美族部落中遍尋不著的阿里鳳鳳 (Alifonfon)，即是居住於東海岸的阿美族特產喔！阿里鳳鳳類似漢人的肉粽，以植物葉片包裹著糯米飯 (Hakhak)，是海岸線阿美族上山工作所帶的便當，繁瑣的製作過程中蘊含著妻子對丈夫的愛意： 採集海岸植物

林投 (papah no paringat)，一一去除鉤刺、洗淨，取用四條林投葉依序交叉編織，蒸煮一個小時以上而製成。近年來亦發展以月桃 (Lengac) 的葉子編織而成的阿里鳳鳳，雖內容物都是糯米飯，但會隨不同植物包裹而有不同的馨香之氣喔！

好吃好玩報你知

- 吃： 山珍海味風味餐、養身奉茶刺五加 物美價廉洛神花、傳統食物 DIY
- 知： 保全活用山海溪、解說示範讓你知
- 玩： 攀爬老樹賞風景、友善溪流體驗趣
- 樂： 伴手特色鑰匙圈、傳統草鞋帶回家

交通資訊

自行開車
/
請由台11線前往

大眾運輸
/
花蓮客運海線
花蓮車站--新社
No. 1127/1145/1140

1. 入口 -

沿著湛藍的台灣東海岸走，轉進新社村的一條蜿蜒小徑，逐漸步入宛如海岸山脈裡的伊甸園—復興無菸部落。

Realize harmony and coexistence between Fuhsing Tribe, Dipid, and its mountains, streams and seas in the light of Satoyama Initiative

To achieve conservation and utilization of bio-diversity, in October 2010, the United Nations University and the Japanese government jointly launched an international action called Satoyama Initiative.

The word 'Satoyama' was derived from Japan, referring to villages, farmland and its surrounding woodland. It has functions of providing traditional rural life with firewood, weeds, mushrooms, bamboo shoots, water resources and compost, showing a mosaic landscape in which the man and wildlife take what is needed in a sustainble cycle.

The meaning of 'initiative' is defined as 'the very first act to solve the problem'.That's why Satoyama Initiative puts considerable emphasis on implementation and on-the-ground practices. Now, let's understand how smoke-free Fuhsing Tribe, Dipid, realize the spirit of Satoyama Initiative through the so called 'three-fold approach.'

Smoke-free Fuhsing Tribe aims at achieving harmony and coexistence between Dipid and its surrounding natural environment - mountains, streams, and seas. There are four strategies including: putting an end to environmentally unfriendly hunting and fishing to promote sustainable use of forest and stream resources; adopting an environmentally friendly dry farming to maintain hill slopes' production, ecological functions and scenic beauty; developing small-scale ecotourism with interpretation and experience of traditional knowledge and skills; enhancing multi-partnership to attract the young to return home to work.

• Resource use within the carrying capacity and resilience of the environment

Encouraging people to adopt dry farming in an environmentally friendly way; deterring wild animal intrusion instead of hunting; controlling tourist activities and number.

• Cyclic use of natural resources

Using abundant water resources properly to pound rice; following the traditional way of composting; utilizing wild plants for medicinal and food purposes.

• Recognition of the value and importance of local traditions and culture

Developing small-scale ecotourism with interpretation tours given by tribal elders to provide tourists with in-depth experience of utilizing wild plants as a way of revitalizing traditional ecological wisdom and skills. In 2015, the first Fuhsing Straw Sandal Folk Art Festival on Father's Day was held to enhance cohesion within local residents, attract traveling young villagers to return home, and acquire cultural identity.

• Multi-stakeholder participation and collaboration

In early years, Fuhsing Tribe combined with the True Jesus Church to voluntarily promote charitable concepts. In recent years, it took a further step to cooperate with the National Dong-Hwa University; the Hualien Forest District Office of Forestry Bureau; Hualien Branch of Soil and Water Conservation Bureau as well as Hualien District Agricultural Research and Extension Station and many more to implement different community development programs.

• Contributions to Dipid's sustainable socio-economies

a physically and mentally healthy life without smoking, alcohol or betel nuts has long been practiced in the smoke-free Fuhsing Tribe, which are still being promoted outwardly through voluntary work. In recent years, the more and more flourishing eco-tourism and local agricultural products such as Roselle, Three-leaved Acathopanax Root and Dongec (Yellow Rottan Palm) have also helped improve economic benefits.

Fuhsing Tribe's Three fikd Approach to Satoyama initiative

「GOAL」

Realising the Dipid community in harmony with mountains, streams and seas.

「STRATEGIES」

- Put an end to environmentally unfriendly hunting and fishing to promote sustainable use of forest and stream resources.
- Adopt an environmentally friendly dry farming to maintain hill slopes' production, ecological functions and scenic beauty.
- Develop small-scale ecotourism with interpretation and experience of traditional knowledge and skills.
- Enhance multi-partnership to attract the young to return home to work.

Resource use within the carrying capacity and resilience of the environment

Recognition of the value and importance of local traditions and culture

Cyclic use of nature resources

Multi-stakeholder participation and collaboration

Contributions to Dipid's sustainable socio-economies

• Smoke-free Fuhsing Tribe

a simple way of life in harmony with the nature

Fu Hsing Tribe Smoke-free

Though there is insufficient manpower to cultivate rice paddies at present, local male and female elders (Faki and Fai in the Amis language) are strong and well, and still follow the traditional Amis way of leading a plain and simple life, which is dedicated in conserving and utilizing natural resources and living in harmony with Mother Nature.

Fuhsing Tribe at Fengbin Township, Hualien Country is a simple tribe that can always bring people a feeling of sincerity and warmth. Similar to many other rural villages, Fengbin suffers from population outflow and ageing. Supported by their religion, however ,local elders firmly believed they could still do something to contribute. In 2006, Fuhsing was announced the country's first tribe free from smoking, alcohol and betel nuts.

/ Sweet reminders /

When you arrive at Dipid, please try to learn to stay in harmony with the nature.

If you are found to treat natural resources in an environmentally unfriendly way (such as killing fish by electricity or poison), the law will be enforced.

To respect local residents, all visits shall be arranged by appointment.

To preserve local ecology and forests, the maximum number of people in a group shall not exceed 15.

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花蓮 Dipid-復興無菸部落

Dipid, Hualien – Smoke-free Fuhsing Tribe

Planning and production/

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1.Weed-

Amis, who are jokingly called the herbivorous Amis, have true love for grasses and weeds. Their vegetable list includes Kalawangay, Kasipilay, Tatokem, Pahko, Lokot and Penengand so on. Amis usually harvest the young leaves, and turn them into an Amis mouth-watering delicacy simply by bringing them to the boil.

2.Formosan Sugar Palm-

Formosan Sugar Palm is referred to as Sangela in the Amis language. The brown thick fibers at its base can be used to make raincoats, leaves can be made into brooms, the bark can be used to knit toys for children, and the young shootand pithare edible. The Formosan Sugar Palm is a multi-purpose example of Amis.

3.Jindonger bamboo shoots-

The pronunciation of Jindonger bamboo shoots in the Amis language"Kintol"is close to that of in Japanese"Jindonger". It is not common in Hualien. In 1996, our Chairman, Wang Ming Yuan, took a trip to Linya to bring it back to Fuhsing for distribution and planting. Jindonger bamboo shoots can be either made into a cold dish or cooked with pork stew. The process of peeling its skin is complicated, and therefore is a delicacy only for the hard-working.

4. Roselle-

In recent years, due to the lack of manpower to manage and maintain terraces and rivers, residents have turned to dry farming. They grow Dragon fruit and Roselle without the use of pesticides. You can take the chance to experience pickling Roselle at Fuhsing. The quality of Roselle grown and sold here are as good as those produced in Taitung.

5.Yellow Rottan Palm-

Yellow Rottan Palm is pronounced as Woway in the Amis language. Its young shoot and pith are called Dongec, which is usually used to make bittersweet rib soup. This soup is seen by Amis as the best to stimulate the production of breast milk. The bark of the plant can be cut off to make ropes and handicrafts, and its stems can be used as materials for traditional rattan beds, rattan chairs and backpacks and other supplies.

6.Palm Grass-

Most of the people know the number of folds in the center of a Palm Grass leaf represents the number of typhoons that are going to strike Taiwan in the year. Wang Ming Yuan, the Chairman, pointed at the Palm Grass on the roadside, explaining how wise Amis are in preserving and utilizing forest products. 'The Bible says, "You go look at the ants and be wise."' In other words, you will be wise if you follow the Bible.

7.Formosa goosefoots-

Both Formosa goosefoots(Kowal) and millet (Hualien Amis call it Hafay while Taitung Amis call it Lamero) were very common traditional crops produced by dry farming in early years. A cluster of Formosa goosefoots seeds can be mixed with Tolon or cooked with rice to add extra fibers. In the era teenage girl could not afford cosmetics, tender reddish leaves of the plant were used as a substitute for rouge.

8.Three-leaved Acathopanaxs-

Unique to Hualien, the wild Three-leaved Acathopanax Root has been shown in many medical reports to have anti-oxidation and tiredness easing effects. In cooperation with the Farmers' Association, it has become a signature tea offered at Fuhsing to welcome guests from afar. If health is your major concern, buy a few packs home now!

9.Pith Paper-plant-

A Pith Paper-plant leaf is in a shape similar to the papaya. Amis in Hualien call it Kowa, a homonym of papaya. It used to be a very important economic plant. Its pith can be made into top quality hand-made paper. The process to get the styrofoam-like pith is quite amusing – it pops up into the air and falls back when you apply enough force to it. It is alleged that the powder on the skin of the plant can help heal wounds, and the heart of ayoung shoot tip is thirst-quenching.

Fuhsing Tribe
Cultural Landscape Map

2. Image of Formosan Sambar Deer at Entrance-

Formosan Sambar Deer in the Amis language is pronounced Malongen, which has a keen sense of smell and hearing, and is an extremely gregarious, social animal. The image represents the eagerness of Fuhsing elders hoping their off springs to achieve agility and cohesion.

3.True Jesus Church -

Since the establishment of the True Jesus Church in the year of 1952, Fuhsing Tribe has been in close connection with the church. Advocating the idea of no smoking to become a new man in the kingdom of Christ, Fuhsing became the country's first smoke-free tribe. Upholding the belief of loving others as oneself, residents volunteered here and there to serve the old in other areas. Religion can be said to be the core of cohesion in Fuhsing Tribe.

4.Taloan-

Taloan
(meaning 'a black-house' in the Amis language) possesses the ancestral wisdom of utilizing water resources. The traditional rice pounding tool is called Pitifekang in the Amis language. The abundant supply of water in Fuhsing is used to ram grains. Around the rice pounding tool are a manual water fetching tool and a stone mill for you to remember the old days!

5.Clubhouse-

Having no Harvest Festival due to religion, Fuhsing Tribe residents gather at the clubhouse for discussions, trainings and festival activities. In recent years, there have been more and more community and tourism activities; as a result, the clubhouse has also become a place forgiving achievement shows and greeting tourists.

6.Dipitan-

At the time Amis ancestors migrated to this place, they happened to discover lots of shellfish (Dipid in the Amis language), so they decided to call the stream Dipitan. This place, hence, which had once been called Dipid Tribe, was changed to Fushing Tribe after renaissance.

7.Polopkang-

Ancestors came to the stream and accidentally found wine urns (Polo in the Amis language), thus they named thestreamPolopkang.
To deter wild animals in the mountains fromeating theircrops, Amis setup sapifahfahkofafay bamboos by the stream. When bamboos are filled with water, they rotate and hit the ground, and a crisp sound will be produced. This method does not kill animals but scare them away, and is considered one of the concrete environmentally friendly measures.

8.Kalong-

The river was named Kalong (meaning"to share" in the Amis language) to commemorate the sharing spirit of the first Amis who moved here from Tofalong. In Kalong, you can find Autumn Maple Trees and Big Banyan Trees. According to a legend, there used to be a giant python nesting in the tree which was later driven away by fire.

9.Overlook green islands-

Weather permitting, you can climb up this large rock in the coastal mountains, humming an old tune, overlooking the green islands in the distance, thinking of some fine lady.
What a good place for meditation!

10.Lalapaan-

Lalapaan means a grazing field. Walk up an ancient trail with no concrete paving, you will find each step built using ecologically friendly methods inherited from Amis ancestors. Let us take a walk and admire the coexistence of the aboriginal and the nature.

1.Entrance-

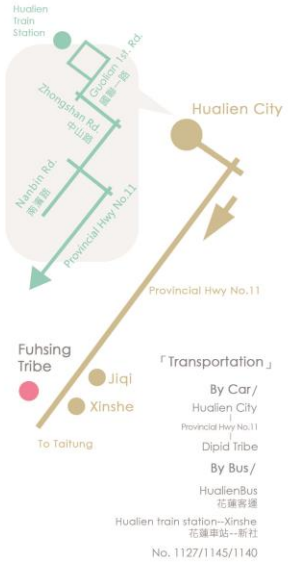
Stroll along the east coast of Taiwan, turn into a meandering trail of Pate Rungan, and in no time you will right be in the Garden of Eden in the coastal mountains - Smoke-free Fuhsing Tribe.

Alifonfon-

Different plants in different regions lead to distinctive Amis food culture. Alifonfon, which cannot be found in the East Rift Valley, is a local specialty of Amis living in the east coast. Like the rice dumpling of Chinese, Alifonfon is glutinous rice (Hakhak) wrapped in plant leaves. When Amis living along the coastline go uphill to work, they carry Alifonfon for lunch. The complicated process of making it contains love from the wives to their husbands. The first step is to pick some leaves of papah no paringat (Pandanus),a coastal plant. Second, remove the thorns and wash thoroughly. Third, cross-weave four strips of Screw Pine (Pandanus)leaves in sequence to make a container. Last, steam it for more than an hour. In recent years, Lengac(Shell Ginger) leaves have been used to make Alifonfon instead. Although contents are the same, a different plant brings a different fragrance.

What's good to eat & what's fun to to

- Joy : ..... buy signature key rings as souvenirs / ..... bring a pair of straw sandals home /
- Knowledge : ..... preserve and utilize mountains and rivers / ..... join a guided interpretation tour /
- Fun : ..... climb up old trees for magnificent views / ..... experience fun in the stream /
- Delicacy : ..... traditional foods DIY / great-style delicacies / ..... inexpensive and good quality Roselle / ..... healthful three-leaved Acathopanax Root tea /



「Transportation」

By Car/
Hualien City
Provincial Hwy No.11
Dipid Tribe

By Bus/
HualienBus
花蓮客運
Hualien train station--Xinshe
花蓮車站--新社
No. 1127/1145/1140

附錄三 第二階段工作坊報告者投影片
台灣里山倡議政策與實務工作者案例交流實務論壇