第二屆「亞洲地方議員論壇」(ACF)、
2017 年「全球地方議員論壇」(GCF) 暨
「台灣地方民代公益論壇」(TCF) 年會
時間：2017 年 8 月 26 日，10:10-10:50
地點：臺北市議會國際會議廳
大會專題演講：
4C 時代的地方治理與社會創新
主講人：李鴻源　教授
國立台灣大學土木工程學系
主持人 ：趙永茂教授
台灣大學社科院政治學系名譽教授

趙永茂：

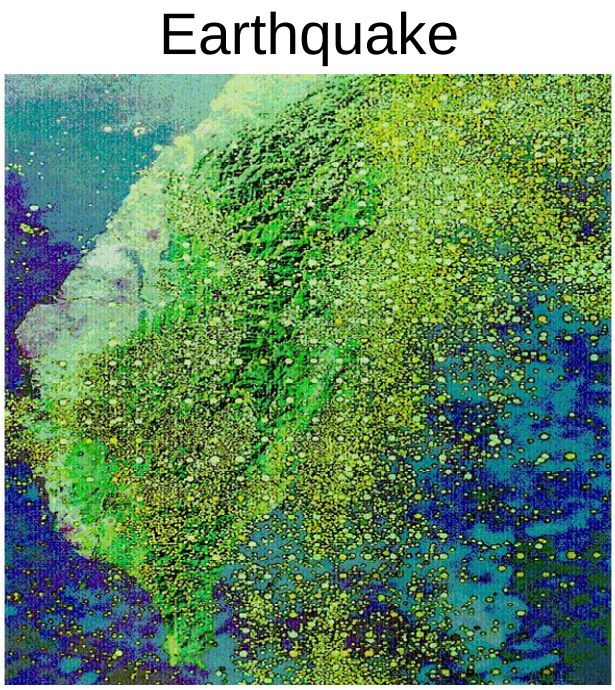
各位早安，本人很榮幸能夠出席今天的盛會，並擔任這場專題演講的主持人一職。今天我們的活動是第 2 屆的 ACF，也就是亞洲地方議員論壇在台灣舉行，這對台灣真的是別具意義，我們在今天要彼此互相交流意見，特別是要分享各自的專業知識，真正能夠達到技術的交流，所以在未來我們應該要使用更多的工具和知識，然後看一下我們是不是可以開放整個政治的參與，讓決策更加的公開透明。另外，我們要透過溝通的方式來讓大家的工作做得更好，我們必須要有這種

知識的交流。

今天很榮幸邀請到這個場次的主講人，也就是我們非常知名的前內政部部長以及學者，李鴻源李教授。我們知道李教授是前任的內政部部長，同時李鴻源曾經擔任公共工程委員會的主委，他也是台灣大學土木工程學系的教授。李教授的專長主要是在水利工程的相關經驗，還有環境等，還有生物工程的領域，李教授在台灣可以廣受各界的歡迎，今天很榮幸邀請到李教授為我們帶來這場的專題演講，演講主題是 4C 時代的地方治理和社會創新。各位女士，各位先生，讓我們用掌聲來歡迎主講者李鴻源李教授，謝謝！

李鴻源：

非常感謝趙永茂教授的溢美之詞，我先跟大家介紹，我在學界擔任教授已經有 31 年之久了，在同時間，我也相當榮幸，曾經擔任台灣省政府的水利處處長，還曾經擔任台北縣的副縣長，另外，也曾經出任公共工程委員會的主委，也曾經是內政部的部長。所以，我有在不同政府層級任職的公職經驗，在今天的演講，想要跟大家分享我個人，在政府或者是在公共治理方面的經驗，究竟我們要如何解決手上的問題。



我想我過去在政府服務，所以我今天想跟各位談的是，一個政府職能的提升，我們要如何解決我們的問題？我想全球化暖化，是全世界所有的國家所面臨的共同問題，大部分政府都忙著解決昨天的問題，事實上，我們沒有時間去看到我們明天的問題，或者是後天的問題，我覺得這才是我們最大的挑戰。

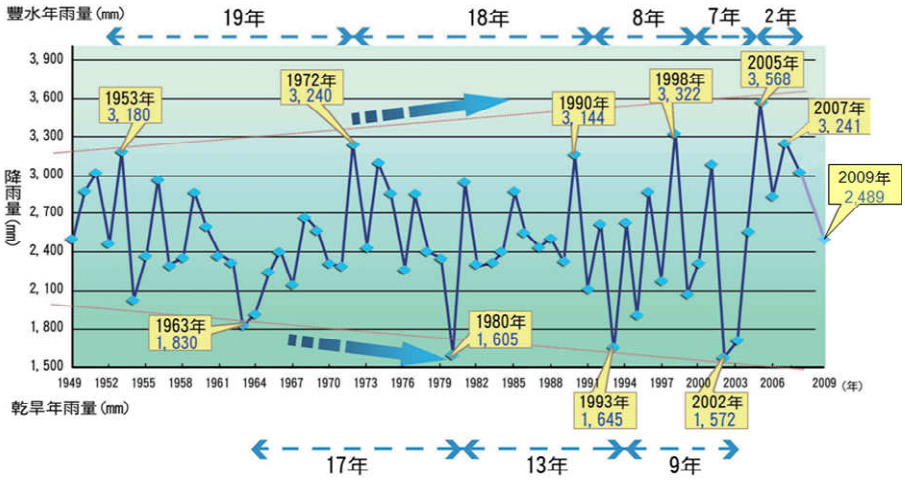
我想台灣跟所有的國家一樣，氣候已經改變了，不可能再用過去的生活方式，我們自以為在地球可以活下去。極端氣候已經變成常態，我們過去做夢，也沒有想到一場颱風的降雨，會帶來 2000 毫米的雨量，在過去是不一樣的。我相信我們有來自亞洲國家的朋友，像日本颱風降雨大概 300 毫米-400 毫米，我們台灣在颱風的降雨，是 2000 毫米-3000 毫米，所以我們碰到的問題和其他的國家都不一樣，全球暖化是全世界所有的國家所面臨的共同的議題。

這張圖是台灣曾經發生 5 級以上地震，每一個點告訴我們腳底下沒有一個地方是安全的，我們是全世界最不適合住人的地方，但是我們住了 2300 萬人，颱風是我們亞洲國家所共同的噩夢，台灣平均 1 年平均有 4.5 個颱風，可能 6 個可能 7 個，可能 8 個。

地震也是我們亞洲國家，像菲律賓日本所共同面臨的難題，一個水庫被抬起了將近 20 公尺，這種狀況會不會再發生？這種狀況一定會再發生。房子被震垮了，事實上，我們內政部營建署每一次的重大地震，我們都會檢討我們的建築規範，我們現在不太擔心 1999 年以後蓋的房子，我們非常擔心 1999 年之前蓋的房子。因為基本上它是不耐震的，可是政府要解決的難題是，錢在哪裡？你要花多少錢來幹這件事情，其實大家在談政府治理的時候，其實一個很大的挑戰，是我們的財務安排，我們要有一個更好的財務狀況。台灣當然不是一個很大的島，我們一年有 900 億噸的水下在們這個島上面，但是我們有非常高的山，我們的河川是其他國家的 100 倍多，但我們根本留不住水。還有水災，旱災的頻率越來越頻繁，嚴重水災頻率，從 19 年降到 2 年，嚴重旱災的頻率從 17 年降到 9 年，所以不是旱災就是水災。

台灣年平均降雨量有旱澇加劇之趨勢

單日降雨量及豪大雨日數增加，四季降雨日數減少



我們中文有四個字叫風調雨順，現在沒有風調雨順了，不是旱災就是水災，還有山還在長高，地質是破碎的，但是問題不大，問題是為什麼要開一條路從上面過？你開一條路從這邊過，你認為工程是可以解決這個問題，我是土木工程師，我告訴你，我們沒有這麼大的本事，所以是人出了問題，這個叫超限利用。

所以山上那個地震，可以把山上所有的樹木全部毀掉，然後這是我們的農業奇蹟，我們住到我們不應該住的地方，我相信這是所有的國家所面臨的難題，當你要住在這個地方，在這個地方工作，你認為政府有多大的本事來解決這個問題？山上這個地方非常的漂亮，平常像瑞士一樣的漂亮，但是到了颱風天，他就會變成災民。水庫淤滿了，我們這個水庫淤掉了 3 分之 1，到了 2030 年我們水庫的庫容量剩下一半，所以到了 2030 年，台灣一年要缺 40 億噸的水，我們如何找到我們的水資源？

還有我們有 300 個港口，到底有沒有智慧拆掉 100 個港口？讓我們海岸恢復它的生態，減少它的沖刷問題，這個都是政府所面臨的挑戰。我想跟各位談的是地盤下陷。

我相信很多的國家都超抽地下水，我們台灣的西部平原有 1800 平方公里，陷到海平面底下，這個地方是屏東林邊佳冬海平面以下 3.2 公尺。荷蘭是一個低地國，全國最低的地方是海平面以下 5 公尺，我們已經很成功的，讓我們的國土陷到海平底下 3.5 公尺，還在繼續沉陷當中。

然後地盤下陷往內陸移了，高速鐵路經過的地方一年下陷 10 公分，高速鐵路已經累積下陷超過 70 幾公分，所以我們過去花了好多的錢，蓋了一個高速鐵路，但是他現在處在一個非常危險的狀況。民國 100 年，當我剛到行政院服務的時候，那時候高鐵已經面臨地盤下陷的問題，列車到了彰化，它就要剎車，它不剎車他會出問題的，所以那個時候，院長指派我組一個跨部會的委員會，我們封掉了 1000 口的深水井，在 5 年之內，我們高鐵的下降幅度 3 公分的範圍。

我想舉這個例子，就想要告訴大家，任何的大小問題，到了中央政府至少都跨了 5-6 個部，所以現在政府的運作方式要改變，這是我們從來沒有想的，我們一直都認為，政府的一個部會會有辦法解決自己的問題，這是不可能的。

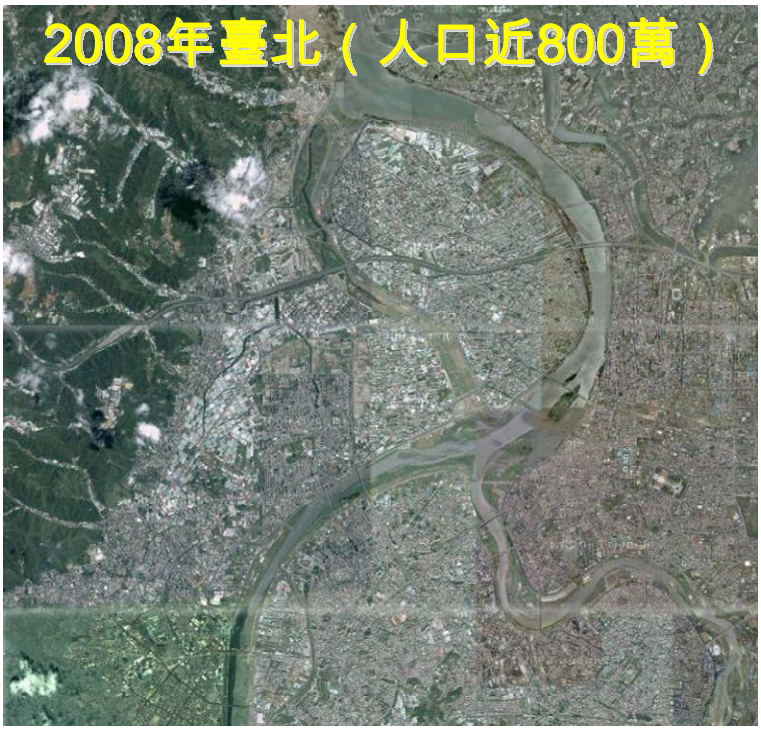
這一條是一個台東的太麻里溪，這是颱風前的太麻里，這是颱風後的太麻里，工程師沒有能力把他從這樣變回這樣。還有一件事情，我們台灣人很少談縣管河川，台東縣政府管的，所以莫拉克颱風以後，我們中央政府很夠意思，半年之內撥了 26 億台幣給台東縣政府，但是忘了一件事情，台東縣政府的水利科只有四個人。

這個科長抱著 26 億，他連招標文件都寫不出來，所以現在的問題是甚麼，是地方政府職能的提升，中央政府如何和地方政府來協調，分工要分在甚麼地方，這是每個政府都要很認真考慮的。我們到底是不是很正確分工？還有我們也必須

要問自己，我們台灣這麼小的一個國家，我們需要 20 幾個縣市嗎？每一個地方都有能力解決自己的問題嗎？這是我們必須要認真考慮的。台東縣政府當然沒有辦法處理這個問題，最後是我們中央的第八河川局進來，才把問題解決掉。還有這重建，我們相信人定勝天，這條路在 04 年斷了，06 年修回來，每一次斷掉死掉幾個人，我們都要花掉好幾個億。

我們的重建預算從民國 90 年到現在，我們的預算已經花了 5000 億了，這就是我們的重建。所以我們台灣現在在思考，人必不能勝天，我們不想跟大自然來鬥了，可是你這條路不修，講得很輕鬆，那住在山裡面的人，你如何解決人家的進出問題？

所以我們現在很認真的在思考，台北能住多少人？



23

台北在 1945 年的時候，台北的人口是 100 萬人，現在整個大台北 800 萬人，你把 800 萬人塞在這麼小的一個盆地，不缺水、不淹水、交通不堵車、空氣不汙染，房價不高才奇怪，你把這樣的一個問題丟給台北市政府，他有辦法處理嗎？他是沒有辦法處理的，所以我們台灣人很認真在思考一個問題，叫做土地容受率。

我們要解決台灣的問題，其實只有兩個字很簡單，叫遷都，把我們的行政院、立法院遷中台灣，台北變成經濟中心，台中變成政治中心，我們的人口產業很聰明的分散在我們的國土上面，這樣我們台灣的問題解決掉一半了。所以我們現在已經不是在談地方政府的治理，而是我們如何明智的使用這塊土地，這是我們要開始思考的，地方政府有地方政府的職能，但有沒有一個人在高位上面，對我們

的國土有更清楚的認識，這樣才有可能真正解決我們的問題。

我們台北縣對水是甚麼？我們希望它不淹水，希望它水變乾淨，希望它環境變好，那要怎麼辦到？一條臭水溝在新莊 2.3 公里，叫做中港大排，半個新莊的汙水全部排到這個地方裡面來，又臭又淹水，沿著中港大排兩側的房子，一年 365 天都不敢開窗。我們台灣人相信，我們整個亞洲國家的人都很善良。台灣人有多善良呢？他說臭水溝本來就應該是臭的，沒半個人抗議，幾十年就這樣過去了。

民間參與公共工程（新北市中港大排）

自立街 ⇨ 貴子坑溪匯流處

長約2.3 公里

我到了台北縣的第一個禮拜，我把 5 個局的局長找來，水利局、環保局、城鄉局、建設局、交通局，我告訴這 5 個局的局長，這一條臭水溝 4 年之內，一定要變成一條乾淨的運河。為什麼是 4 年？因為我們的台灣的一個縣長的任期是 4 年，我要確認這 4 年之內會完成。但是另一個更重要的原因是，我很有把握，因為我是水利工程，有關的水利工程方案，我已經想好了，在路底下做兩個箱涵，把汙水截走到旁邊有一個汙水處裡場，處裡完之後，再把他放回來，就這麼簡單。

還有這醜醜的 10 座混泥土牆全部拆掉重建，原來長這個樣子，4 年以後長這個樣子，水變乾淨，環境變好，政府投資了 23 億，投資完之後，兩邊的房子漲了 3 倍，土地漲了 2 倍，創造幾百億的產值，就這樣水變乾淨，環境變好，半個新莊地區的藝文活動，都在這舉行，過去新莊人根本不想靠近這一條臭水溝，現在變成整個新莊人的生活中心。

所以想跟各位談的是城市的翻轉，但你要找到一個槓桿，讓你的城市翻轉。但是我還想跟各位談的，是跨領域對話。這個計劃一點都不大，但是介面很多，

我親自操作這個計畫，相關的局長，每 2 個月要跟我開一次會，跟我開會，我協助決他們的介面問題。

跟我開會，只有二個原則，不准講廢話，帶問題來，我幫你解決。第二個原則是這次講過的話，下次絕對不准再講。所以這個計劃，我們最後完工，總工時 4 年，1 天都沒有耽擱。還有我今天要談的重點，我不只要把 1 條臭水溝，變成一條乾淨的運河，而是說當它變成一條乾淨的運河之後，半個新莊市的改造，半個新莊市的市民環境意識被我喚醒了，所以這個叫做公民參與。

為了這個計劃，我到新莊 100 個小時，跟民眾面對面溝通。第一天我去告訴他們，你住在這裡，我不住在這裡，你們最好比我更關心一點。我再跟他們講這個計劃，是你們新莊市的計畫，不是我們台北縣的計畫，要做不做？怎麼作？你們決定，不是我決定的，就這樣把他們整個組織起來。

我可以跟各位報告，4 年我拆掉 10 座橋，新莊 2 年交通黑暗期，然後一個抗爭都沒有。這個地方，原來水溝是加蓋的，新莊的停車場就在這個排水溝上面，我去跟他們講，很抱歉我要把一個加蓋的水溝拆掉，你們少掉 400 個停車位，所有的人都反對，我們家的車子，一定要停在我們的家門口，就這樣僵住了二個月，

我最後交代交通局，在附近找了 400 個替代的停車位，告訴這些鄉親說，停車場的停車位我幫你找好了，麻煩你多走 5 分鐘的路，然後他們才願意跟我繼續談，他們認為台北縣政府很有誠意，我親自跟他們上課，告訴他們甚麼叫做氣候變遷？告訴他們未來我們新莊會怎麼改變？現在對話，已經是我們新莊民眾的習慣。我在內政部服務的時候，我已經離開台北縣好久了，我就請我的辦公室同仁，去新莊社區大學，去問他們你們到底在談甚麼？結果他們非常詫異跟我回報，他們在討論小朋友騎腳踏車上學比較重要，他們在討論有沒有可能不讓外面的車子進來？

他從斤斤計較停車位，到今天他認為環境比較重要，他要犧牲他生活的不方便性，所以這有一個專業名詞，叫做參與式的決策，是由下而上，決策不是由上而下。這個計劃做完以後，台北縣政府的公務員運作文化改變了，碰到問題，幾個局長會坐下來談，第一個我們會去跟民眾談，第二個半個新莊市改造，第三個半個新莊市市民的環境意識，被我們喚醒了。這個是歐洲建築界，最新的建築概念，但是我們在台灣把他給實踐了，而且全部上網。中華民國唯一用網路在操作的計畫，我叫他們對民眾公開，我交代我們水利局長，民眾問一個問題，7 天之內一定要回答人家的問題，他的問題如果建設性，交給建築師，指這個叫做 e 政府。

過去我們的議員很少質詢中港大排，如果萬一有議員質詢，我就可以跟他說，報告議員你會不會上網？你可以上去看，你知道的和我知道的一樣多，所以解決掉很多的問題。我們新店溪畔，原來長那個樣，我們花了 1 億台幣之後，現在變

成這個樣子，我們這邊投資了 1 億，這邊的房子漲了 3 倍，我過去在政府服務的時候，我的習慣是當我花 1 塊錢，我一定要賺 3 塊錢回來，這 3 塊錢賺在你的口袋裡面，都要算的。

這是讓整個城市翻轉的槓桿。我到內政部後，告訴所有的政府官員，台北縣曾經有這樣的案例，你轄區有適合的案子報上來規劃，經費由內政部出，工程費好說，第一個報上來的，是中壢的老街溪，他的情形更離譜了，整個溪蓋起來，是一個停車場，下面的水臭得不得了，20 年來沒以人可以解決這個問題。

我離開台北縣的時候，把我的水利局局長，介紹到桃園去當水利局局長，這是我過去的台大的學生，他是有名的拼命三郎，他到了桃園以後，把一個 20 年不能解決的問題，二話不說把人家給拆了打開，然後現在變這樣子。13 億台幣，整個中壢市改變，所以老街溪變成整個中壢市翻轉的槓桿。

在執行的時候，我給吳縣長做了一個建議，我跟吳縣長說你千萬不要求快，你一定要把中原大學的建築系，整個桃園的 NGO 一起約下來，大家好好的談一談，寧可多花半年，進行公民對話。但是我們吳縣長說不行，他沒有時間，這個計劃一定要在他的任內完成，結果他就把公民參與給跳過去了，這個計畫在他任內是完成了，但是他落選了。

其實我跟各位報告，公民參與是最高明的選舉，你可以讓你的選舉藏於無形，是最重要的，是你改變整個公民的環境意識。這是它整個汙水處理廠上面，是一個公園，這個下面事實上是他的汙水處理廠。

嘉義地層下陷議題涉及單位

- 行政院
  - 五個以上部會署
  - 十個以上二級署局
- 地方政府
- 民間業者

政府運作方式必須改變!才能有效面對治水議題

1. Integration
2. Coherence
3. Governance

項目	主管機關	執行機關
水患治理 蓄洪池 抽水站 新設排水路 邊界工程 人工湖蓄洪池 防潮閘 水文監測網規劃與建置 預警系統規劃與建置	經濟部(水利署) 經濟部(水利署) 經濟部(水利署) 經濟部(水利署) 經濟部(水利署) 經濟部(水利署) 經濟部(水利署) 經濟部(水利署)	水利署第五河川局 嘉義縣政府
聚落與道路 新建住宅區 新建填土區 鼓勵溼地專用道路 聚落聯絡道路(新設、拓寬) 現有道路改善 村落圍堤區口改善 社區公園 苗圃公園 其他公共設施	內政部(營建署) 內政部(營建署) 嘉義縣政府 嘉義縣政府 嘉義縣政府 水利署第五河川局 嘉義縣政府 嘉義縣政府 嘉義縣政府	開發者 嘉義縣政府/開發者 嘉義縣政府 嘉義縣政府 嘉義縣政府 嘉義縣政府 嘉義縣政府 嘉義縣政府 嘉義縣政府
環境生態復育 水質自然淨化區 溼地公園 生態溼地園區 地下水復育先期示範區	行政院環境保護署 交通部(觀光局) 行政院環境保護署、交通部(觀光局) 經濟部(水利署)	嘉義縣政府 嘉義縣政府 嘉義縣政府 水利署第五河川局
土地與產業 野生動物保護區 生態旅遊遊憩專區 生態產業示範區 生態養殖專區 農地重劃區 養殖專用區 示範專區 都市計畫變更(新訂、擴大) 土地變更作業 傳統產業輔導 新興休閒產業推廣	農委會(林務局) 農委會、內政部 農委會、內政部 農委會(漁業署) 農委會、內政部 農委會(漁業署) 內政部(營建署) 內政部(營建署) 農委會、經濟部 農委會、交通部(觀光局) 經濟部、農委會	嘉義縣政府 開發者 開發者 嘉義縣政府/開發者 嘉義縣政府 嘉義縣政府 開發者 嘉義縣政府 嘉義縣政府/開發者 嘉義縣政府 嘉義縣政府

所以另外一個我要談的是，我要解決地盤區下陷的問題，我剛剛講我們最嚴重的地方，在海平面以下 3.2 公尺，但是你如何解決你的地盤下陷問題？不能去跟漁民講，你不要抽地下水了，你要先解決他的吃飯問題。所以你先要有一個政策，到底我們的國家對於我們地層下陷，我們的政策到底是甚麼？

第二個，你要有產業，你要農民不抽地下水，他要吃甚麼？第三個，你要有一個規畫，要有一個空間的規劃。所以我們解決一個問題，要有政策面、產業面、規劃面。但是所有的國家，當我們碰到淹水問題，碰到地盤下陷問題，都在談什麼？都在談工程手段，事實上工程手段已經沒有辦法解決我們的問題了。我現在要談的是非工程手段。這個地方海平面底下 2.6 公尺，我是這個計劃的負責人，如何來解決一個 2.6 公尺地盤下陷的地方？為了這個計劃，我到嘉義 40 個小時，跟這些漁民面對面溝通，這些漁民基本上是教育程度是不高的，甚至連我們的國語都不會講，那你要思考的是你要跟人家談甚麼？公民對話不是你跟大學生對話，你如何跟不同背景不同教育環境的人對話？

所以我跟他們談完以後，給他一個規畫，這叫做重劃，土地重劃。我幫他們做了一個 8 個溪湖，50 平方公里的滯洪池，做完以後，這個地方的淹水問題馬上解決。我把滯洪池的土挖起來，把村落墊高政府無息貸款給你，把你的房子蓋得漂漂亮亮，所以這樣子做完了之後，他房地產的價值，增加了 100 倍，他的財產增加了 100 倍。然後鼓勵他做觀光休閒旅遊，告訴他這個地方你不能再抽地下水了，你要開始做觀光業，這個叫做總合治水。可是這個計畫送到行政院經建會，碰到問題，計劃做好了，在我們的經建會就談了 4 年，從 2009 年談到 2013 年年底，談了 4 年，行政院終於說好了，準備幹了。所以這件事情，就是要告訴各位

非工程手段比工程手段來得重要，還有中央政府如何分工？

屏東也是同樣的問題，我們解決屏東的地層下陷，也是各式各樣的問題，你一定要把他的整個計畫做出來，把方案提出來，解決農民的吃飯問題，引導他一個新的行業，然後告訴他不要再抽地下水了，這件事情才會有解。

最後跟各位談汙水處理。我們都相信汙水及雨水排入下水道，但是這是一個非常昂貴的工程設施，他幾乎跟捷運一樣貴，全世界 90%的汙水，根本沒有處理，就丟到河裡面去了。還有這個地方在都會區沒有問題，在鄉下是不需要的，所以我就開始思考如何用生態的方法，一樣可以把汙水給處理掉。這個叫人工溼地，這個是我親自設計的。這個地方在我們的關渡自然公園，這條溪，叫水磨坑溪，我們一個汙染的溪流過一個自然公園，可是我們不可能在這邊蓋個汙水處理廠，因為非常貴，而且煞風景，所以我這邊做了一個 8 公頃的人工溼地，上面種滿了水生植物，讓這個溪的水，到裡面去繞了一圈，停四個半小時，我可以把汙染物去除掉 8 成半到 9 成，我一天可以處理 5000 噸的生活汙水，我取代一座汙水處理場，你猜我花了多少錢？我才花了 1300 億台幣，我幾乎省下了 9 成的工程預算。

江翠礫間水岸公園

這已經變成一個非常成熟的方案。我把這個計畫帶進台北縣，我這個廠一天處理 14000 噸的生活汙水，取代一座汙水處理場。你到汙水處理場裡面，聞不到任何臭味的。這個廠，一天處理 20000 噸的生活汙水，這是附加價值，你不用抓他，他自然會跑來。這個廠很有意思的，表面上是公園，上面都是石頭，我用石頭之間的生物膜，我就把汙水給處裡掉了。

所以我在台北縣，我們做了 300 公頃的人工溼地，我們一天處理掉 30 萬噸的生活汙水，就是一個彰化縣 1 天的用水量，我省下 9 成的工程預算，製造 3 公頃的生活公園交給學校，去做生活教育，所以我們的環境教育，是全台灣做得最好的，我們把我們中小學的教育，完全跟我們的人工溼地結合了。

我跟我的校長講，我的教育很簡單，小孩有沒有法讀好的高中，好的大學，那個是他的造化，但是只要在我台北縣，讀過中小學的小孩，他都要懂環境，所以我們解決了汙水的問題，製造了公園，再把公園交給學校去做環境教育，一次解決掉好幾個問題。因為時間有限，只能跟各位談到這個地方。

我講的重點是甚麼？重點是氣候已經變了，我們不可再用過去的方式，自以為在地球可以活得下來。中央部會間要如何協調？中央和地方要如何協調？我們必須要改變我們的思維方式。

我今天跟各位談關鍵字是夥伴關係，也就是跨領域對話及跨部門整合，我想這是每一個政府，尤其是地方政府在工作的時候一個很大的挑戰，別忘了把民眾帶進來，因為我們在台灣常常碰到的是甚麼？我們找了最好的專家，做了一個最好的設計，可是當你要施工的時候，就是抗爭。

一個工程停擺個一兩年是很正常的，我們寧可多花半年，把問題跟民眾好好的談清楚。我們的公務人員，都很怕環保團體，我把經驗告訴他們，不要怕，大家把話談清楚，大家變成一個夥伴關係，我們的問題是有解的，因為時間有限，我就跟各位報告到這邊，謝謝大家！

趙永茂：

感謝李教授透過這幾個觀點，特別是我們希望能夠在地方政府跟中央政府之間的合作夥伴。然後政府間，不論是水平的或是垂直的，我們學理上叫部際關係，內部的這些單位之間的合作關係，都是 Team。我們如何發展出這些合作關係、夥伴關係來促進特別是地方政府。我們非常的感謝李教授，把台灣一些經驗個案，以及很好發展出來的政府管理的架構，政府跟社會合作的夥伴架構，能夠發展出來。我們非常感謝李教授，讓我們再一次的掌聲，表示我們的感謝，謝謝！

現在中場時間休息，進行茶敘至 11 點 10 分，大會在場外備有點心，洗手間在電梯兩側。

2nd Asian Councils Forum (ACF)

2017 Global Councils Forum (GCF) &

Annual Meeting of Taiwan Local Councils Representatives Community Forum (TCF)

August 26, 2017, 10:10am - 10:50am

Taipei City Council (International Hall, 9 Floor)

Keynote Speech:

Local Governance and Social Innovation in 4C Era

Distinguished Lecture: Lee Hong-yuan

Professor, Faculty of Hydraulic Engineering of the Dept. of Civil Engineering, National Taiwan University, Taiwan

Former Interior Minister; Former Deputy Mayor of Taipei County, Taiwan, R.O.C.

Chair: Chao Yung-mau 趙永茂

Professor Emeritus, Dept. of Political Sciences, National Taiwan University, Taiwan

Chao Yung-mau (趙永茂):

Good morning. I am very pleased and honored to be here as a moderator. Today is the second ACF held in Taipei which is very meaningful and very well. We need to share the experience with each other. Especially we need to share some knowledge. In the future, we need to use the more knowledge and instruments to see if we can open the environment of political participation, enabling the policy more open and transparent. Because communication could make cooperation getting better, we need to the approach of knowledge exchange.

Today it is our honor to have the opportunity to invite the former Interior Minister, a very beloved minister and professor Lee Hong-yuan (李鴻源) to be our keynote speaker. Professor Lee is a very well-known minister in Taiwan and also the experience taken the public construction commission minister. He is a very beloved and distinguished professor in Department of Civil Engineering of National Taiwan University. His major is in the hydraulic and environmental and biological engineering. We are very honored to invite Professor Lee to speak on the title of local government and local governess. Now please join me in welcoming Professor Lee with warm welcome and big hands please.

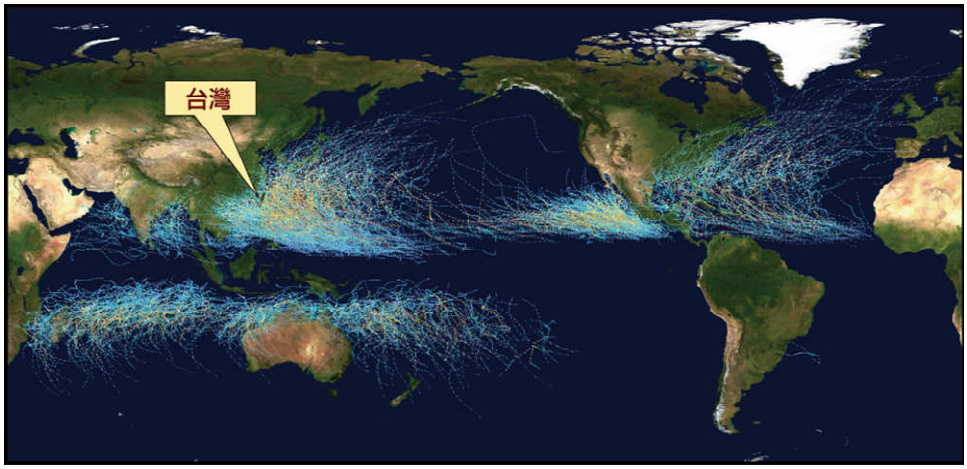
Lee Hong-yuan (李鴻源):

Thank you Professor Chao for the kind introduction. I have been a professor for 31 years and during that period of time I have the privilege to be the director general of

water resource agency, the vice mayor of New Taipei City, the minister of public construction and minister of interior. As such, I have government experience from different levels of the government. Today I want to share my experience of governess to see how we are going to solve the problems we face. Well, I think I have to switch my speech into Chinese. I believe the interpreter can do a very good job.

Since I used to serve in the government, today I would like to talk about the capacity building issue of the government. I think climate change or global warming is posing a common threat to the world. Most countries are busy solving the problems of yesterday. Actually, that leaves us very little time to see into the problems of the future. I think that's really the biggest challenge facing us.

1985~2005年颱風路徑圖



資料來源：NASA

Weather patterns have changed, not just in Taiwan, so do many other countries. We cannot proceed with business as we did in the past and still consider that we can survive in the world in the long term. Extreme weather events have become a new normal. In the past, we didn't realize that one typhoon could bring a rainfall of 2000 millimeters. Situations have changed. We have a lot of guests from other Asian countries. Let's take Japan for example, a typhoon would bring 300 to 400 millimeters of rain at most. But in Taiwan, one typhoon would usher in 2000 to 3000 millimeters of rainfall. We indeed have our unique set of problems in Taiwan. My topic today is civic participation or public engagement. How can we invite the general public to participate in public affair? Globalization and climate change are posing common threats to across the world.

This map (on PPT) shows the earthquake higher than 5 magnitudes in Taiwan in the past 100 years. Taiwan is actually not that livable across the world, but we have a population of 23 million. Typhoon is a common nightmare of Asian countries. On average, we have 4.5 typhoons annually, maybe well 6 or 8. So actually we have to depend on our fortune.

Earthquakes are also posing a threat to Asian countries, for example Taiwan, the Philippines and Japan. The reservoir may be raised 20 meters after an earthquake. This kind of situation will happen again. Buildings will collapse from earthquakes as well. Actually, the Construction and Planning Agency (Ministry of the Interior) would review our planning codes after each earthquake. Now, we no longer worry about building being established after 1999. But we worry about building being built before 1999 because they are not quake resistant. But the government also has to look for funding. How much does it cost to build quake resistant buildings? Actually that's a common threat called financial arrangement for the government. How can we better manage our government finances? Taiwan is not a big country, but every year we have total rainfall of 90 billion tons. We have the steep mountains and our rivers are one hundred times more than that any other countries. We have higher frequency of floods and draughts. The serious floods reduced from 19 to 2 years and serious draughts reduce from 17 to 9 years.

The mountains are getting higher and higher, but now why do we have to cut a road in the mountains? People consider that civil engineers can solve the problems. I am civil engineer by training, but I cannot promise that. The problem stems from humans, it's truly exceeding the carrying capacity of mountains.

The trees can be all torn town by a single earthquake. People live in place that should not support human beings. Actually, it's a common challenges pose to the world. If you want to work and live here (ppt shows the place Cingjing 清境農場), do you think the government can solve the problem? No. It's actually looks beautiful just like Switzerland in normal times, but in typhoon season it looks like this (See PPT). We see clogged reservoir. See 1/3 of the dam is clogged. By 2030 we will have half the capacity and in 2030 we will have water shortfall of 4 billion tons.

Taiwan has 300 ports. Do we have the wisdom to close 100 to them to restore marine-ecology and to solve water and soil erosion problems? The next issue is the land subsidence.

I know many countries overuse the ground water. Actually 1/10 of our western plants or 1800 square kilometers are sunken below sea level. This is Linbian (林邊), Jiadong (佳冬) in Pingtung (屏東) which is 3.2 meters below sea level. You know that in Netherlands, they are 5 meters below sea level, and now this place is 3.2 meters below sea level and still going down.

Land subsidence is moving inland. The path the high-speed rail (HSR 高鐵) passes sinks 10

cm per year and it has accumulated the lowering of land a lot, which caused HSR moving on shaking grounds. When I was invited to the Executive Yuan in 2011, our HSR faced serious land lowering so the train has to reduce its speed when driving through Changhua (彰化). When I was appointed by the Premier to set up a cross-ministry standing committee to deal with the problem, we decided to close 1000 deep wells in order to limit the lowering of land of HSR. At the end, the lowering scale dropped within 3 meters in 5 years.

Taking this example, I would like to say that my point is that the central government would have to solve all the problems across all the ministries. So now we have to change the mindset of government's governess. It's really unimaginable in the past. In the past we thought one ministry could solve all the problems, but it's impossible now-a-days.

This is the Taimali River (太麻里溪) in Taitung County (台東縣). This is before the typhoon (see PPT). This is after the typhoon. Civil engineers cannot return the disaster stricken river back to normal. This is a river being regulated by Taitung City Government. So after typhoon Morakot (莫拉克颱風) struck, the central government marked 2.6 billion NTD in 6 months. But the Water Management Section only had 4 staff members.

八八風災前太麻里溪出海口

The 4 members could not even draft the public tendering documents. Now, the issue is how to increase or to build a capacity of local governments. So central government was really kind to kick in and solve the local problem in Taitung County. We used to believe that men would conquer nature. This road was broken (see ppt), and has been

renovated in 2006. Before that, many people were killed, and the government cost countless billions of dollars to repair.

八八風災前太麻里溪出海口

Our reconstruction budgets totaled astronomical amount. It has been 500 billion since 2001. We start to think that men may not necessarily conquer nature. We do not want to fight with nature. But if you don't repair the road, it will be a big problem for the local residents living in remote villages in mountainous areas.

We now are thinking, how many people can Taipei City support?

Taipei City only had one million of population in 1945, but it had surged to 8 million. So how do you put all the 8 million people in such a small basin without water shortage, flood, traffic jam, air pollution and sky-rocketing housing prices. Taipei City government cannot deal with all the problems itself. That is what we are thinking about carrying capacity.

To solve all the problems in Taiwan, we need to move our capital. Move the Executive Yuan and Legislative Yuan to central Taiwan so that Taipei City becomes a pure economic center, central Taiwan becomes a political center, and the population will evenly spread in Taiwan. We're not talking about local governance. Instead, we need to talk about how to wisely manage our homeland.

Project that I worked on when I was working in Taipei County. What we want with our rivers is a clean river with clean water. This was a 2.3 kilometers drain in Xinzhuang (新莊) named Zhonggang drain (中港大排). Half Xinzhuang's water goes to this drainage

facility. It was very stinky and people around this drainage facility could not open their windows every day. In Taiwan, people are very nice; people would not complain about this stinky ditch. They would say of course this would stink.

When I was working in Taipei County, I gathered the heads of five bureaus, asking them to turn this ditch to a clean river within 4 years. Why 4 years? Because that's the term of a county magistrate. But another reason is that I was confident, because I am hydraulic engineering, I knew what to do with this drainage facility. My method is to build two new pipes to get rid of the waste water to sewage treatment plant and then put the water back to the drainage facility after treatment.

So here again, the before and after photos (see PPT). The water became cleaner and government spent 2.3 billion NTD and the land prices along the facility actually went up. Water is cleaner now. The environment is better and half of Xinzhuang's arts or cultural activities are held along the facility.

整治完成的中港大排

I am talking about transforming cities, but you need to find a leverage to facilitate the transformation. Still, let's go back to the interdisciplinary dialogue. This project is by no means a big project. However, you have to interface with many different departments. I was the project manager and all the involving bureaus and departments had to have meetings with me on a regular basis.

If you ever had a meeting with me, you would know two simple principles. First, no chit chat, just bring me your problems and I will help solve those problems. We indeed finished that project in 4 years. How to work in a team? That is a big challenge. Also, this is the key of my presentation today. It is not only about turning a dirty ditch into a clean river. When the river is clean, you can also transform the city because Xinzhuang residents now enjoy better environment and they will cherish their environment better. And this is what we talked about public participation.

I spent more than 100 hours spending time with the residents there. When I first met them, I told them you live here, not me. You should pay more attention to this. This is a project of Xinzhuang people. You have the decision to make, not me. This was how we organized the local residents.

Within 4 years, we tore down 10 ugly bridges, but we did not have any protests during the period of two years. Xinzhuang residents used to park their cars above the covered ditches. When I first met with the residents, I told them I had to remove these covers and they will lose 400 hundred parking spaces. At that time, there were a lot of oppositions, because people said they needed parking spaces.

We were in an impact for 2 months, and then I asked the Department of Transportation to find 400 alternative parking spaces to solve their parking problems. People just walked for 5 minutes and then they became willing to engage with us more. I educated them, talking to them about climate change, as well as the changes we have envisioned for Xinzhuanng. This is what we call dialogue. In Xinzhuang, a dialogue becomes a way of life for residents there. I was so busy when I was working for the Ministry of the Interior. I could not go on my communication with Xinzhuang residents. Thus, I sent my representatives to Xinzhuang community and asked about what the people were talking about these days. My representative told me that Xinzhuang residents were discussing whether it was possible to let the school kids ride bikes to school, and stop cars entering the school zones.

對話：活化社區，強化自信的開始

And that is my point, in the past these residents cared about how close the parking spaces were, but now they care more about the quality of life. This is what we call participatory decision making. This is bottom up not top down. Having the experience of planning this project, in a way, we changed the culture of the civil service in Taipei County, now New Taipei City. We engaged with the citizens more, and transformed Xinzhuang's environment and in term transformed the thinking of Xinzhuang residents. We achieved all of these and all the information is on the internet. This is a project that is entirely online. All the information is made public, when a resident posts a question, the question has to be addressed within 7 days. If a suggestion is valid, it has to be integrated into the project. This is what we call e-government.

Everything is transparent and we can use this to communicate with city councilors. If they ask me questions about this drainage facility, I would simply refer them to this website because all the information is there. So this is the before photo and that's the after photo. (show ppt) We only spent 100 million NTD on this. And this is a bridge for bicyclers and pedestrians. Because of our investment, the housing prices in that bank actually rose by 3 fold. So, we make one dollar of investments and our citizens actually gain 3 dollars.

When I went to Ministry of the Interior, I asked for good proposals. I told them about my experience at Taipei County: as long as you have good proposals, I would try to work with you. This is another project in Taoyuan County (now Taoyuan City): Laojie (Old Street) Creek, Zhongli (中壢老街溪). Again, a very dirty stinky ditch underneath that surface.

When I left Taipei County, I sent the hydraulic head of Taipei County to this area. This person worked very hard, he solved this problem of twenty years. He opened that up and that's the photo right now. (show ppt) It costed 1.3 billion NTD to change Zhongli City. Laojie (Old Street) Creek became the leverage to transform Zhongli.

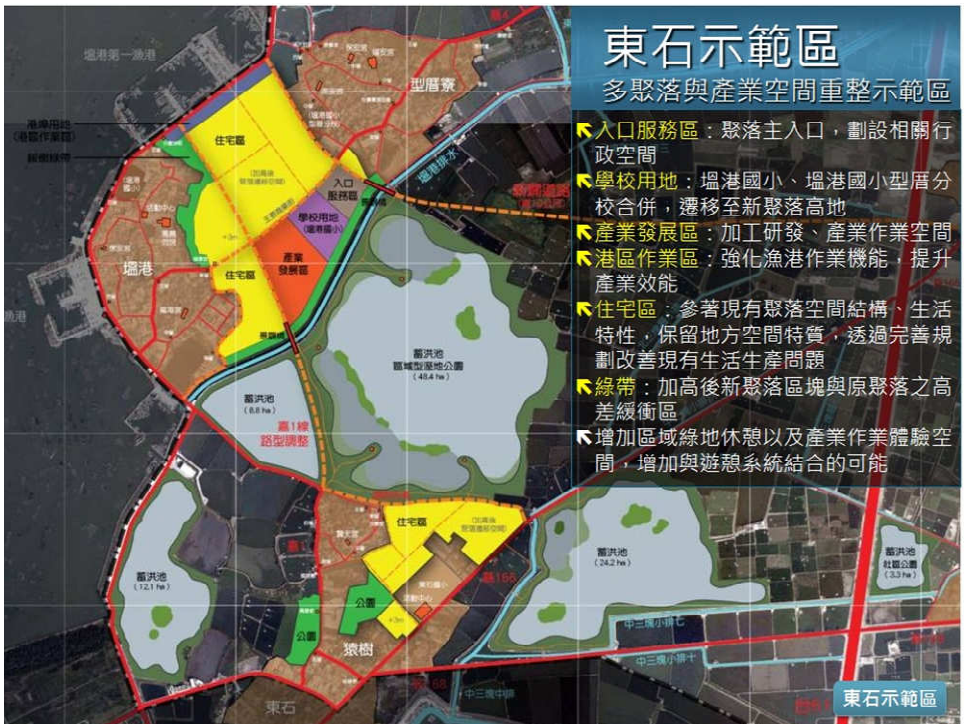
During implementation, I suggested to the magistrate of Taoyuan County. I told him not to engage too soon. Instead, I suggested that he need to engage all the NGO's in the community. Spending 6 months more to have the dialogue was worthy. However, the county magistrate turned me down. He wanted the project done within his term. He skipped the part of public participation accordingly. Yes, indeed the project was done during his term, but he was not re-elected.

Public participation is the best way. You are running your election campaign in the most effective manner. From the ppt you can see our successful project: the waste water processing plant is located underneath the park.

Let's go back to the issue of subsidence. The worst location is 3.2 meters under sea level. But you cannot simply tell fish farmers that they should stop using underground water. First you need to have a good policy, telling people what kind of ideas the government has and what kind of policy the government provides.

Second, you should have industry for the survival of the fish farmers. Third, you should propose a plan for the different zones and areas. Policy, industry and plan are three must-haves. Whenever we face the issue of flood, or issue of subsidence, the government cannot just talk about engineering means. Engineering means cannot solve the issues. We need to talk about non-engineering means to solve these institutional problems. What is non-engineering means? You can see here, (see PPT) it's 2.6 meters under the sea level. I was the manager of this project, and how do we solve this subsidence issue? We need to engage the public. I went to Jiayi (嘉義). I

communicated face to face with these fishermen for 40 hours. They're not much educated. They don't really speak mandarin. They only speak Taiwanese, so you need to think about how to communicate with them. It's not just about talking to them. You need to be able to talk to people from different backgrounds and different educational level.



After engaging the public, I showed them this rezoning of the land and invited them to be part of the project where they could fulfill their dreams. I planned 8 lagoons and 50 square kilometers of for them. After that, the flooding problem immediately be resolved. I dug up the soil from the stagnant pool to raise the village above the sea level. I elevated the land and then we reconstructed the houses for them. Of course, the real estate price went up 100 times, which meant their assets increased by 100 times. I encouraged them to stop using lagoon water and to venture into tourism. This is about Integrated Flood Management. After we got the proposal, it was delayed in the Executive Yuan for 4 years from 2009 to 2013. We were negotiating with the Executive Yuan and we finally decided to go on with it. That's why now I am telling you, non-engineering means are more important than the engineering means, and how the central government works as a team and distributes the power to local governments to facilitate the project.

Here's another city, Pingtung (屏東). They are also facing the issue of subsidence. You need to solve the problem, helping the fishermen and leading them to a new industry. You need to come up with a proposal before you can really solve the issue.

Now, I would like to talk about waste water management. We talked about sewage and drainage, but these are very expensive, almost as expensive as a rapid transit system. That's why most of the waste water is directly discharged into rivers. I am thinking about how to deal with this from a more environmental and ecological way. These are artificial wetlands, and I designed this. (See PPT) It's in Guandu Natural Park (關渡自然公園) in Taipei City. This river called Suimogeng River (水磨坑溪) was polluted, and the polluted water went through the natural park. It was impossible to build a waste water processing plant here. So that's why I designed 8 hectares artificial wetlands. I planted all these plants, so by having the river going through this wetland. The plant is able to process 5000 tons of waste water. I only spent 130 billion NTD.

I also transplanted this project to Taipei County. In this plant(台北縣樹林鹿角溪人工溼地), I was able to process 14000 tons of waste water and this one (台北縣新海人工溼地)deals with 20000 tons of waste water. This one (江翠礫間水岸公園) also another 20000 tons daily. As you can see this, on the surface it's a park, but underneath these are all rocks that I was able to process waste water using these rocks.

In Taipei County (now New Taipei City) we have 300 hectares of artificial wetland. I was able to reduce the cost by 90 %, and then I used the budget to educate our students on environmental issues. So I basically integrated this wetland with the environmental education of the schools. I tell all my principals that the education policy is easy. I mean whether the students can study in good universities, that's their own achievement, but if you study in an elementary school in Taipei County, you will appreciate the

environment because we teach them the value. So I was able to deal with multiple issues with one solution.

Because of time limit, I need to stop here. What I want to say is we need to change the way we live, otherwise we cannot survive in the future. We need to work as a team, including central government and local governments. We need to work together and to change the way we think.

I believe the keyword for today's speech is partnership, i.e. interdisciplinary dialogue and interagency dialogue. Working as a teamwork is very important for all governments, especially for local governments. Most importantly, we need to engage the public and work together with them. We have the experts, and we have great designs. However, once the government wants to implement a project, people's protests are quite common.

Sometimes the protests delay the project by more than 2 years. We might as well spend 6 months or more to have a good communication with the public and then work with them as a team. A lot of the government employees are afraid of environmental protection groups. I told them not to be afraid of them. Instead, working in partnership will solve the problems.

This is the end of my presentation. Thank you for listening.

Chao Yung-mau:

Thank you Professor Lee. From his presentation, we realize that it's important for the central government and local government to become partners. Among the governments, theoretically speaking, this interagency relationship, either horizontal or vertical, needs to have a partnership to work as a team and to develop the relations to improve the local governance. We thank Professor Lee for sharing these great experiences, which have developed a good framework regarding the government governance and a private-public partnership. Thank you again.