

SUMERNET Research Project Completion Report

**Sustainable urban tourism through low carbon initiatives:
Experiences from Hue and Chiang Mai**



for submission to the SUMERNET Secretariat



December 2012

Cover page photos are from Chiang Mai municipality (top) and Hue city (below)

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Acronyms

ADEME	French Agency for Environment and Energy Management
AIT	Asian Institute of Technology
CDKN	Climate and Development Knowledge Network
CMACC	Chiang Mai Art and Culture Center
CMBA	Chiang Mai Business Association
CMGA	Chiang Mai Guide Association
CMM	Chiang Mai Municipality
CMPTS	Chiang Mai Provincial Office of Tourism and Sports
CMRC	Chiang Mai Restaurant Club
CMRU	Chiang Mai Rashapath University
CMU	Chiang Mai University
CO ₂	Carbondioxide
DFID	Department for International Development
EEA	European Environmental Agency
ERP	Enterprise resource planning
FYV	FuenBan Yan Vieng
GDP	Gross Domestic Product
GHG	Greenhouse gas
HG	HugChiangMai Group
ICLEI	International Council for Local Environmental Initiatives
ILO	International Labour Organization
IOE	International Organisation of Employers
ITF	International Transport Forum
ITUC	International Trade Union Confederation
LFA	Logical Framework Approach
LTD	Land Transport Department
NGO	Non-Governmental Organization
NMT	Non-motorized Transport
OECD	Organization for Economic Co-operation and Development
RECM	Regional and Environment office Chiang Mai province
SERD	School of Environment, Resources and Development
Sida	Swedish International Development Cooperation Agency
SUMERNET	Sustainable Mekong Research Network
SWSC	Sunday Walking Street Club
TAT	Tourism Authority of Thailand
TNHA	Thai Northern Hotel Association
TSP	Tourism Service Provider
UNEP	United Nations Environment Programme
UNWTO	United Nations World Tourism Organization
WTTC	World Travel and Tourism Council

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Foreword

Tourism is cornerstone of many cities, generating not only employment but also underpinning local development. Although cities around the world make great efforts to attract tourists, they are also becoming overwhelmed by impacts of tourism - unsustainable resource consumption, congestion, green house gas emission, etc. Withstanding the environmental impact of tourism, many cities have shown increased interest to change course to sustainable urban tourism.

The new paradigm of sustainable urban tourism calls for holistic growth combining economic viability, resource efficiency and local prosperity. Sustainable tourism should also generate long term solutions for income and decent employment for the local people without disturbing the culture and the pristine environment of the tourists' destination. Developing sustainable urban tourism is a strategic effort that requires positive collaboration of stakeholders. The role of government or local authorities is important for the formulation of policies and implementation and planning is incomplete without including the role of different researchers, academia, private firms, NGOs and local people.

These issues were considered when designing the Sumernet-CDKN funded project 'Sustainable Urban Tourism through Low Carbon Initiatives: Experiences from Hue and Chiang Mai'. Both the cities (Hue in Vietnam and Chiang Mai in Thailand) are small and medium scale growing cities, where tourism is important sector, and where both the cities are interested towards low carbon development path. The project aimed to estimate the greenhouse gas emission from tourism sector and helped to focus on the issues of sustainable urban tourism in both the cities.

It also tried to ensure multi-stakeholder partnership between researchers, local authorities, private companies, NGOs and locals to work together for designing an efficient solution to practice sustainable urban tourism in both the cities. The low carbon initiatives were proposed after considering inputs from the different stakeholders, such as tourism service sectors, local people, students, software analytical tools and research academia experience. Thus the implementation recommended policy options from this project would not only reduce GHG emissions but also create green and decent jobs to the local people.

This report summarizes the activities conducted and results obtained from the project so that examples and lessons can be learnt by other cities. We hope that the project will, in particular, help the cities to showcase their efforts and also contribute to wider discussion on sustainable urban tourism in general.

We would like to thank Sumernet-CDKN for continuous support and guidance throughout the project duration. Our thanks are due to the boundary partners of the two cities, without whose assistance and support, the research results would not have been forthcoming. Finally, our grateful thanks to the Mayor of Chiang Mai municipality, Thailand and the Chairman of the People's Committee of Hue City, Vietnam for taking time to go through our policy briefs and issuing policy statements based on the recommendations of this project.

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Executive Summary

These two cities Chiang Mai municipality, Thailand and Hue city, Vietnam are small and medium scale cities where tourism is an important and growing sector. Local authorities of these cities are keen in developing and generating opportunities which are climate compatible and promoting sustainable urban tourism development. In this context, this research aimed to explore strategies for low carbon emissions while simultaneously alleviating poverty in the urban tourism sector of Hue and Chiang Mai.

The greenhouse gas (GHG) emissions generated by the tourism service providers in each city using Bilan Carbone® (a tool to calculate GHG emissions) was estimated. This gave the emissions of various products/services related to tourism in the two cities. The mitigation options were then identified in consultation with tourism sector stakeholders of each city. They prioritized the GHG emission mitigation options on the basis of the city's tourism GHG inventory, and the potential to generate jobs, increase income, and to provide a much cleaner environment to visitors and locals. The suitability of the chosen mitigation option in each city was also assessed through a survey, involving interviews, questionnaire to those working in the tourism sector and focus group discussions especially those who will be most affected by/ benefited with the considered options.

The result of GHG emission estimation showed that the tourism service providers emitted a total of 492,200 tons of CO₂ equivalent in Hue city and 4,417,500 tons of CO₂ equivalent in Chiang Mai municipality in 2011. The recommended mitigation option to reduce GHG emission and to create clean and decent jobs to the local people were 'Non-Motorized Transport' (NMT) in Chiang Mai municipality, and promotion of 'Garden Houses for tourism' in Hue city.

The 'Three Kings Monument Square' of Chiang Mai municipality was selected to develop NMT, i.e. to propose a bicycle route in the inner city of the municipality. Since, this area is connected with major tourist destinations at the city center, the development of bicycle route would provide an alternative mode of transport in the historical attractive places for the visitors as well as provide job opportunities for local people. Preliminary estimates also showed that implementing NMT in this area would reduce up to 570 tons of CO₂ equivalent per year within Chiang Mai municipality.

Huong Long Ward and Kim Long wards of Hue city were selected to promote garden houses. A large number of garden houses are located in these areas, and the local government is also keen to develop these areas to promote the garden houses as cultural heritage and symbol of Hue city. This promotion could also lead to increase in number of jobs for local people, and women in particular. Preliminary estimates showed that developing garden houses in these areas for touristic purpose would create additional income to the cyclo owners, garden house owners, gardeners, and also reduce up to 200 tons of CO₂ equivalent per year of GHG emission, if the garden houses are accompanied by NMT.

The two cities also organized city to city visits to share knowledge on low carbon initiatives among the partners (including Sumernet partner Hue University of Sciences). During these visits, the cities invited their boundary partners to share their experiences related to best practices in tourism sector. The city authorities' capacity to estimate GHG emission has been enhanced.

Based on the GHG emission estimation, stakeholders consultation and surveys of income generating opportunities, the study recommended policy options for climate compatible urban sustainable tourism development to the two city authorities. Policy briefs were submitted to the concerned authority in each city, for their consideration and implementation.

Chapter 1: Introduction

1.1 Introduction of partnering institutions

The Asian Institute of Technology (AIT) was the lead institute in the overall management of the project, and provided technical guidance and support. The city partners were Chiang Mai municipality in Thailand and Hue city in Vietnam, who were the direct actors of the project (along with the boundary partners). Technical guidance to Hue city was also provided by Hue University of Sciences.

AIT organized city to city visits (among the research partners and one Sumernet partner, Hue University of Sciences) to learn and share experiences on low carbon initiatives in tourism sector. A final consultation meeting was organized by AIT to discuss the project outputs, namely, project reports, publications and other project related issues.

The two city partners were responsible for conducting the survey and analysis for greenhouse gas (GHG) emissions inventory of the tourism service providers and to assess income generating opportunities. They also organized boundary partner's consultation workshop to prioritize the GHG mitigation options. All research partners (AIT, Hue city, and Chiang Mai municipality) discussed the research results with the boundary partners to produce policy guidance for decision makers.

1.2 Research project mentor

Dr. Louis Lebel, Unit for Social and Environmental Research at Chiang Mai University, Thailand, was the research project mentor, and provided valuable suggestions and comments throughout the project. He particularly helped to refine the project outputs, such as working papers and book chapter for Sumernet Book publication.

1.3 Boundary partners and outcome challenges

The boundary partners of the two cities participated in all project activities, namely, emission data collection, prioritization of GHG emission reduction, city to city meeting and consultation meeting. The boundary partners in each city were as follows:

Media

Chiang Mai: Journalist Association of Chiang Mai

Hue: Hue Local News Paper: (Thua Thien Hue Daily News)

Private Sector

Chiang Mai: Chiang Mai Tourist Business Associations, Chiang Mai Restaurant Club, Chiang Mai Guide Association, The Thai Northern Hotel Association

Hue: Association of Hotel Business, Bao Minh Travel Company, Association of Entrepreneurs, Green Travel JSC (an enterprise, owning a four-star hotel, a green restaurant and a tour operator)

Government

Chiang Mai: Tourism Authority of Thailand, Chiang Mai Provincial Office of Tourism and Sport

Hue: Vietnam Institute of Culture and Arts Studies in Hue under the Ministry of Culture, Sports and Tourism; Hue Union of Women

Non-Government

Chiang Mai: Hugchiangmai Group, Chiang Mai Friends and Chiang Mai Cycling Group

Hue: Center for Self Reliance Enrichment (Micro finance)

Tourists

The tourists are one of the important stakeholders in tourism sector for the cities, their feedback and inputs were taken through questionnaire surveys.

The project team delivered its outputs and outcomes by engaging boundary partners in the different project activities. The boundary partners were considered for the different nature of activities. Some of them initially had no or minimum knowledge about GHG emission, mitigation and resultant job creations from GHG mitigation. But, after involvement in the various project activities, they actively participated and provided inputs, suggestions and comments. They also provided data to estimate GHG emissions and to assess income generating opportunities.

1.4 Expected outputs and outcomes

The specific outputs at the end of the project were:

1. Increased capacity on GHG emissions inventory estimation from the tourism service providers in Chiang Mai municipality and Hue city.
2. Quantified GHG emissions and emission intensities of the tourism service providers in Chiang Mai and Hue.
3. Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives, such as green production and consumption practices.
4. Developed policy and plans to mitigate GHG emissions in Chiang Mai/Hue, and at the same time provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society.
5. Publications and disseminations:
 - a) Policy briefs on (i) Non-motorized transport (NMT) in Chiang Mai municipality and (ii) Garden Houses in Hue city and their submission to the local municipal authorities.
 - b) Sumernet book chapter on “GHG emission analysis and lessons learnt from tourism service providers in each city”.
 - c) One peer reviewed journal article which highlights successful practices on low carbon initiative while creating decent jobs.
 - d) Dissemination of project research results through local media, boundary partners and other special events/forum, etc. (e.g. brochures and project website: <http://sut.ait.asia>).

In the medium and long term, the expected outcomes are:

1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector of the two cities. [This would be due to increased capacity of partners (local and boundary partners), recommended policies and measures, and estimates (yearly) of GHG emissions, and specific activities implemented], and would be based on **outputs 1, 2 and 4**.
2. Planned activities in place to create (more) green jobs for women and men of the low income groups, and would be due to realization of **outputs 1, 3 and 5**.

Chapter 2: Research chapter

2.1 Abstract

Although tourism is an important economic sector of a city, it also deteriorates the environment through greenhouse gases (GHG) emissions. In order to mitigate GHG emissions from tourism sector, and to recommend opportunities for creation of green and decent jobs, this study aimed to promote sustainable urban tourism in Chiang Mai (Thailand) and Hue (Vietnam). The research estimated the GHG emissions of the tourism service providers in these cities, and recommended options to generate gender inclusive green and decent jobs. While many green jobs focus on technology-oriented solutions, this study explored job creation for the most marginalized populations in the urban areas while reducing GHG emissions.

The Bilan Carbone® (GHG emission calculating tool)¹ was used to estimate the GHG emissions, and the results showed that the tourism service providers² emitted about 4,417,500 tons of Carbon dioxide (CO₂) equivalent in Chiang Mai municipality and 492,200 tons of CO₂ equivalent in Hue city in the year 2011. The largest proportion of CO₂ emissions of the tourism service providers was due to the transport services, who contributed to 96% of the total emissions in Chiang Mai municipality and to 75% of the total GHG emissions in Hue city. However, approximately 89% and 71% of these emissions in Chiang Mai and Hue, respectively were by air transport alone.

The mitigation options were identified by consultation among the boundary partners of each city, who prioritized the GHG emission mitigation options on the basis of GHG inventory on tourism sector, and the potential to generate jobs, increase income, and to provide a much cleaner environment to visitors and locals. The recommended options were 'Non-Motorized Transport' (NMT) in Chiang Mai municipality, and promotion of 'Garden Houses' for tourism in Hue city.

2.2 Rational

Chiang Mai, Thailand and Hue, Vietnam are small and medium scale growing cities in the Greater Mekong Sub (GMS) region, which are increasingly becoming popular as tourist destinations. The total contribution of travel and tourism related activities to the Gross Domestic Product (GDP) of Thailand and Vietnam was about 16.3% and 10%, respectively in 2011, and this sector also generated about 1.8 million jobs each in these countries (WTTC, 2012a and WTTC, 2012b). WTTC also estimates that the total number of jobs in this sector would be more than 3 million and 2.1 million in Thailand and in Vietnam, respectively in 2022. Tourism (domestic and international visitors), though making important contributions to these economies, also due to its nature of activities, contributes to greenhouse gas emissions (UNEP et al., 2008; UNWTO and UNEP, 2008). It is estimated that tourism related activities contributes to around 5% of the global CO₂ emissions (UNWTO and UNEP, 2008).

Promoting tourism and tourism related activities in these cities while considering the local cultural heritage, creation of green and decent jobs for the poor and caring for the environment, will make these cities attractive tourist destinations in this region. To achieve this, the cities first need to know the amount of GHG emissions due to tourism and related activities, and then identify and implement specific actions to mitigate these emissions. Undertaking this will help cities to be attractive to the visitors while simultaneously addressing the emissions and pollution they create. If cultural heritage is used for the promotion of the city, it can lead to a

¹ Bilan Carbone® is a MS Excel spreadsheet developed by French Agency for Environment and Energy Management (ADEME) to calculate GHG emissions of local authority, company and territorial. It will provide GHG emission result in carbon or carbon dioxide equivalent in kg or ton. For more information, please visit: <http://www.terre.tv/?lang=en&vid=1151> or www.ademe.fr

² Tourism service provider (TSP) for this study refers to group of similar entities. We have used four TSPs for the analysis – hotels, restaurants, tours and travel operators and other activities (including spas, travel agencies, etc.).

“win-win” situation – reducing pollution, and improving the socio economic situation in terms of clean and decent jobs, increased income, etc.

However, one of the major stumbling blocks in addressing sustainable urban tourism is the lack of knowledge of GHG emissions by the cities. The project therefore, aimed to estimate the GHG emissions by the tourism service providers (TSP) in Chiang Mai and Hue, and to suggest mitigation options that could also help create green and decent jobs for the local people.

Earlier studies on GHG emissions of tourism related activities considered direct GHG emissions from transport, building, industry, energy sectors, waste and industrial processes, with little or no mention of indirect GHG emissions, such as air travel, visitor travel from other cities by using buses, transport goods from other places, etc. (Gillenwater, 2008; Schulz, 2010; Jun et al., 2011). Also, only few studies dealt with how to reduce GHG emissions in the tourism sector while creating decent jobs for local people (Becken and Patterson, 2006; Lebel et al., 2007; Dodman, 2011).

The two cities participating in the project are interested to protect their natural resources and save energy by raising awareness on low carbon initiatives in tourism sector, and had already initiated activities to promote green tourism by mobilizing their citizens, such as home stay programs (Hue), garden house tours (Hue), eco-tourism (Hue & Chiang Mai), cyclo (Hue & Chiang Mai) & bicycle tour (Hue & Chiang Mai), etc., and keen to develop in this direction further. Green tourism practices can help prevention of pollution (air, land and water) and promote energy efficiency measures, use of renewable energy (solar energy and bio-gas), reuse/recycle of waste and wastewater, and use of local products, etc. (Mairie de Paris, 2007; AED, 2010). However, green tourism has been initiated with little scientific backing on how much it contributes to the reduction of GHG emissions at the city level (Sabine et al., 2010).

2.3 Research project objectives

The following were the research project objectives:

- To improve understanding and to assist in the reduction of carbon emissions of the urban tourism sector
- To recommend GHG mitigation policies and plans that could generate green and decent jobs for women and men, especially targeting lower income groups.

2.4 Research questions

The research questions addressed were:

- What are the major activities contributing for GHG emissions in the urban tourism sector?
- What are the strategies for the GHG mitigation while creating decent jobs for the local people?
- What are the approaches for disseminating suitable policy options to the decision makers for implementation?

2.5 Conceptual framework and methodology

The research consisted of 5 major steps. First, data collection and GHG emissions estimations of tourism service provider’s activities in Chiang Mai municipality and Hue city were carried out. Second, on the basis of GHG inventory, mitigation options were identified in consultation with the boundary partners of each city. Third, the suitability of these options were assessed by a survey with key stakeholders in each city. Fourth, city to city visits for the research partners

were organized to observe/share experiences related to tourism activities initiated in each city. During one such visit, a Sumernet partner institute, Hue University of Sciences, was also invited to share ideas on green tourism initiatives. Fifth, research results were discussed by inviting all research and boundary partners, who suggested suitable policy options for each city to implement. After the completion of all research work, project partners discussed to finalize the project completion report, publication in peer-review journal, Sumernet research book chapter, media publications and policy briefs.

The research steps are explained in detail below:

2.5.1 GHG emission estimation

The research on the urban tourism service providers was limited to the administrative boundary of Chiang Mai municipality in Thailand and Hue city in Vietnam. The steps followed to estimate the emissions are shown in Figure 1. Tourism sector is the focus of the study in these cities (S1 in Figure 1), and tourism service providers (TSP), namely hotels, restaurants, transport services, and other activities, were the sectors considered.

A total of 686 entities (175 hotels, 321 restaurants, 100 transport services and 90 other activities) are engaged in the tourism sector in Chiang Mai municipality³ (S2 in Figure 1). However, data collection was restricted to 36 hotels, 12 restaurants, 12 transport services and 24 other activities. This accounted to a total of 84 entities which included small, medium and large hotels, tourism agencies, car rentals, spas and restaurants (S3 in Figure 1).

In Hue city, a total of 265 entities (130 hotels, 97 restaurants, 12 transport services, and 26 other activities) were identified to be engaged in tourism related activities⁴ (S2 in Figure 1). The data collected from these entities using a questionnaire was restricted to 18 hotels, 18 restaurants, 6 transport services, and 8 other activities which accounted to a total of 50 entities (S3 in Figure 1).

The data collected was input in the Bilan Carbone® spread sheet, which was composed of primary and secondary data.

The primary data refers to electricity and fossil fuel consumption in the entity, energy used for production of food, materials and other products consumed by visitors, travel by visitors and employees (amount of fuel used by vehicles, vehicle distance traveled, etc.), fuel combustion for goods transport, waste generation due to consumption of food and use of other materials, and construction materials used in buildings and infrastructures (S4a in Figure 1). The primary data was obtained from hotels, restaurants, travel agencies, spa, and city authority from the questionnaire survey.

The secondary data refers to number of tourists; number of TSP; number of employees in tourism sector; emission factors of electricity, fossil fuels, local train, food and materials used; traveling distance (by air and coach); vehicle weight, etc. (S4b in Figure 1), and these data were collected from city authorities, publications⁵ and websites⁶.

For a given TSP, using the data collected for each entity of that TSP, the Bilan Carbone® spreadsheet was used to calculate the direct, indirect and the total emissions of that entity. This was done for all the entities of that TSP, and the result obtained was used to estimate the total

³ Based on Chiang Mai municipality authorities

⁴ Based on Hue city authorities

⁵ MONRE (2011). *Development of Emission Factor of Viet Nam Grid Electricity*. Hue City Office for Statistics (2011). *Statistical Yearbook 2010*. TGO (2011). *Emission factor in Thailand classify by industrial sector*.

⁶ Websites: http://www.1stopchiangmai.com/about_cm/facts/; <http://123.242.133.66/tourism/webstorage/download/files/29-20120209045524.pdf>; <http://thaicarbonlabel.tgo.or.th/filedownload/1326646501-12.pdf>; <http://www.cmcity.go.th/>

GHG emissions of that TSP (S5 and S6 in Figure 1). Similar procedure was followed for other TSPs to estimate the total emissions by all the tourism service providers (S7 in Figure 1).

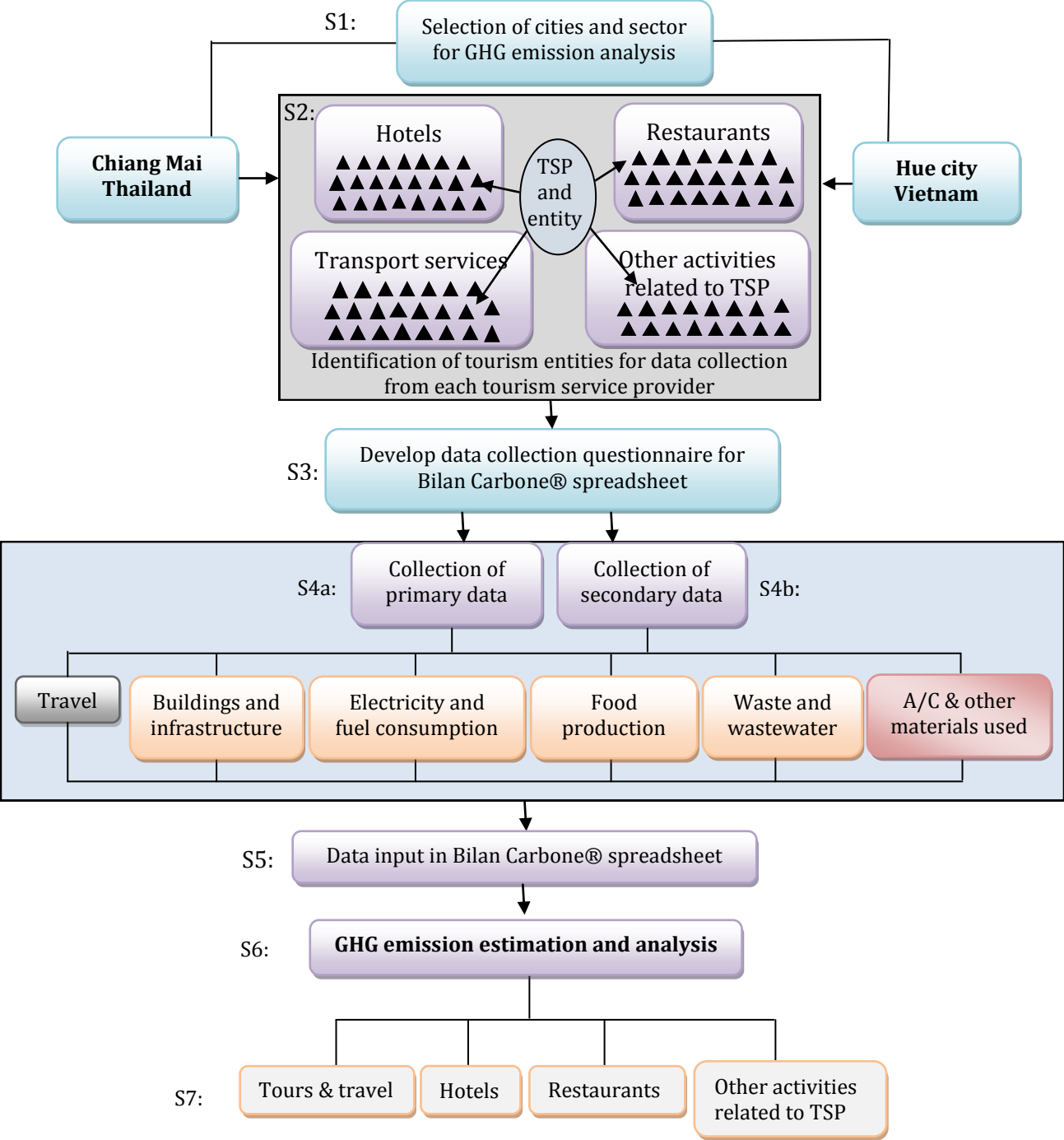


Figure 1: Methodology used in this study for the GHG emissions estimation

2.5.2 Consultation with boundary partners

On the basis of GHG emissions inventory, the two city authorities consulted with their boundary partners to come up with set of emission reduction strategies. These strategies were aimed to provide value addition to the existing plans and policies of the cities in the tourism sector by integrating low emission development and by providing opportunities for green and decent jobs to women and men.

Table 1 summarizes the set of emission reduction strategies identified by the boundary partners.

Table 1: Emission Reduction Strategies in Chiang Mai municipality and in Hue city

Chiang Mai municipality			Hue city		
Strategies/ Program areas	GHG reduction area	Employment creation to	Strategies/ Program areas	GHG reduction area	Employment creation to
Non-motorized transport	Transport	Transportation operators, street vendors, handicraft producers	Garden Houses-with options of non-motorized transport surrounding it	Transport Freight	Green house owners, vegetable garden workers, transportation operators (e.g. cyclo drivers)
Energy efficiency especially on electricity used in tourism sector	Energy (electricity)	Workers	Develop alternative mode of transport (e.g. electric car, horse, row boat, cycle in citadel area)	Transport	Transport operators Horse riding services
Increasing forestation/ plantation	Carbon sequestration	Workers, planters	Pedestrian only streets (+greenery)	Transport	Street vendors, traditional handicraft producers, security guard for parking, cleaners
Promotion of animal feed from food wastes	Restaurant/ Hotels Waste management	Waste collector, workers	Promotion of vegetarian food (not importing vegetables in Hue)	Freight	Farmers Restaurant owners/workers Transport operators
Green building	Property / Infrastructure	Builders, workers	Waste segregation (collection network)	Waste management	Waste collectors

To reduce GHG emissions considerably in both the cities, greater emphasis needs to be placed on reducing the emission from transportation sector (which constitutes the highest share in the overall GHG emissions in the tourism sector). Based on consultation with the boundary partners, the proposed measure to reduce the emissions and to increase income generation opportunities were developing 'Non-Motorized Transport' (NMT) in Chiang Mai municipality and promoting 'Garden Houses' in Hue city.

2.5.3 Mitigation options and job creation

The feasibility of the recommended mitigation options i.e. NMT in Chiang Mai municipality and Garden houses in Hue city were assessed by a survey, namely, interviews, questionnaire survey to women and men working in tourism sector and focus group discussions, especially those who were most affected by/ benefited with the considered options.

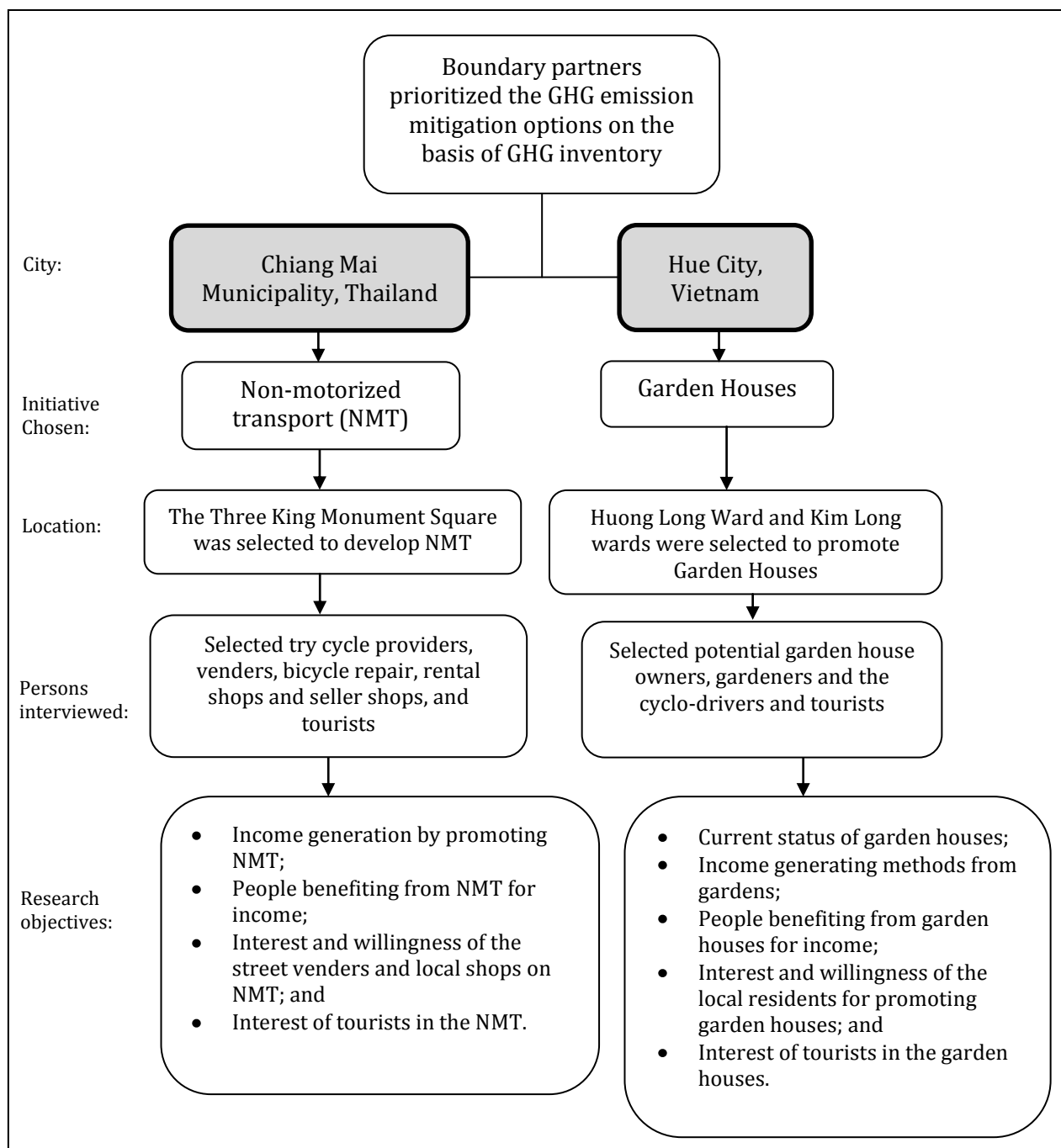


Figure 2: Research methodology for income generation and job creation by developing NMT in Chiang Mai municipality and by promoting Garden houses in Hue city

- Questionnaire were developed to collect the primary data and information related to non-motorized transport (NMT) while creating decent jobs for the local people around the Three Kings Monument Square area of Chiang Mai municipality (Figure 2).

The following boundary partners were interviewed and key information related NMT and creation of decent jobs were collected.

1. Government officers (in charge of tourism, transportation, city planning and environment);

2. Tourism authority of Thailand, Chiang Mai office;
3. Hotel/guest house managers;
4. Local gallery;
5. Tour Company/ local tourist guides; and
6. Bike parking services.

Semi-structured questionnaire survey was conducted with tourists (60 people), tricycle providers (10 persons), vendors (20 street vendors and 20 shop owners), and bicycle rental shops, bicycle repair shops, bicycle sellers (altogether 16 shops).

- ✓ Tourists with different nationalities (both Thai and foreigners) were interviewed to know their interest on NMT such as bicycling around the city. Equal number of women and men from different age groups of tourists were ensured for the interview.
 - ✓ Vendors who sale food, drinks, souvenirs, etc. along the road and shops closer to Three King Square were randomly selected for the interview to understand how many of their customers came from those who were cycling/ walking in order to assess whether promotion of NMT would lead to more customers along the road or not.
 - ✓ Bicycle rental/repair shop; bicycle sellers and tricycles personnel were interviewed to understand their existing business situation in the area to promote NMT.
- In Hue city, questionnaires were developed to collect the primary data and information related to garden houses while creating decent jobs for the local people. The participants in the survey were garden house owners (50), cyclo drivers (50), gardeners (200) and tourists (20) (Figure 2).
 - ✓ Meeting with 2 wards (Huong Long Ward and Kim Long) leaders were carried out to find the potential garden house owners and gardeners for the survey.
 - ✓ The Leader of Youth Union helped to conduct the interview with cyclo drivers who provided information on existing business situation and how the garden house promotion would impact their business.
 - ✓ Tourists were interviewed to obtain their view related to GHG mitigation, garden house promotion and job creation.

2.6 Study area

The research on GHG emission estimation by the urban tourism sector was limited to the administrative boundaries of Chiang Mai municipality in Thailand and of Hue city in Vietnam. For the research on GHG mitigation and decent jobs creation for local people, Three King Monument Square in central Chiang Mai municipality, and Huong Long and Kim Long wards in Hue city were chosen.

The ‘Three Kings Monument Square’ was selected to propose a bicycle route in the inner city of Chiang Mai municipality. This location is connected to major local tourist destinations and development of bicycle route in the area could provide an alternative mode of transport to the various historical places for the visitors, and also ensure jobs for local people.

Huong Long Ward and Kim Long wards were selected to promote garden houses as these wards have the highest percentage of garden houses in Hue city. Moreover, local government is also keen to develop these areas to promote garden houses as cultural heritage and symbol of Hue city. This promotion could also lead to increase in the number of jobs for local people, and to women in particular.

2.7 Activities conducted

The following activities were carried out:

- Meetings and discussion
 - A consultative meeting was organized for the three research partners (AIT, Hue and Chiang Mai) on 11-12 January 2012, who discussed the project objectives and planned activities together in detail. This meeting provided clear guidance and assignment of responsibilities among the research partners to achieve the project goal.
 - Consultation meetings with boundary partners were organized to prioritize the GHG emission reduction in the two cities. (Hue on 17 May 2012 and Chiang Mai on 26 July 2012).
 - City to city visits between the partners were held to share knowledge on low carbon initiatives among the partners (including Sumernet partner Hue University of Sciences). Chiang Mai municipality research partners visited Hue on 28 August 2012 and Hue city partners visited Chiang Mai on 2 October 2012. During these visits, both cities invited their boundary partners to share the research experiences.
 - A consultation meeting with boundary partners and research partners was organized to develop the policies and plans for gender responsive, pro-poor and low carbon based urban tourism on 1-2 October 2012.
 - A final consultation meeting with project partners (AIT, Chiang Mai municipality and Hue city) was held on 26 November 2012 to finalize the research outputs.
- Emission estimation and job creation survey
 - Conducted GHG emissions estimation and analysis from the tourism service providers in the two cities by collecting necessary GHG emissions data related to tourism activities and through inputs from boundary partners of the two cities.
 - Decent and green job opportunities were analyzed through interviews, surveys and consultation with boundary partners
- Dissemination of project activities
 - Project brochures in three languages (English, Thai and Vietnamese) were prepared explaining the project objectives and distributed to the boundary partners to dissemination. A project website was also developed (<http://sut.ait.asia>) to disseminate on going activities of the project.

2.8 Results

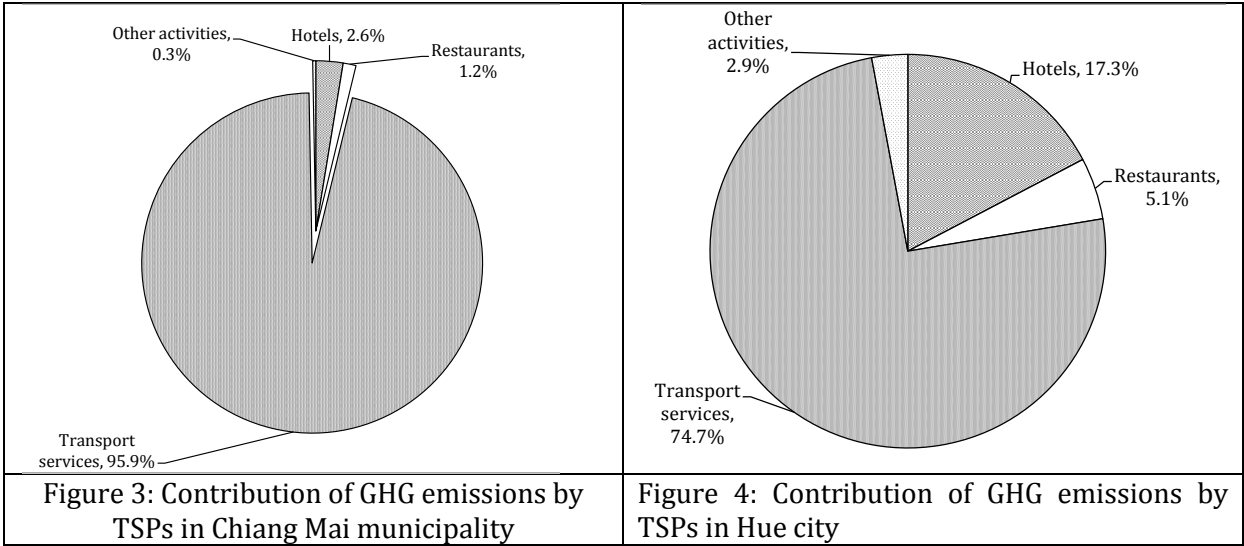
This section provides the results of GHG emission analysis from tourism service providers (TSP), mitigation options while creating decent jobs for local people, and policies to promote recommended mitigation options in Chiang Mai municipality and in Hue city.

2.8.1 GHG emissions

The GHG emission study of tourism activities showed that Chiang Mai municipality emitted around 4,417,500 tons of CO₂ equivalent in the year 2011. The 'transport services' contributed most to the total GHG emission of Chiang Mai tourism sector (96%). The 'hotels' and

'restaurants' had the second and third highest contribution, representing 2.6% and 1.2% respectively, and the 'other activities' accounted for only 0.3% (Figure 3).

Similarly, tourism activities in Hue city emitted around 492,200 ton of CO₂ equivalent in the year 2011. The 'transport services' contributed most to the total GHG emission of Hue tourism sector (75%). The 'hotels' and 'restaurants' contributed 17% and 5% respectively, while 'other activities related to TSP' accounted for only 3% (Figure 4).



The GHG emissions due to tourism sector activities in the 2 cities indicate that GHG emissions from tourism service providers for visitors in Chiang Mia municipality and Hue city were 0.8 and 0.3 tons CO₂ equivalent per capita/year, respectively. The largest proportion of CO₂ emissions from tourism service providers was, as expected, due to transport sub sector. It contributed to 96% of the total emissions in Chiang Mai municipality, and to 75% in Hue city. Approximately 89% and 71% of these emissions from Chiang Mai and Hue, respectively were by air transport alone.

2.8.2 Mitigation options

Non-motorized transport in Chiang Mai municipality

Many Thai and foreign tourists believe that developing NMT would help to promote tourism in Chiang Mai municipality. Thai tourists were willing to travel by cycles, if the city provided good facility/safety for cycling. Foreign tourists were also equally enthusiastic about non-motorized transport (Figure 5 and 6).

Among the business sector, 65% of convenience store owners, 40% of local vendors, and almost all tricycle providers and bicycle shops thought that NMT would benefit them due to increase in the number of visitors around this area. It has also been suggested that 'Three King Monument Square' needs to be declared as a green landmark of the city to promote NMT. This would lead to employment generation opportunities for 12 categories of local businesses, such as bicycle rental shops, bicycle repair shops, bicycle sellers, food shop, beverage shop, souvenirs shop, local tourist guides, local gallery, and local institution and tricycle providers in this location.

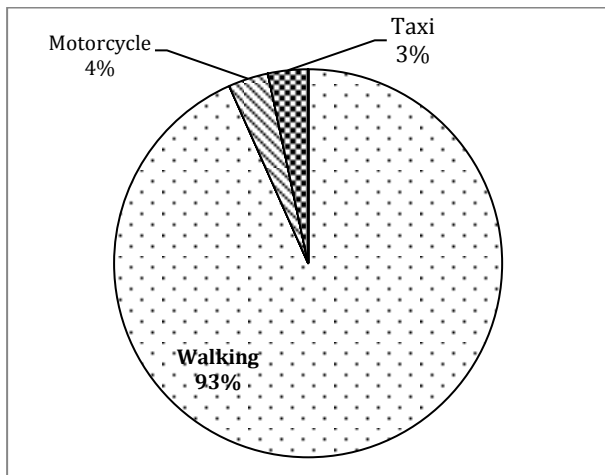


Figure 5: More foreign tourist prefer walking around Chiang Mai moat area

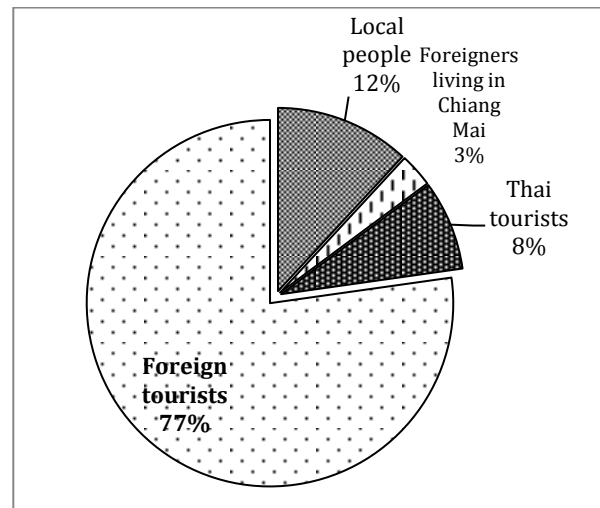


Figure 6: More foreign tourists like to hire bicycle to travel in Chiang Mai municipality

Garden houses in Hue city

The relevance of garden houses to be promoted for green tourism was surveyed amongst local cyclo drivers, gardeners, garden house owners and the tourists. 80% of garden house owners surveyed were willing to develop their houses as tourist attraction, and all the interviewed cyclo drivers and the 200 gardeners were willing to promote garden houses as a local tourist attraction. Similarly, all 10 tourists interviewed were interested to go to places where it was restricted to motorized vehicles.

All the surveyed garden houses generated income by selling vegetables in the local market and in the gardens. Only 18% of the surveyed owners charged visitors while visiting garden houses making them a tourist spot (Figure 7). The average income per month for the garden house owners was about 140 USD, about 125 USD for cyclo drivers and about 145 USD for the gardeners.

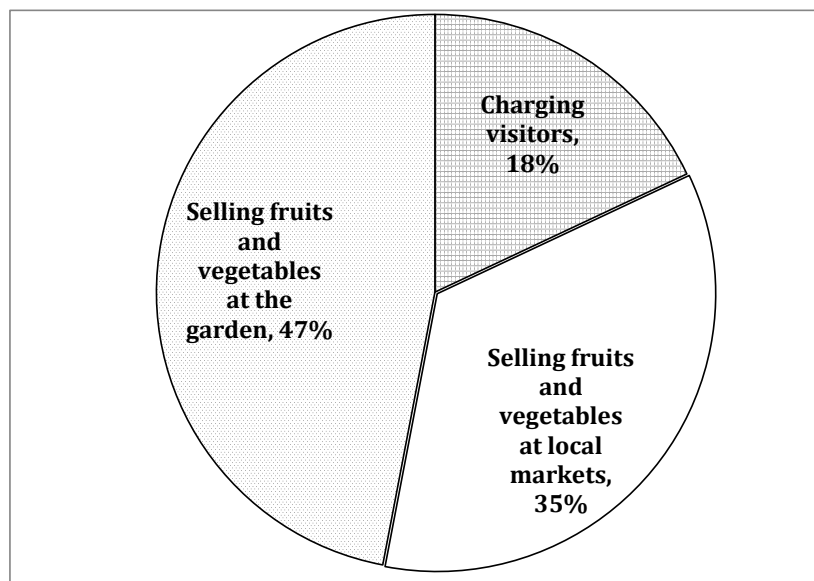


Figure 7: Current modes of income generation from garden houses

No access to motorized vehicles around the garden houses would help cyclo drivers to enhance their income. As 60% of their passengers were tourists and only about 16% of the cyclo-drivers take tourists to the local garden houses, promoting garden houses for tourism would provide them additional income.

2.8.3 Policies to promote NMT and Garden Houses

Based on the inputs from city authorities and literature review, the project partners developed policy briefs for policy makers of the two cities. The policy brief on 'Non-Motorized Transport' was developed for Chiang Mai, while for Hue city, a policy brief was on preservation of 'Garden Houses' for tourism development. A policy statement and the policy brief were presented to the head of respective city authority, namely, the Mayor in Chiang Mai municipality and the Chairman of Hue City People's Committee, for their comment and feedback. Both the city authorities have reviewed and approved the presented policy statements. A third policy brief (regional basis) on 'Non-Motorized Transport in Greater Mekong Sub-Region (GMS)' has also been prepared.

2.9 Discussion

2.9.1 Emission estimation

UNWTO and UNEP (2008) note that tourism sector emitted about 5% of total GHG emission (1,302 Mt CO₂ equivalent), primarily from tourist transport (75%) and accommodation (21%, mainly from air-conditioning and heating systems). Air travel alone covers approximately 40% of tourist transport emission. A globally-averaged tourist journey is estimated to generate 0.25 tons of CO₂ equivalent. Similarly, the tourism GHG emissions in the cities of Chiang Mai (96%) and Hue city (75%) are also clearly dominated by emissions from transport services, with emission from air transport having a major share. The average tourist journey to Chiang Mai and Hue city are estimated to generate 0.8 and 0.3 tons of CO₂ equivalent, respectively. It shows that the tourist journey to Chiang Mai causes higher emissions. This is probably due to the establishment of international airport in Chiang Mai, as tourists can fly direct to Chiang Mai, and there is no emission sharing with other cities, as in the case of Hue. In Hue, tourists first have to travel to Ho Chi Minh or Hanoi or Da Nang city, and then travel to Hue city. Secondly, the majority of visitors stayed longer in Chiang Mai (average 3.6 days) as compared to Hue city (average 2 days). The number of visitors to Chiang Mai is around 3.5 times more as compared to Hue city in the year 2011. Moreover, Chiang Mai has more recreation offerings (spas, massage parlours, night bazaar, night market, Sunday waking street, temples, etc). In Hue, the recreation places (boating in the Perfume River, temples, handicraft markets, etc.) for tourist are less compared to Chiang Mai.

2.9.2 Mitigation options

The mitigation initiatives in the tourism sector will need to strategically focus on the impact of some particular city specific forms of tourism activities, if substantial reductions in CO₂ emissions are to be achieved. It is also obvious that visitors' travel from outside the cities/countries to Chiang Mai municipality and to Hue city emit higher GHG emissions, and the city authorities by themselves do not have control on these activities to reduce the emissions.

To reduce GHG emissions in both the cities, greater emphasis needs to be placed on reducing the emission from transportation sub-sector. Noting that air travel emissions are outside their purview, the stakeholders⁷ consultation identified measures to reduce the emissions by

⁷ Stakeholders in this study refer to the organizations who are the main actors working in the tourism sector in these cities. Based on the GHG inventory (of their city), they prioritized five city specific emission mitigations options. Among these mitigation options they came up with only one option which was accepted by all parties. The stakeholders in Chiang Mai were guide association, provincial

developing 'Non-Motorized Transport' (NMT) in Chiang Mai municipality and promoting 'Garden Houses' in Hue city, which had the potential not only to reduce emissions of the transport sub sector of the tourism industry, but also has the potential to generate jobs, increase income, and provide a much cleaner environment to visitors and locals.

NMT in Chiang Mai municipality

NMT is any form of transportation that uses human energy or animal power for personal or goods mobility by methods other than the combustion motor engine (Adebambo and Yetunde, 2010). It includes walking, bicycling, small wheeled transport, carts, etc., and provides flexible options to mobility. It can also reduce pollution and help in income generation of the poor. The Chiang Mai municipality in consultation with relevant stakeholders proposed the Three King Monument area close to the centre of the old city in Chiang Mai municipality for developing NMT (around 600 meters) which can be connected to other boundary road around the Chiang Mai moat (around 6,000 meters). If municipality promotes NMT in this location, NMT could replace 535,820 – 1,339,550 local vehicle (diesel) km travel per year which could help to reduce 230 – 570 tons of CO₂ equivalent GHG emissions per year, (i.e. reduce up to 0.6% to 1.6% of GHG emissions in tourism transport sub sector) in the tourism transport sub-sector of Chiang Mai municipality.

For the tourists, NMT enhances their recreational opportunities by reducing congestion. Facilitating NMT, particularly walking and cycling, will directly reduce the CO₂ which would have otherwise resulted from their travel in other modes of transportation. Cycling and walking are also access modes for public transport and thus their promotion may lead to increased public transport use. Furthermore, promotion of NMT can deliver important co-benefits such as noise and pollution reduction, and increased health (OECD/ITF, 2009). On the socio-economic side, the restricted motorized transport will provide opportunities for the tourists and others to purchase handicrafts and other goods from local vendors thereby contributing to the local economy. Moreover, it can provide additional income generating opportunities for the cyclo drivers, bicycle shops, and related industries. Nevertheless, the city authority needs to develop parking places for motorized and non-motorized transports at different locations to promote NMT and to avoid the traffic congestion in the city center.

This calls for inclusion of NMT in every step of urban transport policy formulation, investment and decisions. Based on other literatures on NMT (Pendakur, 2000; EEA, 2008; OECD/ITF, 2009) few important measures can be identified which could be incorporated into the design and development of NMT in Chiang Mai.

- Detailed traffic modeling exercise prior to scheme implementation should be undertaken to aid the identification of appropriate scheme boundaries, traffic displacement issues and potential areas that would benefit from mitigation measures.
- NMT should be developed within the framework of total cost accounting including all external costs and considerations for the poor.
- Any NMT measures to be proposed by the city should be in line with the broader national and provincial transport policy and should provide opportunities for economic growth and employment generation.
- Aspects such as safety concerns of the pedestrian and non-motorized vehicle owners, construction of segregated lanes, parking of non-motorized vehicles, control on the activities of street vendors and ensuring smooth flow of NMT traffic are fundamental.

tourism and sport, tourism business association, restaurant club, Hugchiangmai organization, media, Chiang Mai University and Chiang Mai Rajabhat University, while the stakeholders in Hue city were youth union, tricycle group, garden houses owner, Hue University, and media.

Garden Houses in Hue City

For the tourists to Hue, garden houses offer serene nature along with the local traditional touch, and a place for relaxation within the city limits. More importantly, garden houses help in GHG emissions mitigation by acting as a carbon sink and by lessening the amount of wastes going to landfill by managing the household wastes through composting or as animal feed. At the city scale, the garden house can help reduce GHG emissions from freights involving import of fruits and vegetables to Hue city by producing them for the household consumption and sale, and by restricting motorized vehicles around the garden houses and promoting cyclo drivers as transport mode for the visitors.

Thua Thien Hue Provincial Department of Culture, Sports and Tourism estimated that if Hue city authority promotes garden houses in the city, it could attract 20-40% more visitors. At the same time, if the city authority and garden house association encourage visitors to use cyclo or bicycle to travel to garden houses, it could replace 128,000– 256,000 local vehicles (petrol) km travel per year which could help to reduce 100 – 200 tons of CO₂ equivalent GHG emissions per year, (i.e. reduce up to 4% to 9% of GHG emissions in tourism transport sub sector) in the tourism transport sub-sector of Hue city. The promotion of garden house also helps in income generation for the owners and garden workers from the sale of garden products such as fruits and vegetables. In addition, by restricting motorized vehicles around the garden houses, additional income generating activities to the cyclo drivers and street vendors could be provided.

Creating garden house that are more sustainable requires interventions at different scales and with different stakeholders. Based on survey, high development costs but low returns, low demand, lack of essential skills and dominance of mass tourism operators are some of the barriers in the promotion of garden houses as local tourist attraction in Hue City. The increasing dependence on and support for garden house tourism is based upon a number of perceived benefits it potentially provides and certainly as a vehicle of economic growth and diversification, tourism can make an important contribution both at the level of garden house owners or more widely in the local economy.

This calls for a dedicated financial and technical support, if garden houses in Hue are to play an effective role in low carbon tourism and local socio economic development. Based on literatures on home garden, few important measures (Marsh, 1998; Lane, 2004) can be identified which could be incorporated into the design, restoration and preservation of garden houses in Hue city.

- The opportunities inside the garden for recycling household wastes for productive purposes (e.g. fertilizers, manures) needs to be utilized
- Technologies and species appropriate for local needs and resources, which include cost, risk, labour requirements, cultural preferences and market needs should be promoted
- The existing local policy on garden house needs to be reviewed and effectively implemented
- A combined package of visiting garden house and other recreation activity of the tourist should be introduced in coordination with tourism enterprises and other stakeholders.
- Additional income generation to the cyclo drivers through the provision of NMT around the garden houses should be considered while designing any projects, plans or policies involving garden houses.

2.10 Conclusion

The tourism sector is one of the import economic sectors contributing to the local economy of Chiang Mai municipality and of Hue city. Both cities have largely invested in infrastructure development to promote the tourism industry. Visitors, both domestic and foreign, are able to travel to these cities easily because of good road networks between the other big cities, and establishment of international/domestic airports close to the city location. Due to the higher

number of visitors, both cities also generate GHG emissions. The GHG emission analysis showed that the transport sub-sector generated the largest proportion of CO₂ emissions, equivalent to 96% in Chiang Mai municipality and 89 % in Hue city. Furthermore, 89% of these emission in Chiang Mai municipality and 71% in Hue city were caused by air transport alone in the year 2011. Emissions from building and infrastructure and other materials used were low compared to transport sub-sector emissions.

On the basis of GHG emissions inventory, the cities in consultation with their stakeholder came up with set of emission reduction strategies, and selected city specific mitigation options that also support the existing government policy related to tourism sector. Chiang Mai municipality and Hue city have identified strategies to implement 'Non-Motorized Transport' (NMT) and promote 'Garden Houses', respectively. Implementation of these mitigation strategies in the cities can not only reduce emissions of GHG gases but also create opportunities for income generation to the local people. The research results were utilized to development policy recommendation for climate compatible urban sustainable tourism development in both cities, and submitted to each concerned city authority for further consideration.

2.11 Recommendations for future research

The tourism service providers only working inside the administrative boundary of Chiang Mai municipality and Hue city were considered for the GHG emission analysis. This research did not cover more tourism entities' activities for data collection. In addition, the recreation activity for visitors such as zoo, shopping center, night market, golf courses, temples, karaoke bars and massage parlours could not be included in the study. So future research should incorporate collecting data from other tourism entities' and also include recreation activities for GHG emission estimation and analysis in both cities.

The Bilan Carbone® tool, developed by the ADEME, was used to calculate GHG emissions, where IPCC based emission factors are used. However, city specific emission factors are required to obtain accurate GHG emissions.

By consulting with boundary partners on GHG emission inventory both cities identified the GHG emission mitigation options. They suggested 'Non-Motorized Transport' (NMT) development in Chiang Mai municipality and 'Garden Houses' promotion in Hue city, which has the potential not only to reduce emissions of the transport sub sector of the tourism industry, but also to generate jobs, increase income, and provide a much cleaner environment to visitors and locals. Field survey to assess the suitability of the recommended mitigation options were conducted in small areas, namely 'Three King Monument Square' in Chiang Mai municipality and Huong Long and Kim Long wards in Hue city. If large scale application is needed, more detailed (and area wise) survey may be needed.

Chapter3: Outcomes and impact

This section discusses the impact of the project in terms of its outputs and outcomes. The Logical Framework Approach (LFA) was used at the proposal formation stage for designing the project and preparing its activities. This help to reflect now the real impact of the project in terms of its outputs and outcomes.

Tables 2 and 4 provide a comprehensive overview of outcome and impact of the project in Chiang Mai municipality and in Hue city, respectively. It evaluates the impact on boundary partners by comparing with the progress markers earlier set for each of all project boundary partners that are given below:

1. Media

Progress markers set for media in the project proposal were:

- **Expect to** see publishing outputs of project activities
- **Like to** see publish additional information/reports on GHG emission and its mitigation, green and decent jobs
- **Love to** see creating platform for discussion and increase awareness

2. Private sector

Progress markers set for private sector in the project proposal were:

- **Expect to** see providing inputs for the project activities
- **Like to** see high involvement in achieving the project outputs on GHG emission mitigation, green & decent job creation and gender equality
- **Love to** see implementing various GHG emission mitigation initiatives and promoting green and decent jobs in the tourism sector

3. Government body

Progress markers set for government bodies in the project proposal were:

- **Expect to** see providing inputs for the project activities
- **Like to** see high involvement in achieving the project outputs on GHG mitigation, green consumption & production, job creation and gender equality
- **Love to** see implementing various GHG mitigation initiatives and promoting green & decent jobs in the tourism sector

4. Non-governmental organization (NGO)

Progress markers set for non-government organizations in the project proposal were:

- **Expect to** see providing inputs for the project activities
- **Like to** see high involvement in achieving the project outputs on GHG emission mitigation
- **Love to** see the groups advocate, implement and promote GHG emission mitigation, green & decent jobs and gender equality in tourism sector

The specific results and tangible products/ outputs produced though the involvement of boundary partners or though their activities are listed as 'outputs'. Measurable parameters that can be used to check whether or not expected results have been achieved are listed as 'indicators' and the methods/ sources that can be used to check the conformity/ availability of the indicators are listed as 'means of verification'. The 'outcomes' include the ultimate goal/ purpose of the project which would be realized in longer term after the successful completion of the project.

Chiang Mai municipality: The following boundary-partners were mentioned in the proposal: Journalist Association of Chiang Mai (media), Chiang Mai Tourist Business Associations (private sector), Chiang Mai Restaurant Club (private sector), Chiang Mai Guide Association (private sector), The Thai Northern Hotel Association (private sector), Tourism Authority of Thailand (Government body), Chiang Mai Provincial Office (Government body), Hugchiangmai Group (NGO), Chiang Mai Friends (NGO), Chiang Mai Cycling Group (NGO).

The Chiang Mai Restaurant Club, the Chiang Mai Cycling Group and the Chiang Mai Friends did not attend any of the meetings organized, through the Chiang Mai Restaurant Club contributed to the outcome of the project, and is therefore included in the LFA.

Some boundary partners, who were not mentioned in the proposal, also joined the project (meeting) voluntarily. Those boundary-partners are referred to as unanticipated outcomes. Those boundary partners are: Regional and Environment office Chiang Mai province (Government body), Chiang Mai Art and Culture Center (private sector), Chiang Mai Sunday walking street (private sector), Fuenban Yan Vieng Chiang Mai club (NGO), Chiang Mai University (CMU) (academic institute), Chiang Mai Rashapath University (CMRU) (academic institute). Table 3 provides an overview of unanticipated the outcome and impact of the project to the boundary partners, in Chiang Mai municipality.

1. Media

The media boundary partner from Chiang Mai municipality was the Journalist Association of Chiang Mai (JACM) which has around 30 media and journal companies. It represents a platform for companies to initiate promotion campaigns including several types of media, such as articles, newspapers, TV and web. The manner in which the JACM had met the progress markers are listed below:

- The JACM disseminated project results through local media.
- Distributed of project information on websites, available at <http://sut.ait.asia> and www.cmcity.qc.th
- Suggested a project fact-sheet of the Chiang Mai Municipality at the boundary-partner meeting
- Distributed of 300 project brochures

Assessment:

The Journalist Association of Chiang Mai met the expected outcomes but did not publish additional information/reports and were not able to create a platform for discussion, which could have increased public awareness. In general, the outputs can be graded as good. During the whole project time frame, the cooperation was good.

2. Private Sector

a. Chiang Mai Tourist Business Associations (CMBA)

One of the private sector boundary partners from Chiang Mai was the Chiang Mai Tourist Business Association (CMBA) has more than 100 members. The association consists of many companies related to the tourism sector such as spas, travel agencies, golf clubs, and selected airlines, hotels and restaurants. The function of the CMBA covers several fields, and one aspect is to promote policies and action plans among business members.

The manner in which the CMBA had met the progress markers are listed below:

CMBA contributed to emission estimation of the tourism sector in Chiang Mai due to following activities:

- Provided data for Bilan Carbone-Analysis
- Suggested spa-shops as a sample group for data collecting

CMBA contributed to green and decent jobs creation in member companies due to following activities:

- Provided job opportunities by selling organic local products to spa-shops

CMBA contributed to the policy to mitigate GHG emissions and created green jobs due to following activities:

- Suggested the promotion of local products for spas to reduce the GHG emissions

CMBA contributed to public awareness on GHG emissions by following activities:

- Set up training and workshop every month
- Suggested CM Go Green as a promotional campaign
- Distributing 300 project brochures in different companies
- Published fact-sheet about the program and distributed in companies (100)

Assessment:

The Chiang Mai Business Association contributed to every output. High involvement was seen when providing suggestions for job opportunities and distributing more than 300 project brochures. It even met “love to see” project markers by setting up training and workshops. In general, the outputs can be graded as very good. Initially, the cooperation was weak but it improved during the process.

b. Chiang Mai Restaurant Club (CMRC)

One of the private sector boundary partners from Chiang Mai was the Chiang Mai Restaurant Club which is an amalgamation of around 100 restaurants of Chiang Mai, including small, medium and big size restaurants. The Club aims to promote local food and sets campaigns periodically.

The manner in which the CMBA had met the progress markers are listed below:

CMRC contributed to emission estimation of the tourism sector in Chiang Mai by following activities:

- Provided data for Bilan Carbone analysis and G&D jobs
- Suggested restaurants as a sample group for data collecting

CMRC contributed to green and decent job creation in member companies by following activity:

- Suggested green farms and the reuse of organic waste as animal food as a job creation opportunity

CMRC contributed to public awareness on GHG emissions by following activities:

- Distributed 300 project brochures in different restaurants

CMRC published documents:

- Publication of brochure about their annual meeting

Assessment:

The Chiang Mai Restaurant Club did not attend meetings but still contributed to the expected outputs, such as providing data and giving suggestions for GHG mitigation and job creation. In general, the outputs can be graded as acceptable. As the Club did not join the meetings, so the cooperation was weak.

c. Chiang Mai Guide Association (CMGA)

One of the private sector boundary partners from Chiang Mai was the Chiang Mai Guide Association (CMGA) which is an amalgamation of about 30 tourism agencies. Its function is to assist business problems in terms of exchanging information and offering solutions. The Association also promotes Guides in Chiang Mai. The CMGA hopes to increase the number of Guides as a green job opportunity.

The manner in which the CMGA had met the progress markers are listed below:

CMGA contributed to emission estimation of the tourism sector in Chiang Mai by following activities:

- Provided data for Bilan Carbone-Analysis and G&D jobs
- Suggested restaurants as a sample group for data collecting

CMGA contributed to green and decent job creation in member companies by following activities:

- Suggested cooperation between bicycle-rental-shops and tricycles

CMGA contributed to policy to promote guide service for GHG emission mitigation and creation of green jobs by following activities:

- Suggested a guided city-bicycle-tour for visitor

CMGA contributed to awareness on GHG emissions by following activities:

- Convinced associated members to reduce GHG emissions, such as using green vehicles for messenger service
- Distributed 300 project brochures in the association

Assessment:

The CMGA met all expected outcomes and took effort to convince association members as a “love to see” output. In general, the outputs can be graded as good. Initially, the cooperation was weak but improved over time.

d. The Thai Northern Hotel Association

One of the private sector boundary partners from Chiang Mai was the Thai Northern Hotel Association (TNHA) which is an amalgamation of around 50 Hotels in Chiang Mai. Members cooperate to set road maps and cooperate with airlines, TAT and the Chiang Mai Guide Association to offer special promotion packages. Road maps are held all around Thailand, especially in Bangkok. The Association also sets up special events, such as bartender and roommate competitions between Hotels.

The manner in which the TNHA had met the progress markers are listed below:

TNHA contributed to green and decent job creation in the hotel industry by following activities:

- Provided data for Bilan Carbone-Analysis and G&D jobs

TNHA contributed to policy to promote green hotels and related jobs as a GHG-emission mitigation option by following activities:

- Suggested 3R policy and energy efficiency measures

TNHA contributed to member awareness on GHG emissions by following activities:

- Distributed of 300 project brochures to association members
- Convinced associated members to reduce GHG emissions

Assessment:

The Thai Northern Hotel Association met most of the expected outputs and took additional effort to convince association members to reduce GHG-emissions. In general, the outputs can be graded as good. The cooperation was good throughout the project duration.

e. Chiang Mai Art and Culture Center

One of the private sector boundary partners from Chiang Mai was the Chiang Mai Art and Culture Center (CMACC) which shows pieces of former Chiang Mai culture and explains the development and foundation of the city. Moreover, it gives the viewer an inside view on the tradition of the Lanna culture.

Due to the project, the museum hopes to revive old traditions that have been lost during modernization. The CMACC was an unanticipated boundary partner. However, it had met the progress markers that are listed below:

CMACC contributed to policy to promote bicycle usage in Chiang Mai by following activities:

- Suggested NMT area in the inner city of Chiang Mai
- Carried out policy to conserve traditional art and culture by cooperating with Fuenban Yan Vieng Chaing Mai Club

CMACC contributed to public awareness on GHG emissions by following activities:

- Distributed of 300 project brochures to visitors

CMACC published documents:

- Publication of own brochure to promote traditional culture

Assessment:

It did not provide data but gave policy suggestions and carried out the policy for Fuenban Yan Vieng Chiang Mai Club. Therefore, outputs can be graded as very good. The cooperation was excellent.

f. Chiang Mai Sunday Walking Street Club

One of the private sector boundary partners from Chiang Mai was the Chiang Mai Sunday Walking Street Club (SWSC) which consists of 350 members. Most of them are street vendors at the Sunday walking street. Its main function is to set an area for selling local products and establishing regulations for vendors. The Chiang Mai SWSC hopes to get political involvement and a platform to promote activities. The Chiang Mai Sunday Walking Street Club was an unanticipated boundary partner. However, it had met the progress markers that are listed below:

SWSC contributed to green and decent job creation related to local products and handcrafts by conducting following activities:

- Set up a space for all vendors from the community

SWSC contributed to the policy to promote GHG emission mitigation and environment protection by conducting following activities:

- Promoted of no Styrofoam containers
- Carried out a campaign to energy efficient lights

SWSC contributed to public awareness on GHG emissions by conducting following activities:

- Developed poster related to GHG emissions reduction
- Set up a meeting to arrange the Sunday Walking Street Area and disseminating information to vendors
- Distributed of 300 project brochures for members

Assessment:

Nevertheless, these activities contributed to the outcome of the project in general. Therefore, outputs can be graded as excellent. The cooperation was excellent during the whole project phase (there has been cooperation experience also before the project)

3. Government body

a. Tourism Authority of Thailand, Chiang Mai Office

One of the government sector boundary partners from Chiang Mai was the Tourism Authority of Thailand (TAT). It cooperates with many local tourism organizations. Its function is to promote Chiang Mai as touristic destination in general and on a national level.

The manner in which the TAT had met the progress markers are listed below:

TAT contributed to the policy to promote GHG emission mitigation and creation of green jobs for tourism providers by following activities:

- Suggested to improve the quality of tourism service providers
- Carried out a policy called 7 greens to save the environment

TAT contributed to public awareness on GHG emissions by following activities:

- Distributed 300 project brochures to the public

TAT published documents:

- Publication of brochure that promotes Chiang Mai as the leading tourist destination in Thailand

Assessment:

The Tourism Authority of Thailand contributed to the outcome of the project by conducting many “love to see” activities. In general, the outputs can be graded as very good. The cooperation from TAT was improved from good to excellent during the project.

b. Chiang Mai Provincial Office of Tourism and Sports

Like TAT the Chiang Mai Provincial Office for Tourism and Sports (CMPTS) focuses on the tourism promotion of Chiang Mai by taking cooperation from many organizations. However, this office is especially responsible for Chiang Mai Municipality only.

The manner in which the CMPTS had met the progress markers are listed below:
CMPTS contributed to policy to promote GHG emission mitigation and creation of green jobs to tourism service providers by following activities:

- Suggested community tourism for Chiang Mai
- Carried out policy to promote environment friendly products and services

CMPTS contributed to public awareness on GHG emissions by following activities:

- Conducted meetings for tourism service providers
- Distributed 300 project brochures
- Distributed 4,500 own brochures to promote tourism activities in Chiang Mai municipality

CMPTS published documents:

- Published own brochure on green tourism and community traveling

Assessment:

The Chiang Mai Provincial Office carries out an own policy, conducts meetings and distributed around 4,500 brochures. These were not expected during the project. Therefore, outputs can be graded as excellent. Cooperation improved from good to excellent

c. Regional and Environment office Chiang Mai Province

One of the government sector boundary partners from Chiang Mai was the Regional and Environmental Office (RECM) which look after environment monitoring and observation. Its general function is to inform about local environment (possible threats or issues). It was an unanticipated boundary partner that involved in the project activities. However, it had met the progress markers that are listed below:

RECM contributed to policy to promote GHG emission reduction by following activities:

- Participated in boundary partner meeting and provided suggestions to develop policy related to sustainable urban tourism development

RECM contributed to public awareness on GHG emissions by following activities:

- Conducted meetings concerning GHG emissions for all members of the organization
- Distributed 100 project brochures

RECM published documents:

- Developed own brochure to create awareness on environment

Assessment:

Besides expected outputs like spreading information, it also conducted meetings and developed its own brochure to promote environmental friendly activities in the city. In general, the output can be graded as very good. Initially, cooperation was weak but improved over time.

4. Non-governmental organizations (NGO)

a. Hugchiangmai Group

One of the non-government boundary partners from Chiang Mai was the Hugchiangmai Group (HG). It is a voluntary organization that aims to conserve environment and traditions of the Lanna culture. The members of this organization are local people who want to take action and

get involved in political decision-making process. Furthermore, the group promotes the unique culture of Chiang Mai as a value.

The manner in which the HG had met the progress markers are listed below:

The HugChiangMai group hopes to get political involvement and a platform to promote and discuss activities.

HG contributed to green and decent job creation in the community by following activities:

- Cooperated with other organizations by attending meetings related to environment conservation

HG contributed to the policy to promote handmade products and preserve environment by following activities:

- Suggested to use bikes in the inner city of Chiang Mai

HG contributed to public awareness on GHG emissions by following activities:

- Participated in other meeting, such as meetings organized by Keaw Suy Home
- Distributed 300 project brochures among the group members

Assessment:

The HugChiangMai Group contributed to expected outputs and participated in additional meetings for public awareness. However, there was not much high integration in the project. In general the outputs can be graded as acceptable. Initially, cooperation was weak but improved over time.

b. FuenBan Yan Vieng Chiang Mai Club

FuenBan Yan Vieng Chiang Mai Club (translation) is a voluntary organization, which members want to preserve old buildings and facilities. Its function is to refresh old tradition and promote traditional facilities as something valuable. It was an unanticipated boundary partner that involved in the project activities. However, it had met the progress markers that are listed below:

Due to the project, the Club expected to promote their objectives and achieve political involvement.

FYV contributed to green and decent job creation related to handicrafts by following activities:

- Suggested job opportunities, such as making candles and lanterns

FYV contributed to develop policy to promote walking and cycling in the community of Chiang Mai by following activities:

- Carried out policy by producing and distributing cycling road maps

FYV contributed to public awareness on GHG emissions by following activities:

- Distributed 100 project brochures

FYV published documents:

- Publication of own brochures about different topics concerning traditional culture and life-style

Assessment:

Besides giving suggestions as expected, it also published its own brochure. Therefore, output can be graded as excellent. Initially, cooperation was poor but improved to excellent cooperation during the project phase.

5. Academic institute:

Academic institutes were not anticipated to join the project. Therefore, there were not any project markers in the project proposal. However, two academic institutes were involved during the project period. They had met the progress markers that are listed below:

a. Chiang Mai University (CMU) (unanticipated)

Students and lecturers from Chiang Mai University Civil Engineering Faculty attended the first boundary partner meeting held on July 26, 2012 at Kantary Hills Hotel in Chiang Mai.

Participants of CMU hoped to gain new knowledge and information on project and other activities of Chiang Mai municipality. It had met the progress markers that are listed below:

CMU contributed to emission estimation of the tourism sector in Chiang Mai by following activities:

- Provided data for Bilan Carbone analysis and G&D jobs

Lecturer from CMU organized the meeting and assisted the project manager by following:

- Prepared documents for the meeting, such as Power-Point presentation

Assessment:

The integration of academic institutes can promote and steer interest to students who study related subjects. However, there was not any additional integration in the project. Cooperation was good during the whole project phase.

b. Chiang Mai Rashapath University (CMRU) (unanticipated)

Students and lecturer from Chiang Mai Rashapath University, Faculty of Environmental Engineering attended the second boundary partner meeting held on the 1st October 2012 at Kantary Hills Hotel, Chiang Mai.

Participants of CMRU hoped to gain new knowledge and an idea of what is going on in Chiang Mai municipality.

CMRU contributed to public awareness on GHG emissions by conducting following activities:

- Developed posters to disseminate knowledge on environment protection

Assessment:

The integration of academic institutes can promote and steer interest to students who study related subjects. However, there was not additional integration in the project. Initially, cooperation improved from weak to excellent cooperation during the project phase.

Table 2: Overview of the outcome and impact of the boundary partners in Chiang Mai municipality, Thailand

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
1. Journalist Association of Chiang Mai (media)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Disseminated project activities through local media	Attended meeting on 26 July 2012 and on 1 Oct. 2012	One representative participated in the meeting	List of participants Minutes of meetings
	2. Planned activities in place to creating more green jobs for women and men in low income groups		Dissemination of project information on website	http://sut.ait.asia; www.cmcity.go.th; CMM Magazine	http://sut.ait.asia; www.cmcity.go.th; CMM Magazine Press release
			Provided suggestions;	Fact sheet for project of CMM	Publications
			Distribution of project brochures	Around 300 copies	
2. Chiang Mai Tourist Business Associations (private sector)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Quantified GHG emission estimation of the tourism service providers in CMM (economical effect)	Attended meeting on 26 July 2012 and on 1 Oct. 2012	Participated in the meeting on 26 July 2012	List of participants Minutes of meetings
			Provided data for Bilan Carbone-analyses	Data from 12 spa shops	GHG emissions analysis report
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Green and decent job creation in member-companies	Suggested sample group for data collection	Suggested spa shops for job creation	Report
			Provided job opportunities	Suggested organic-local products for spas in CMM Promoted local	

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
				products for Spas	
		Policy to promote GHG emission mitigation and creation of green jobs	Provided suggestions on policy		Minutes of the consultation meeting on 1 Oct. 2012
		Dissemination of project activities on GHG emissions and mitigation	Set up training and workshop for association members	Monthly meeting	organization investigation
			Gave suggestions on increasing public awareness	CM 'Go Green'	
			Distributed project brochure	Around 300 copies	
			Published fact-sheet	Around 100 copies	
3. Chiang Mai Restaurant Club (private sector)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Quantified GHG emission estimation of restaurants in Chiang Mai	Members of the club provided data for Bilan-Carbon-analyses	Suggested 12 restaurants as sample sites	GHG emissions analysis report
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Created green and decent job in restaurants and related industry	Suggested job opportunities	Suggested green farms and the reuse of organic waste as animal food	
		Dissemination of project activities	Distributed project-brochures	Around 300 copies	Publications

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
4. Chiang Mai Guide Association (private sector)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Quantified GHG emission estimation of travel agencies in Chiang Mai	Attended meetings on 26 July 2012 and on 1 Oct. 2012	One representative participated in the meeting	List of participants Minutes of meetings
			Provided data for GHG emission analysis	Data for Bilan Carbone-Tools	GHG emissions analysis report
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Guided as a green and decent job creation	Suggested sample group for data collecting	Green & decent jobs survey from each member of association	The employment assessment Report
			Suggested cooperation bicycle-rent-shops and tricycles	Cooperation between guides and hotels, bike-rental-shops and tricycles	The employment assessment Report
		Policy to promote guide-service as a GHG emission mitigation and green job creation	Provided suggestions for policy	Created a city-tour route that uses only for bicycles	Field visit report
		Awareness on GHG emissions and mitigation	Convinced association-members to reduce GHG-emissions	Use green vehicles for the messenger service in Companies	Field visit report
	Distributed project-brochure		Around 300 copies		
	5. The Thai Northern Hotel Association (private sector)	1. Planned activities in place to reduce GHG emission intensity	Quantified GHG emission estimation of hotels in Chiang Mai	Attended meeting on 26 July 2012 and on 1 Oct. 2012	One representative participated in the meeting

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
	in the urban tourism sector		Members of the Chiang Mai Guide Association provided data for Bilan Carbone and job-creation analyzes	Data for Bilan Carbone-Tool	GHG emissions analysis report
			Suggested a sample group for data collection	36 hotels with three categories	GHG emissions analysis report
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Green and decent job creation in the hotel industry	Conducted green service and products from outsource/ Suggested job opportunities	Green & decent job data	The employment assessment Report
		Policy to promote green hotels and jobs as a GHG emission mitigation option	Provided suggestions for policy	3R policy and energy efficiency	Minutes of the consultation meeting on 1 Oct. 2012
		Awareness on GHG emissions and mitigation	Convinced association-members to reduce GHG-emissions	Provided information during the consultation meeting held on 1 Oct. 2012	Minutes of meetings
Distributed project-brochures	Around 300 copies		Publications number		
6. Tourism Authority of Thailand, Chiang Mai Office (Government body)	1. Planned activities in place to reduce GHG emission intensity in the urban		Attended meeting on 26 July 2012 and on 1 Oct. 2012	One representative participated in the meeting	List of participants Minutes of meetings

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
	tourism sector				
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Policy to promote GHG emission mitigation and creation of green jobs to tourism service providers	Provided suggestions for policy on 1 Oct. 2012	Provided information during consultation meeting held on 1 Oct. 2012	Minutes of meetings
		Public Awareness on GHG emissions and mitigations	Distributed brochures to the public	Around 300	Brochure publication
		Dissemination for tourism promotion in CMM	Published brochures	Promote CM as a leading tourist destination in THA	Brochure publication
7. Chiang Mai Provincial Office of Tourism and Sports (Government body)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Policy to promote GHG emission mitigation and creation of green jobs to tourism service providers	Attended meeting on 26 July 2012 and on 1 Oct. 2012	One representative participated in the meeting	List of participants Minutes of meetings
			Distributed project-brochures	Around 300 copies	Brochure publication
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Public Awareness on GHG emissions and mitigations	Distributed own-brochures	Around 4,500 copies	http://www.cm-mots.com/contact/index.html

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
8. Hugchiangmai Group (NGO)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Creation of green and decent jobs in the community (hand-made-products)	Attended meeting on 26 July 2012 and on 1 Oct. 2012	One representative participated in the meeting	List of participants Minutes of meetings
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Policy to promote hand-made-products and preserve environment	Provided suggestions	Use bikes in the inner city of CM	Minutes of meetings
		Enhanced collaboration among private sectors	Participated in other organization's meetings	Keaw Suy Home	List of participant or direct contact
		Public Awareness on GHG emissions and mitigations	Distributed project-brochures	Around 300 copies	Brochure publication

Table 3: Overview of the unanticipated outcome and impact of the boundary partners in Chiang Mai municipality, Thailand

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
1. Chiang Mai University (CMU)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Quantified GHG emission estimation of the tourism sector in Chiang Mai	Attended meeting on 26 July 2012 and 1 Oct. 2012	Participated in meeting	List of participants Minutes of meetings
			Provided secondary data for Bilan Carbone analyses	Data related to emission	GHG emissions analysis report
		Capacity building on project management	Assisted for meetings	2 representatives involved	List of participants Photographs
2. Regional and Environment office Chiang Mai province	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Policy to promote GHG emission reduction	Attended meeting on 1 Oct. 2012	Participated in meeting	List of participants Minutes of meetings
	2. Planned activities in place to creating more green jobs for women and men in low income groups	Public Awareness and capacity building on GHG emissions	Distributed project brochure	Around 100 copies	
3. Chiang Mai art and culture center	2. Planned activities in place to creating more green jobs for women and men in low income groups	Policy to promote bicycle usage in Chiang Mai	Attended meeting on 1 Oct. 2012	Participated in meeting	List of participants Minutes of meetings
			Carry out policy	Cooperation with Fuenban Yan Vieng Chiang Mai Club	Minutes of meetings

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
		Public Awareness and capacity building on GHG emissions	Distributed project-brochures Developed own brochure	Around 300 copies	
4. Fuenban Yan Vieng Chiang Mai club (NGO)	2. Planned activities in place to creating more green jobs for women and men in low income groups	Green and decent job creation related to handcrafts	Attended meeting on 1 Oct. 2012	Participated in meeting	List of participants Minutes of meetings
			Suggested job opportunities	Production of candles and lanterns	
		Policy to promote walking, cycling in the community of Chiang Mai	Carry out policy	Production of cycling map	
		Public Awareness on GHG emissions and mitigations	Distributed project-brochures	Around 100 copies	
			Production of own brochure		
5. Chiang Mai Sunday walking street (representative)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector		Attended meeting on 1 Oct. 2012	Participated in meeting	List of participants Minutes of meetings
		Green and decent job creation related to local products and handcrafts	Setting up space for all vendors from the community	30 000 to 50 000 visitors per day (Sunday only)	Site visit
	Policy to promote GHG emission mitigation and environment protection		Promotion of No Styrofoam containers		Site visit

Boundary Partner	Outcome	Outputs	Activities	Indicators	Verification
			Carried out campaign to use low-electricity-light	Changed electric efficient bulbs (8 Watt instead of 60 Watt)	Site visit
		Public Awareness campaign on GHG emissions	Developed posters		
			Distributed project brochures	Around 300 copies	
		Enhanced collaboration among private sectors	Set up meetings with vendors	Arranged Sunday walking street area and providing information for vendors	
6. Chiang Mai Rajabhat University (CMRU)	1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector	Public Awareness on GHG emissions and mitigation	Attended meeting on 26 July 2012 and 1 Oct. 2012	Participated in meeting	List of participants
			Developed posters (environmental science)		Minutes of meetings

Hue city: The following boundary partners were mentioned in the proposal:

Hue Local Newspaper (Thua Thien Hue Daily News), Association of Hotel Business, Bao Minh Travel Company, Association of Entrepreneurs, Green Travel JSC (an enterprise, owning a four-star hotel, a green restaurant and a tour operator), Vietnam Institute of Culture and Arts Studies in Hue under the Ministry of Culture, Sports and Tourism; Hue Union of Women and Center for Self Reliance Enrichment (Micro finance)

The Bao Minh Travel Company, the Green Travel JSC, Vietnam Institute of Culture and Arts Studies in Hue under the Ministry of Culture, Sports and Tourism did not attend any meeting. Therefore, these organizations are not included in the LFA.

1. Media

The media boundary partner from Hue city was the Hue Local Newspaper. The Hue Local Newspaper disseminated project activities through local media. The media conducted the following activities: News on boundary partner meeting was disseminated in at least 5 different medias which included: Thua Thien Daily newspaper, Net Codo, TRT website, Media fun, YouTube and also uploaded in project website: <http://sut.ait.asia>

Assessment:

The Hue Local Newspaper met the expected output increased public awareness on GHG emission and mitigation in Hue city. During the whole project period the cooperation was good.

2. Private Sector

One of the private sectors from Hue City was Association of Hotel Business (AHB). The manner in which the AHB had met the progress markers are listed below:

- Provided data for the GHG emission estimation from the hotel businesses
- Disseminated of brochures on the environmental friendly practices to the tourists
- Practice environmental friendly actions, such as efficient waste management and efficient lighting

Assessment:

- The Association of Hotel Business contributed to every output that was expected. High involvement was seen when providing suggestions for job opportunities.

One of the private sectors from Hue City was Association of Entrepreneurs (AE). The manner in which the AE had met the progress markers are listed below:

- Participated in the boundary partner meetings conducted during May and Aug (2012)
- Provided suggestion related tourism to develop policies and plans to achieve GHG mitigation and creation of decent work

Assessment:

- The Association of Entrepreneurs contributed to every output that was expected. High involvement was seen when providing suggestions for job opportunities.

3. Government body

The government body boundary partner from Hue city was Hue Union of Women (HUW). The manner in which the HUW had met the progress markers are listed below:

- Participated in the boundary partner meetings conducted during May (2012)
- Provided suggestion related tourism to develop policies and plans to achieve GHG mitigation and creation of decent work

Assessment:

- High involvement was seen when providing suggestions for job opportunities.

4. Non-governmental-organization (NGO)

The non-governmental organization boundary partner from Hue city was Center for Encouragement of Self Reliance (ESR). The manner in which the ESR had met the progress markers are listed below:

- Participated & contributed to formulate strategies towards GHG mitigation and job creation, during the boundary partner meetings held during May and August (2012)
- Around 100 garden houses were given small startup loans for conducting small businesses
- Disseminated project brochures

Assessment:

- High involvement was observed when providing suggestions for job opportunities. So the project love to see more job creation in Hue city related to tourism sector.

Table 4: Overview of the outcome and impact of the boundary partners in Hue city, Vietnam

Boundary Partner	Outcome	Outputs	Activities	Indicators	Means of verification
1. Hue local newspaper (media)	1 Increased awareness to people on the current GHG emissions	1. Dissemination of information about the boundary partner meetings through public media 2. Dissemination of information on the estimated GHG emissions in the tourism sector from the project findings through public media	1. Attended boundary partner meeting held during May and August 2012 in Hue City 2. Broadcasted of the noted information from the boundary partner meetings in the local newspaper and news channels	1. News on boundary partner meeting was disseminated in at least 5 different media which included: Thua Thien Daily newspaper, Net Codo, TRT website, Media fun 2. News on boundary partner meeting was also disseminated through other media that includes you tube and the project website (http://sut.ait.asia)	1. Archived articles in the project website: http://sut.ait.asia 2. National story prepared for the project and available at http://sut.ait.asia 3. News clippings are available in the following URLs: http://www.baothuathienhue.vn/?gd=1&cn=20&newsid=1-0-26090 http://bmktcn.com/index.php?option=com_content&task=view&id=5026&Itemid=97 http://khoamoitruonghue.edu.vn/modules.php?name=News&op=viewst&sid=304 http://hue.vnn.vn/hue24h/201205/Phat-trien-du-lich-do-thi-ben-vung-thong-qua-cac-sang-kien-giam-khi-thai-carbon-2156049/ http://www.vietnamplus.vn/Home/Giam-khi-thai-carbon-giup-phat-trien-du-lich-do-thi/20125/140895.vnplus http://www.vietnamtourism.com/
	2 Increased awareness on potential green jobs creation from the GHG mitigation measures in the tourism sector	1. Dissemination of articles on the possible development of non-motorized transport zone and the promotion of garden houses in the Hue city, Vietnam through public media			

Boundary Partner	Outcome	Outputs	Activities	Indicators	Means of verification
					v_pages/news/index.asp?loai=2&uid=22051 http://www.youtube.com/watch?v=lyHUongRz1w&feature=youtu.be
2. Association of Hotel Business (private sector)	1. Understanding the share of hotel business in overall GHG emissions in the tourism sector	1. GHG emissions from the hotel sector were estimated to be about 85,000 tons of CO ₂ equivalent which is 75% in overall tourism sector in Hue city	1. Contributed in the data collection required for the GHG emission estimation from the hotel businesses 2. Attended the boundary partner meeting during May and August - 2012 3. The results of the GHG emissions were presented at the boundary partner meeting	1. Data provided by 18 hotels for Bilan Carbone analysis of GHG emission estimation in Hue 2. Attendance by the representatives from 3 hotels at the boundary partner meeting 3. The GHG emissions were reported to be about 85,000 tons of CO ₂ equivalent from hotels and 25,000 tons of CO ₂ equivalent from restaurants	1. Bilan Carbone Analysis report 2. Sumernet Book Chapter
	2. Impart increased environmental awareness to the tourists in the hotels	2. Dissemination of information to the tourists on the environmental friendly and eco-practices	2. Dissemination of brochures on the environmental friendly practices to the tourists	2. Bao Minh travel distributed leaflets on eco-practices to the tourists	Printed leaflets (see appendix)
	3. Contribution on the reduction of GHG	3. Practice environmental friendly actions such as efficient waste			1. Green Hotel printed regulations on the efficient use of lighting in every room

Boundary Partner	Outcome	Outputs	Activities	Indicators	Means of verification
	emissions from the Hotel sector	management, efficient lighting, etc.		2. Green hotel also observed Earth Hour by switching off all the lights for an hour (8:30 am on 31 March 2012)	http://www.earthhour.org.vn/vi.html
3 Association of Entrepreneurs (private sector)	Increased knowledge on the strategies for GHG mitigation and creation of decent employment for women and men in low income groups	Consent on possible strategies plans for development in Hue city to achieve GHG mitigation and creation of decent work	Active participation in the boundary partner meetings conducted during May and Aug (2012)	Association of 5 entrepreneurs attended the boundary partner meeting as noted in the participation list	Registry list maintained to log the entry of the participants during the conduction of boundary partner meetings
4 Hue Union of women (Government body)	Increased knowledge on the strategies for GHG mitigation and creation of decent employment for women and men in low income groups	Consent on possible strategies plans for development in Hue city to achieve GHG mitigation and creation of decent work	Active participation in the boundary partner meetings conducted during May (2012)	Participation list	Registry list maintained to log the entry of the participants during the conduction of Boundary Partner meetings
5 Center for Encouragement of Self Reliance (NGO)	Increased participation of women in green jobs that require capital investments	1. Provide loans in the garden house area for the women for its maintenance and restoration with a very low interest rate	1. Participation & contribution for the formulation of strategies towards GHG mitigation and job creation, during the boundary partner meetings	1. Around 100 garden houses were given small startup loans for conducting small businesses	Website: http://www.fesr.org/contact.html

Boundary Partner	Outcome	Outputs	Activities	Indicators	Means of verification
			held during May and August (2012)		
		2. Initiation of other activities such as improved sanitation system in the area of communes/market	3. Dissemination of brochures	2. More than 300 brochures on the project activities were disseminated to various people	2. Sample brochure

Chapter 4: Lessons learnt from the exchange and regional learning and boundary partner's engagement

During the project tenure, the research team built scientific knowledge and technical information by coordinating with project members, learning from experts during meetings at SUMERNET secretariat as well as engaging boundary partners in the project activities. The lessons learnt are divided into three categories, namely, individual capacity building, institutional capacity and social capacity building.

I. Individual Capacity Building

With the support from mentor, the team members learnt how to prepare and develop a good research proposal, reports and minutes. In this project, the individual capacity building covers confidence to conduct research work, improve English language skill and project management skills. However, most of individual capacity building needs further support from experts.

- Learnt to use Bilan Carbone-Tool

Bilan Carbone-Tool is an excel spread-sheet to estimate direct and indirect GHG-emissions developed by French Agency for Environment and Energy Management (ADEME). The principle is to use easily available data, from which suitable evaluation of direct and indirect GHG-emissions can be made. In addition, all related flows such as people, goods and energy are taken into account.

AIT conducted a meeting for project members to teach project partners the use of Bilan Carbone-Tool on 15 June 2012 for Chiang Mai municipality team. The Bilan Carbone-Tool offers several ways to calculate GHG-Emissions by using different input data. Initially, research partners needed to estimate the data which could be collected and which might not be available. From this, research members prepared survey questionnaires with advice from AIT-experts and learnt the following steps:

- ❖ To adjust Bilan Carbone-Tool for Thailand and Vietnam by using emission factors given by Thailand Green House Gas Management Organization (TGO) and Vietnam standard.
 - ❖ To insert data into the Bilan Carbone-Tool to get a GHG-Emission of CO₂ equivalent as an output.
 - ❖ To manage project affectively by choosing suitable research partners, evaluating data and forecasting challenges concerning data availability.
- Developed reports writing skills and develop minutes

Based on guidelines of AIT and SUMERNET, the city partners were required to write guided reports in standard format. However, it was challenging to write reports and minutes in English for both partner cities in the beginning of the project. But they learnt and understood the main structure of report guidelines.

- Logical Framework Analysis (LFA)

Initially, a LFA was prepared for the project proposal and finally adjusted during the project evaluation. Project members learnt how to use LFA which included outcome, output, activities, indicators and verifications. The project partners also learnt to check and evaluate LFA after the project during the final consultation meeting held on 26th of November 2012 at AIT. They understood the importance of boundary partners to develop LFA. The LFA was prepared for every boundary partner separately later (see Table 2, 3 and 4).

- Language improvement

Individual English language skill is often a challenge when conducting projects at an international level. Due to the lack of proficiency in English language skill, the report preparation was challenging for research partners (Chiang Mai municipality and Hue city). In every boundary partner meetings, research partners translated all discussion (in local language) to English language to AIT, and to partner city (Vietnam/Thai) to get suggestions on their discussion which developed confidence and improved their English language skill.

Communication with AIT and partner cities and writing project reports also gave added value to improve the English language. In addition, SUMERNET secretariat conducted a writeshop in Bangkok that also improved writing abilities of project members, especially for writing a journal article, book-chapter, national story and policy brief.

- Presentation skill

During various meetings project partners were able to improve their presentation skill, namely, speaking abilities and power-point development skills. The partner cities had to use at least two languages when boundary partners were invited for the meeting. They also prepared project related information separately for local boundary partners and international institutes. These experiences could help to manage similar activities in future.

- Develop skill to present the project

The interest of boundary partners in the project mainly depends on how the project manager presented the project's activities to boundary partners. A good presentation could enhance the outputs of the project dramatically. The partner cities learnt how to convince boundary partners and any other third-party visitors on the project activities.

- E-mail exchange

Most of the information were obtained/channeled by e-mail, without conducting meetings. Information exchange by e-mail can improve the workflow of the project. The project partners learnt the use e-mail communication. It improved the cooperation and coordination among the partner institute in project related information exchange.

- Project management skills

The personnel who work for the project also developed project management skill. Two examples are stated below:

Conducting meetings: Conducting meetings requires several steps that need to be taken by the program manager. Invitation letters need to be prepared and distributed among boundary-partners and other suitable participants. Moreover, a location needs to be chosen which also closely links to managing financial issues, which can be quite difficult especially while conducting international projects with allocated financial agreements. Agenda needs to be prepared prior to the conduction of the meetings. Difficulties might be to choose the most important topics in order to keep the attention of the audience and to be able to stay in time frame. In case of international projects it is also important to think about the language that should be used mostly depending on the topic of the meeting and its intention. Through this project, the project partners were able to learn about the entire cycle of organizing and conducting a meeting.

Handling dependencies: It should be noted that many boundary partners involved in the project activities who provided data and information related to research work. Most of the project's outputs/outcomes depended on their involvement. Such dependencies might threaten the project outputs/outcomes. Thus, project manager learnt how to adapt to changes if a boundary partner did not join the project or delivers data too late. However, project manager made good experience with boundary-partners regarding data delivery and project engagement. Many suggestions were made during meetings and even unexpected community groups joined meetings and gave suggestions, especially in the case of Chiang Mai municipality. This positive experience paves the way for future projects.

- Using public media / gain public awareness

Project members learnt how to utilize modern media for public awareness. For example, in Chiang Mai, project members took various pictures related to tourism and climate change, and made videos to present to the public. Besides having the media itself, it is also important to choose the right publication platform. Pictures were usually used for meeting presentation and in the websites such as <http://sut.ait.asia> and www.cmm.go.th. SUT.AIT.ASIA was developed by the project team to increase public awareness. Moreover, YouTube and facebook were also used for public media-platform of video clips and pictures of project.

AIT, Chiang Mai municipality and Hue city also prepared project brochures and distributed to boundary partners and others for dissemination. Public awareness is very important, as it can become the driving force behind the project-policy. If the project-policy can gain support from local communities the government is more likely to implement the policy as well.

- City to City Visit

There were two main objectives for the city-to-city visits. First, to learn about real life activities related to the tourism sector. Second, to share and exchange experiences from tourism related policies, plans and activities that create green and decent jobs for local people.

The knowledge gained from the city to city visit could be used to suggest policies and plans in the tourism sector that are suitable for Hue City and Chiang Mai municipality. After visiting both cities, it was found that Chiang Mai has more tourism related activities than Hue City. Therefore, Hue city could learn more from Chiang Mai municipality related tourism promotional activities such as the Sunday-Walking-Street, Night markets, etc. Moreover, it could be better to see in which way a city takes advantage from tourism and what are the challenges/problems.

There are also some similar activities in the two cities. For example, Hue city has cyclos that operate in the same way as tricycles in Chiang Mai. The only difference is cyclo in Hue does not have cover which could protect direct Sun light and rain for the passengers. The night markets in Hue city and Chiang Mai have similar feature but management of night market in Hue city looks poor because the different mobile-shops were set up randomly without providing any suitable walkway. This can be improved by learning lessons from Chiang Mai that can attract many tourists while creating jobs for local people.

Hue City has a rare combination of sea and beautiful mountains that give a wonderful scenic beauty for the city. It also has a beautiful riverfront restaurants and shops next to Perfume River that can be developed to attract tourists. In addition, Hue City could provide boat trips along the riverside by providing more facilities such as lightning, telephone-stations and cleaning-stuff counters. Finally, Hue City has to promote its tourist activities internationally by involving different tourism agencies at local, national and international level.

Both cities can learn best practices from each other. Hue city is promoting historical garden houses as tourist attraction places at city level which can create decent jobs for local people. Chiang Mai municipality is planning to develop non-motorized transport in its city center to reduce GHG emission. The municipality is also planning to introduce co-benefits concept, for example, develop co-benefits between hotels and bicycle-renting shops or the guide association and tricycle providers. Taking this into account, it might be possible to create co-benefits between cyclo drivers and the garden houses in Hue city.

II. Institutional capacity building

Although individual capacity building is important and can shape the outputs and outcomes of the project, building institutional capacity is equally important. Developing the organizational effectiveness is challenging mostly because institutes have fixed agendas and workflows, this especially counts for governmental organizations such as Hue city authority and Chiang Mai municipality. Nevertheless, the project helped in institutional capacity building such as;

- Networking with organizations

This project was a cooperation between AIT, SUMERNET, Hue city authority, Chiang Mai municipality, CDKN and boundary partners. This experience contributed to the understanding and trust of each party. This cooperation not only had an effect on the project management but also strengthened the networking between institutions.

- Cooperation with boundary partners

Many boundary partners were engaged in the project activities in both cities. Thus, a good network was developed with boundary-partners. This close cooperation between boundary partners and political body is likely to modernize policy development. More boundary partner involvement ensures that the policy meets the needs and interest of all concerned.

- Creating think-tank

A think-tank collects and includes all information about GHG-emissions and forces people to think about it over and over again. This not only increases public awareness but also makes sure that people hear about the topic in their daily life.

III. Social Capacity Building

Social Capacity building means the development of an interactive public administration that learns from its own actions and from the feedback it receives from the population at large. The public administration is seen as a responsive and accountable service provider that meets the need of the population (ECOSOC, 2006).

During the project tenure, capacity building on a social level was achieved due to high boundary-partner engagement. Boundary partners were the most important actors of the research project in Hue city and Chiang Mai municipality. In this project, boundary partners were involved to get correct information and data related tourism sector to analyze GHG emission and employment generation at the city level. The boundary partners suggested various GHG-emission mitigation options and job-creation-opportunities for the project. On the basis of research result, boundary partner from both cities suggested policy option to achieve the project outputs and outcomes. These outputs and outcomes of the project will certainly help to influence or make impact in the decision making for policy development and planning process (related to sustainable urban tourism) of each city in future.

Apart from the research related to GHG inventory and analysis of income generating opportunities, the project organized workshops, meetings, consultation, discussions, etc. with research and boundary partners to achieve their opinion and feedback. Besides, city to city visits were organized where research partners (AIT, Chiang Mai municipality and Hue city) as well as Sumernet partner institute (Hue University of Sciences) also got an opportunity to learn and share their experience related to sustainable urban tourism development.

Chapter 5: Success and challenges

This section discusses the key success and challenges that the research teams faced during the project implementation. This project involved researchers (AIT and Hue University of Sciences), city authorities (Hue city and Chiang Mai municipality) and other relevant city groups/institutions right from project formulation phase to its completion, as important stakeholders, which provided additional and useful inputs for addressing GHG mitigations while creating decent jobs for local people on urban tourism sector in Hue city and Chiang Mai municipality. The two cities completed the GHG emission analysis of tourism service providers' activities. The boundary partners prioritized the GHG emission mitigation options on the basis of GHG inventory, and the potential to generate jobs, increase income, and to provide a much cleaner environment to visitors and locals. The recommended options were 'Non-Motorized Transport' (NMT) in Chiang Mai municipality, and promotion of 'Garden Houses' in Hue city.

I. Success

- Ability to conduct research work

The GHG emissions of tourism service providers were successfully analyzed by the both cities. On the basis of GHG emission inventory, the boundary partner prioritized the mitigations to be implemented at city level by creating decent jobs for local people. The recommended options by boundary partner were 'Non-Motorized Transport' (NMT) in Chiang Mai municipality, and promotion of 'Garden Houses' in Hue city. Afterward, both cities verified the recommended mitigation options by conducting field survey in crucial tourist locations of the city

- Development of research papers

After completion of project research, the research-papers were prepared in cooperation with AIT, Hue city, Chiang Mai municipality, Hue University and SUMERNET such as book-chapter, policy-brief, national-story and a policy briefs. These publications highlight the project outputs and policy recommendations to achieve urban sustainable tourism development while creating decent jobs for local people in both Hue and Chiang Mai.

- Engaging policy makers

The main aim of the project was to provide policy recommendations on 'GHG emission mitigation and job creation in tourism sector' to the decision makers of both city authorities. Therefore, it is important to integrate and inform policy maker right from the beginning of the project. In fact, the project had already involved both city partners from the local government body while conducting the research and recommending policy options.

Chiang Mai Municipality developed a video in which the mayor of Chiang Mai municipality talked about the development of Non-motorized-transport as a main policy to reduce GHG-emissions. The video also addresses to visitors of Chiang Mai and gives short information about the tourism sector in Chiang Mai. Finally, the mayor thanks all participants of the project, especially AIT, Hue, SUMERNET and CDKN. This activity clearly demonstrates the willingness and commitment of the local authority towards this project and its recommendation.

Moreover, policy briefs and policy statements were handed to the Mayor of Chiang Mai municipality and the Chairman of Hue People's Committee for their consideration.

- Engaging boundary-partners and cooperation

Boundary partners are the most important actors of the research project in Hue city and Chiang Mai municipality. They were responsible for providing data to estimate GHG emissions and information on job creations. They are an important party for accessing and introducing the project to local communities as well as others.

The cooperation between boundary partners can be seen as a key success of the project. Almost all anticipated boundary partners joined the project and gave suggestions for policy development and job creation opportunities. Moreover, more than five unanticipated boundary-partners in Chiang Mai municipality joined the project, gave suggestions and contributed to public awareness of the project at community level.

- Use of public media

Media is an important approach to disseminating project activities and to create public awareness. Hue city and Chiang Mai municipality involved news media in every project meetings and publicized the outputs of the meeting by uploading news on their website. In addition, the project team also connected these web links to the project website for dissemination (<http://sut.ait.asia>) and also uploaded some event's video clips in YouTube and facebook.

- Capacity building

The project ensured capacity building at both individual and institutional level.

II. Threats and Challenges

Partner cities faced significant challenges during the GHG emission data collection process, because many of the survey team did not have any prior knowledge on GHG emission. At the same time, tourism service providers did not understand what information they need to provide to the survey team.

This research was a new concept for both partner cities, and so every project activity such as research on GHG emission and income generation, organization of boundary partner meeting; city to city visit, etc. were challenges for them. However, all were completed successfully by coordinating with research partners and other networks.

A. Threats

In opposition to challenges, threats can significantly have an effect on the success of the project. A significant threat of the project was that it did not cover the whole tourism sector activities. This was because of lack of data availability and a short project timeframe. The research did not account the data from Chiang Mai municipality; Zoo and Aquarium, Sunday Walking Street, night markets, shopping centers and other small street vendors and Hue city; shopping centers and other small vendors. During the prioritization of mitigation options, the international flights and bus travel (within the country) contributed to GHG-emissions were ignored because these emissions cannot be controlled by the local government and communities.

Although, the study did not cover the whole tourism sector, the scope of the study was enough to be used for policy suggestions in order to reduce GHG-emissions while creating green and decent jobs.

B. Challenges

This research was a new concept for both the partner cities, and so every project activity such as research on GHG emission and income generation, organization of boundary partner meeting;

city to city visit, etc. were challenges for them. However, all were completed successfully by coordinating with research partners and other networks.

- Contact with boundary partners

The project involved many boundary-partners and frequently requested additional information related to project activities. However, sometimes it was difficult to answer all their requests which caused difficulty to collect information and data spontaneously as needed.

- Collecting data from boundary partners/agencies

Collecting data from boundary partners was equally difficult. Sometimes, it was also difficult to manage data collection from different agencies. For example, data for Chiang Mai Zoo had to be collected from several agencies. This slows down the progress of data-collection, as there is no open accessible single database.

- Data availability

Certain data related to GHG emission which has not been recorded so far could not be collected. Moreover, some data also needed to be collected over time. Moreover, the project was conducted in 2012 but survey data was required for 2011 and many boundary-partners had no time to search for the data.

- Time frame

As the SUMENET secretariat and AIT kept strict deadlines and close monitoring, it required city partners and team to finish all the work on time.

Meeting the deadlines could not be achieved on time due to delay in obtaining data or, due to other work loads of project manager. Often it was necessary to involve extra personnel for time consuming jobs like data collection, data translation and report preparation. Although, it meant more expenditure for the project, it improved the outputs of the project on time.

- Financial issues

The project partner (Hue city and Chiang Mai municipality) sometimes suffered financial problems due to untimely completion of the project activities. For example, project manager in Chiang Mai had to hire additional personnel, who were not able to receive salary before funds were available. This is due the installments of the project budget according to agreement which needs to be revised or updated according to changes in the timing of project activities once the project was initiated.

- Implementation of recommended mitigation options

The project recommended GHG-emissions mitigation options i.e. Non-Motorized Transport' (NMT) in Chiang Mai municipality, and promotion of 'Garden Houses' in Hue city. These mitigation options require high investment for implementation. So, the two cities have the challenge to implement their recommended mitigation strategy while creating decent jobs for local people in their city. Chiang Mai municipality needs to find reliable sources that could support and develop NMT at Three King Monument Square, while Hue city also needs to promote Garden house at Huong Long and Kim Long wards by getting support from Vietnam government or other alternative sources.

- Sustainability

Sustainability of the project concerns with the achievement of expected outcomes of the project which depends mainly on the policy makers who would implement the policy recommendations. In addition, project implementation cannot be carried out without getting support from the boundary partners and local communities. Only if communities show serious interest in implementing NMT and promoting Garden houses, and reducing GHG-emissions, policy makers are likely to achieve the project outcomes. Nevertheless, effort has to be taken through this project to highlight the importance of NMT and Garden houses in the respective cities for ensuring sustainable urban tourism.

Chapter 6: Most significant change stories

Back ground

The project team was acquainted with the term “stakeholder” in their professional work, but not with the “boundary partner”. They became familiar with this term since their involvement in the Sumernet project. The team felt that it would be very difficult to involve boundary partners in the research project as they have their own agenda and priority. However, boundary partners were the most important actors in Chiang Mai and Hue cities, as this project involved boundary partners to get information and data related tourism service providers to analyze GHG emission at the city level. The project team worked and delivered its outputs and outcomes by engaging boundary partners for the different project activities. These outputs and outcomes of the project certainly help to influence or make impact on the decision making process in the future or on ongoing plans related to tourism sector.

With support from the mentor Dr. Lebel, the project proposal was improved.

The two research partners (in the project team) were from the local city authority which helped to mobilize boundary partners for the different project activities. At the same time, the city authorities were able to advocate the change in policy and decisions related to research topics. Through the project, the project team had an opportunity to share and exchange information and knowledge related to climate compatible urban sustainable tourism.

The project team developed project brochures (in English, Thai and Vietnamese) and website (<http://sut.ait.asia>) to disseminate information related to the project activities (knowledge sharing).

The Sumernet secretariat which was closely monitoring the deadline and project work was also a great helps to complete all project related work on time.

I. Most significant change story from Chiang Mai municipality

Chiang Mai municipality (Mr. Trinnawat) and Chiang Mai University (Ms. Orathin Joolapong) came to AIT to learn the use of Bilan Carbon Tool on 15 June 2012. Immediately after the training, the CMM organized a team to collect GHG emission data related to tourism sector. The emission factors for the Bilan Carbone spreadsheet were updated by using emission factors from Thailand Greenhouse gas Organization. Finally, the GHG emission inventory was developed which was presented during the boundary partner meeting. After prioritization of GHG emission mitigation options, CMM further conducted a survey for green and decent job creation in areas related to NMT. The result of the survey was shared during the consultation meeting to propose the policies and plans for GHG emission reduction while creating green and decent jobs for local people. These activities and outputs were very important to develop policies and plans for future decision-making process.

Therefore, CMM project team learned how to facilitate meetings, site surveys and interviews for desired research outcome. The CMM team gained confidence during project process in: professional presentation, academic writing and data analysis. During the project process, the boundary partner formed a new network to contribute and distribute technical knowledge and information to their organizations. For Chiang Mai municipality, Non- motorized transport was agreed as our solution for GHG emission reduction and green and decent job creation in Chiang Mai, as stated in Policy Brief and policy statement. CMM expects it will help to decrease GHG emissions and create jobs in communities.

II. Most significant change story from Hue city

After signing the project contract, Hue city invited Hue University to conduct the research work on GHG emission related to tourism sector. The emission factors in the Bilan Carbone spreadsheet were updated by using emission factors based on Vietnam standard. The GHG emission inventory was developed which was presented during the first boundary partner meeting. After prioritization of GHG emission mitigation options, Hue city further conducted a survey for green and decent job creation in communities related to Garden Houses. The result of the survey was used during the consultation meeting to identify the policies and plans for GHG emission reduction while creating green and decent jobs for local people.

Therefore, Hue city project team learned how to conduct meetings, site surveys and interviews for desired research outcome. The team gained confidence during project process in: professional presentation, academic writing and data analysis. Hue city authority agreed on Garden Houses promotion as their policy option for GHG emission reduction while creating decent jobs in the city, as stated in the Policy Brief and policy statement. They expect it would help to decrease GHG emissions and create jobs in communities.

Chapter 7: Products and publications

The following are the products and publications of the project:

- Project brochure in three languages (English, Thai and Vietnamese) were published
- Research working papers (altogether 4)
 1. An inventory of greenhouse gas emissions from tourism related activities in Chiang Mai Municipality, Thailand
 2. An inventory of greenhouse gas emissions from tourism related activities in Hue city, Vietnam
 3. The employment assessment in Chiang Mai municipality, Thailand
 4. The employment assessment in Hue city, Vietnam
- Book Chapter for Sumernet Book Publication
 1. Greenhouse Gas Emissions from Tourism Service Providers: Case Studies in Chiang Mai, Thailand and Hue, Vietnam)
- Journal article
 1. Promoting cultural heritage for sustainable urban tourism-Garden houses in Hue city, Vietnam
- Policy briefs
 1. Non-motorized transport in Chiang Mai
 2. Garden houses in Hue city
 3. Regional Policy brief on non-motorized transport
- Policy statements
 1. Chiang Mai municipality on Non-Motorized Transport (NMT) system
 2. Preservation of Garden House for Sustainable Urban Tourism in Hue City
- Press Release: Chiang Mai municipality on NMT approach
- Project in Hue city related news published in websites (<http://sut.ait.asia>)
- Video clip of Chiang Mai municipality Mayor related to project (<http://sut.ait.asia>)
- Uploaded project related information in project website (<http://sut.ait.asia>)

Chapter 8: Recommendations

1. For Future Programme design of SUMERNET Phase 3
 - The disbursement of finances (installments of the project budget) should be designed in such a way that major portion of the budget is given by the mid of the project so that it covers the cost of major research work (such as field survey, consultation meeting, etc.) rather than in the end where the major task is just writing reports which does not require a significant budget.
2. For Other partners
 - All partner institutes should understand that project activity can run smoothly only if there is a healthy cooperation and coordination among the project team. All partner institutes should feel their responsibility towards the project activities to produce project outputs on given project timeframe.
3. For Donors
 - An incentive for boundary partners/ or any stakeholder to be involved in the consultation meeting should be maintained. Without any incentive it will be difficult to guarantee participation of stakeholders.

Chapter 9: Financial report

This section presents the financial report of the project identifying the status of expenditures against the proposed budget for each project partners.

The data given is based on the expenses as per the financial reports submitted to Sumernet until end October 2012. The final status of the project expenditures will be available only after the end of the project in December 2012.

Table 5 gives the overall project expenditure till 31 October 2012.

Table 5: Overall Project Expenditure (January – October 2012)

Activities	Budget (US \$)	Expenses till October 2012 (US \$)
Personnel	43,900.00	28,492.34
Workshop/ Meeting/ Training	10,600.00	5,353.67
Travel and Accommodation	3,800.00	4,801.24
Office Supplies, communication, dissemination	7,300.00	5,259.66
Miscellaneous	9,400.00	5,006.45
Total	75,000.00	48,913.36

The budget received during January – October 2012 (2 installments) for the project activities was US \$ 37,500. The total expenses till October 2012 was 48913.36

A detailed financial report for the period covering November – December 2012 will be provided in the end of December 2012.

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Appendices

Appendix 1: Logical Framework Analysis (LFA)

Table 6: The anticipated outcomes from the boundary partner in the medium term in **Chiang Mai Municipality, Thailand**

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
Journalist Association of Chiang Mai (media)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: Disseminated project results through local media</p>	<ul style="list-style-type: none"> Disseminate result of GHG emissions study of Chiang Mai tourism sector Create public discussion on GHG mitigation and green and decent jobs, and gender equality in the Chiang Mai tourism sector 	<ul style="list-style-type: none"> Number of newspaper articles on <ul style="list-style-type: none"> GHG emission mitigation issues in Chiang Mai's tourism sector Green jobs in the tourism sector Gender issues in the tourism sector 	<ul style="list-style-type: none"> News paper articles based on project activities Articles/information on related topics Letter to the editors
Chiang Mai Tourist Business Associations (private sector)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Chiang Mai</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination:</p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation /decent work, gender Dissemination of Brochures 	<ul style="list-style-type: none"> Number of plans to reduce GHG emissions implemented by Associations of Hotel Business Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
		<i>Dissemination of Brochure</i>			
Chiang Mai Restaurant Club (private sector)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Chiang Mai</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation /decent work, gender Dissemination of Brochures 	<ul style="list-style-type: none"> Number of plans to reduce GHG emissions implemented by Chiang Mai Restaurant Club Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes
Chiang Mai Guide Association (private sector)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Chiang Mai</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low</p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation /decent work, gender Dissemination of Brochures 	<ul style="list-style-type: none"> Number of plans to reduce GHG emissions implemented by Chiang Mai Guide Association Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
		carbon society Publications & Dissemination: <i>Dissemination of Brochure</i>			
The Thai Northern Hotel Association (private sector)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Chiang Mai</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation /decent work, gender Dissemination of Brochures 	<ul style="list-style-type: none"> Number of plans to reduce GHG emissions implemented by The Thai Northern Hotel Association Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes
Tourism Authority of Thailand (Government body)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Chiang Mai</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide</p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation /decent work, gender Dissemination of Brochures 	<ul style="list-style-type: none"> Number of plans to reduce GHG emissions implemented by Tourism Authority of Thailand Number of 3R related activities introduced Number of green jobs in the hotel industry Number of tourists increased 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
		<p>opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>			
Chiang Mai Provincial Office (Government body)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Chiang Mai</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation /decent work, gender Dissemination of Brochures 	<ul style="list-style-type: none"> Number of policies and plans to reduce GHG emissions implemented by Chiang Mai Provincial Office Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes
Hugchiangmai Group (NGO)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income 	<p>Quantified GHG emission estimation of the tourism sector in Chiang Mai</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p>	<ul style="list-style-type: none"> Suggestions for various options for GHG emission mitigation Dissemination of Brochures 	<ul style="list-style-type: none"> Number of policies and plans to reduce GHG emissions implemented by Hugchiangmai Group Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
	groups	Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society Publications & Dissemination: <i>Dissemination of Brochure</i>			
Chiang Mai Friends (NGO)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society Publications & Dissemination: <i>Dissemination of Brochure</i>	<ul style="list-style-type: none"> Suggestions for various options for GHG emission mitigation Dissemination of Brochures 	<ul style="list-style-type: none"> Number of policies and plans to reduce GHG emissions implemented by Chiang Mai Friends Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes
Chiang Mai Cycling Group (NGO)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	Developed policies and plans to mitigate GHG emissions in Chiang Mai which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society Publications & Dissemination: <i>Dissemination of Brochure</i>	<ul style="list-style-type: none"> Suggestions for various options for GHG emission mitigation Dissemination of Brochures 	<ul style="list-style-type: none"> Number of policies and plans to reduce GHG emissions implemented by Chiang Mai Cycling Group Number of 3R related activities introduced Number of eco friendly transport routes introduced for tourists 	<ul style="list-style-type: none"> Observations/ reports on actions implemented in GHG emission mitigation, eco friendly transport and 3R Focal group discussion meeting minutes

Table 7: The anticipated outcomes from the boundary partner in the medium term in **Hue City, Vietnam**

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
Hue Local News Paper: (Thua Thien Hue Daily News) (media)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector. Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: Disseminated project results through local media</p>	<ul style="list-style-type: none"> Disseminate result of GHG emissions study of Hue tourism sector Create public discussion on GHG mitigation and green and decent jobs, and gender equality in the Hue city tourism sector 	<ul style="list-style-type: none"> Number of newspaper articles on <ul style="list-style-type: none"> GHG emission mitigation issues in Hue's tourism sector Green jobs in the tourism sector Gender issues in the tourism sector 	<ul style="list-style-type: none"> News paper articles based on project activities Articles/information on related topics Letter to the editors
Associations of Hotel Business (private sector)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Hue city</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation /decent work, gender Dissemination of Brochures 	<ul style="list-style-type: none"> Number of plans to reduce GHG emissions implemented by Associations of Hotel Business Number of 3R related activities introduced Number of green jobs in the hotel industry 	<ul style="list-style-type: none"> Observations/ reports on actions implemented on GHG emission mitigation, 3R and green jobs Focal group discussion meeting minutes
Bao Minh Travel Company (private sector)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the 	<p>Quantified GHG emission estimation of the tourism sector in Hue city</p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for 	<ul style="list-style-type: none"> Number of plans to reduce GHG emissions implemented by Bao 	<ul style="list-style-type: none"> Observations/ reports on actions implemented on GHG emission mitigation,

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
	<p>urban tourism sector</p> <p>2. Planned activities in place to creating more green jobs for women and men in low income groups</p>	<p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<p>evaluation of options</p> <ul style="list-style-type: none"> • Suggestions/ implementing of options for GHG emission mitigation /decent work, gender • Dissemination of Brochures 	<p>Minh Travel Company</p> <ul style="list-style-type: none"> • Number of green transport systems introduced for tourists (bic/tri cycles, etc) • Number of green jobs introduced 	<p>and green jobs</p> <ul style="list-style-type: none"> • Focal group discussion meeting minutes
Association of Entrepreneurs (private sector)	<p>1. Planned activities in place to reduce GHG emission intensity in the urban tourism</p> <p>2. Planned activities in place to creating more green jobs for women and men in low income groups</p>	<p>Quantified GHG emission estimation of the tourism sector in Hue city</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> • Providing data for GHG emission estimation and collecting data for evaluation of options • Suggestions/ implementing of options for GHG emission mitigation /decent work, gender • Dissemination of Brochures 	<ul style="list-style-type: none"> • Number of plans to reduce GHG emissions implemented by Association of Entrepreneurs • Number of 3R initiatives • Number of green products initiated (local products) • Number of green jobs introduced 	<ul style="list-style-type: none"> • Observations/ reports on actions implemented on GHG emission mitigation, 3R, green products and green jobs • Focal group discussion meeting minutes
Green Travel JSC (private Sector)	<p>1. Planned activities in place to reduce GHG</p>	<p>Quantified GHG emission estimation of the tourism</p>	<ul style="list-style-type: none"> • Providing data for GHG emission estimation and 	<ul style="list-style-type: none"> • Number of plans to reduce GHG emissions 	<ul style="list-style-type: none"> • Observations/ reports on actions implemented on

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
	<p>emission intensity in the urban tourism sector</p> <p>2. Planned activities in place to creating more green jobs for women and men in low income groups</p>	<p>sector in Hue city</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<p>collecting data for evaluation of options</p> <ul style="list-style-type: none"> • Suggestions/ implementing of options for GHG emission mitigation /decent work, gender • Dissemination of Brochures 	<p>implemented by Green Travel JSC</p> <ul style="list-style-type: none"> • Number of green transport systems introduced for tourists (bic/tri cycles, etc) • Number of green jobs introduced 	<p>GHG emission mitigation, and green jobs</p> <ul style="list-style-type: none"> • Focal group discussion meeting minutes
Hue Union of Women (Government body)	<p>1. Planned activities in place to reduce GHG emission intensity in the urban tourism sector</p> <p>2. Planned activities in place to creating more green jobs for women and men in low income groups</p>	<p>Quantified GHG emission estimation of the tourism sector in Hue city</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> • Providing data for GHG emission estimation and collecting data for evaluation of options • Suggestions/ implementing of options for GHG emission mitigation • Dissemination of Brochures 	<ul style="list-style-type: none"> • Number of decent jobs introduced for women 	<ul style="list-style-type: none"> • Observations/ reports on jobs created • Focal group discussion meeting minutes

Boundary Partner	Outcome	Outputs	Activities	Outcome Indicators	Means of Verification
Vietnam Institute of Culture and Arts Studies (Government body)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Quantified GHG emission estimation of the tourism sector in Hue city</p> <p>Enhanced collaboration among communities, local government and private sector in working towards GHG mitigation initiatives</p> <p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> Providing data for GHG emission estimation and collecting data for evaluation of options Suggestions/implementing of options for GHG emission mitigation Dissemination of Brochures 	<ul style="list-style-type: none"> Number of decent jobs introduced in the tourism sector 	<ul style="list-style-type: none"> Observations/ reports on actions implemented Focal group discussion meeting minutes
Center for Self Reliance Enrichment (NGO)	<ol style="list-style-type: none"> Planned activities in place to reduce GHG emission intensity in the urban tourism sector Planned activities in place to creating more green jobs for women and men in low income groups 	<p>Developed policies and plans to mitigate GHG emissions in Hue which could provide opportunities for creation of decent work for the poor and increased participation of women towards low carbon society</p> <p>Publications & Dissemination: <i>Dissemination of Brochure</i></p>	<ul style="list-style-type: none"> Suggest for various options for GHG emission mitigation Dissemination of Brochures 	<ul style="list-style-type: none"> Number of green jobs and decent jobs introduced in the tourism sector 	<ul style="list-style-type: none"> Observations/ reports on actions implemented Focal group discussion meeting minutes

Appendix 2: List of boundary partners, outcome challenges and progress makers

Media

Chiang Mai: Journalist Association of Chiang Mai

Hue: Hue Local News Paper: (Thua Thien Hue Daily News)

Private Sector

Chiang Mai: Chiang Mai Tourist Business Associations, Chiang Mai Restaurant Club, Chiang Mai Guide Association, The Thai Northern Hotel Association

Hue: Association of Hotel Business, Bao Minh Travel Company, Association of Entrepreneurs, Green Travel JSC (an enterprise, owing a four-star hotel, a green restaurant and a tour operator)

Government

Chiang Mai: Tourism Authority of Thailand, Chiang Mai Provincial Office of Tourism and Sport

Hue: Vietnam Institute of Culture and Arts Studies in Hue under the Ministry of Culture, Sports and Tourism; Hue Union of Women

Non-Government

Chiang Mai: Hugchiangmai Group, Chiang Mai Friends and Chiang Mai Cycling Group

Hue: Center for Self Reliance Enrichment (Micro finance)

Tourists

Though tourists are the important stakeholders in this sector for the cities, their feedback and inputs were also collected during the questionnaire surveys.

Outcome challenges

The boundary partners of the both cities came from different nature of activities. Most of them had their own agenda and priority apart from the project. In the beginning, most of them did not know about GHG emission, mitigation and job creations. However, after involving in different project activities they understood the need of the project. In this project, the boundary partners were the most important actors who provided correct data related to tourism service providers to analyze GHG emission and information on income generation and job creation at the city level. The project team worked and delivered its outputs and outcomes by engaging boundary partners in the different project activities.

The expected **progress markers** through the boundary partners are listed below:

Media:

- expect to see publishing outputs of project activities
- like to see publish additional information/reports on GHG emission and its mitigation, green and decent jobs
- love to see creating platform for discussion and increase awareness

Private Sectors:

- expect to see providing inputs for the project activities
- like to see high involvement in achieving the project outputs on GHG emission mitigation, green & decent job creation and gender equality
- love to see implementing various GHG emission mitigation initiatives and promoting green and decent jobs in the tourism sector

Government:

- expect to see providing inputs for the project activities
- like to see high involvement in achieving the project outputs on GHG mitigation, green consumption & production, job creation and gender equality
- love to see implementing various GHG mitigation initiatives and promoting green & decent jobs in the tourism sector

Non-Governments:

- expect to see providing inputs for the project activities
- like to see high involvement in achieving the project outputs on GHG emission mitigation
- love to see the groups advocate, implement and promote GHG emission mitigation, green & decent jobs and gender equality in tourism sector

Appendix 3: Contents of key research publications

The following are the products and publications:

- **Project brochure in three languages (English, Thai and Vietnamese) (see appendix 4)**
- **Research working papers (altogether 4)**

1. Title: An inventory of greenhouse gas emissions from tourism related activities in Chiang Mai Municipality, Thailand

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2. Title: An inventory of greenhouse gas emissions from tourism related activities in Hue city, Vietnam

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3. Title: The employment assessment in Chiang Mai municipality, Thailand

Theme: Non-Motorized Transport Campaign Scheme

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- 1. Introduction
- 2. Research methods
- 3. Results and analysis from survey
- 4. Opportunities for a job creation
- 5. Recommendation

4. Title: The employment assessment in Hue city, Vietnam

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- 1. Introduction
- 2. Methods of research
- 3. Garden houses in Hue
- 4. Garden houses for green tourism
- 5. Current Barriers in the promotion of garden houses as local tourist attraction

- **Book Chapter for Sumernet Book Publication**

Title: Greenhouse Gas Emissions from Tourism Service Providers: Case Studies in Chiang Mai, Thailand and Hue, Vietnam

1. Introduction
2. Methods
3. Results
4. Discussion
5. Conclusion

Acknowledgement

References

- **Journal article**

Title: Promoting cultural heritage for sustainable urban tourism-Garden houses in Hue city, Vietnam

- **Policy briefs**

1. Non-motorized transport in Chiang Mai
2. Garden houses in Hue city
3. Regional Policy brief on non-motorized transport

- **Policy statements**

1. Chiang Mai municipality on Non-Motorized Transport (NMT) system
2. Preservation of Garden House for Sustainable Urban Tourism in Hue City

- **Press Release: Chiang Mai municipality on NMT approach**

- **Project in Hue city related news published in websites (<http://sut.ait.asia>)**

- **Video clip of Chiang Mai municipality Mayor related to project (<http://sut.ait.asia>)**

- **Uploaded project related information in project website (<http://sut.ait.asia>)**

Chiang Mai Municipality's Policy Statement on **Non-Motorized Transport (NMT) system**

Purpose

Chiang Mai municipality is providing this policy statement to reflect its support for the development and extension of Non-Motorized Transport (NMT) system in Chiang Mai municipality area. Sustainable urban transport system with a focus on NMT will be crucial for Chiang Mai to maintain the livability of its communities and to enhance its attractiveness at major tourist destination. Chiang Mai municipality encourages project developers, concerned authorities, agencies and the communities to proactively engage in the development and implementation of NMT system.

This policy (plan) intends to lay a strategic and planning to initiate a course of developing non-motorized transport system, such as walking, bicycling, with initial focus on Three Kings Monument center and connecting to moat of Chiang Mai's inner city.

Policy Statement

Chiang Mai municipality will consult and co-ordinate with relevant government departments and concerned stakeholders in developing an institutional and policy framework, and implementation strategies for a non-motorized transport system.

The objectives of the municipal/provincial NMT policy/strategy plan may include, but not limited to⁸-

- integrated land use planning for NMT within state/regional transport and land use planning;
- Integrated NMT to the other mode of urban transport and promote NMT as mode of urban transport.
- prioritization of areas of NMT system and facilities with international standard;
- development of road safety programs;
- development of by-laws regarding to non-motorized transport system.

⁸ Based on World Bank Guideline, 1996 as available online at <http://siteresources.worldbank.org/INTURBANTRANSPORT/Resources/T-OT-4.pdf>

Hue City People’s Committee Policy Statement
on
Preservation of Garden House for Sustainable Urban Tourism in Hue City

Purpose

Hue City People’s Committee (hereinafter referred as HCPC) is providing this policy statement to reflect its support for the development and enhancement of Garden Houses in Hue City. Sustainable urban tourism with a focus on Garden Houses will be crucial for HCPC to maintain the livability of its communities and to enhance its attractiveness at major tourist destination. HCPC encourages project developers, concerned authorities, agencies and the communities to proactively engage in the development, rehabilitation and preservation of Garden Houses within the Hue city.

This policy (plan) intends to lay a strategic and planning foundation to initiate a course of developing Garden Houses for tourism purposes, together with actions for promoting Non-motorized transport system such as walking, cyclo, to access the Garden Houses in Hue City.

Policy Statement

Hue City People’s Committee will consult and co-ordinate with relevant government departments and concerned stakeholders in developing an institutional and policy framework, and implementation strategies for developing Garden Houses for sustainable urban tourism in Hue City.

The objectives of the city/provincial Garden House policy/plan may include, but not limited to⁹- The People’s Committee of Hue Province should appoint the following departments with responsibilities such as-

1. Hue city People’s Committee to:
 - Lead and coordinate with relevant agencies for decision of the Thua Thien Hue Province People's Committee on management and protection policies Hue garden houses.
 - Lead and coordinate with relevant departments for the implementation of the Scheme Management Committee of Hue City People's Committee and the Council of the investigation, for assessment, evaluation and classification of the garden; prepare and submit list of 150 typical garden to Thua Thien Hue Province People's Committee for approval; prepare research proposals addressing the procedures for the application of policies to protect the garden Hue as prescribed.
 - To assume the prime responsibility and coordinate with the Departments of Construction, Natural Resources and Environment, Finance and other relevant research agencies for the creation of the fund to address the land needs of the garden house owners.
 - To direct the functional departments and wards for implementation garden houses protection scheme.
2. Department of Finance to assume the prime responsibility for coordination with the relevant departments and Hue People’s Committee to establish Hue Garden House Conservation Fund for management and use of funds; and to issue mechanism for the exemption to pay taxes for Hue garden houses.
3. Department of Planning and Investment to assume the prime responsibility for coordination with the Department of Finance to allocate sufficient funds in the annual plan for Hue city

⁹ Based on Policy Brief developed by Hue City Centre for International Cooperation.

People's Committee and to organize the effective schedule and content of the proposed projects.

4. The Tourism Department to coordinate with the Hue People's Committee and relevant research agencies, designers, organizers to broadcast programs for promoting garden houses for touristic purposes.
5. Levels within all the related government departments to contribute in the successful implementation of the objectives set by the project, as prerequisite for protection, conservation, replenishment and efficient exploitation of the historical and cultural values of Hue garden houses.

Appendix 4: Project Brochures

Appendix 4a: Project brochure of Chiang Mai municipality

Objectives of the Project

1. To develop scientific knowledge and capacity for quantifying the greenhouse gas emissions from the tourism sector
2. To develop plans and policies to mitigate the greenhouse gas emissions
3. To provide opportunities for creation of decent and green jobs for men and women working in tourism sector, particularly the low income groups
4. To provide a public forum for community learning and publication

Activities of the Project

Some of the planned activities during January – November 2012 are:

1. Calculate the GHG emissions related to tourism sector in Chiang Mai Municipality by using Blank Carbon® Tool
2. Prioritize potential mitigation options on the basis of GHG emission inventory of the tourism sector
3. Identify income generation, job opportunities and effect on gender equality for the GHG emission mitigation options
4. Develop sustainable urban environmental policies and plans towards achieving pro-poor and gender-responsive tourism sector

The activities will be carried out in consultation with local partners, such as, Chiang Mai provincial Office of Tourism and Sport, Chiang Mai Guide Association and etc. and with AIT and Hue city in Vietnam.

Expected Results

1. Reduced the green house gas emission from the direct and indirect activities of tourism sector
2. Increased opportunities for gender responsive green and decent jobs in low income group communities
3. Increased participation of communities in policy making process

Background

Many activities related to tourism have negative impact to the environment due to release of air emissions, solid waste and wastewater disposed. These affect the quality of the environment either directly, indirectly, or in short term and long term.

Chiang Mai municipality of Thailand and Hue city of Vietnam are one of the growing urban areas that have been attracting tourists each year due to its natural and cultural resources. One of the major negative impacts of the growing tourism in these areas is the emission of greenhouse gases thereby causing global warming and ultimately climate change. There is urgent need to study and research the quantity and areas of tourism sector that have the most carbon footprint so that the policies can be developed to mitigate impacts and to manage the urban tourism sector for its sustainable growth.

The city mayor of Chiang Mai municipality, Mr. Tassanee Sunaungsakorn, has expressed his commitment for such study and has assigned public work bureau of Chiang Mai municipality to cooperate with the Asian Institute of Technology (AIT) and Hue City of Vietnam to undertake such research. The research is sponsored by the Sustainable Mekong Research Network (SMERN) and the Climate Development Knowledge Network (CDKN) under the research theme Sustainable Urban Tourism through Low Carbon Initiatives experience from Hue and Chiang Mai. The research will also look at the opportunities for generating gender responsive green and decent jobs in the tourism sector especially for the urban poor groups. The results of the research will contribute in developing sustainable urban tourism policies and at the same time also enhance the image of Chiang Mai as a sustainable and environment friendly destination in the global forum.

Introduction

เชียงใหม่เป็นเมืองที่กำลังพัฒนาอย่างรวดเร็วทั้งทางด้านเศรษฐกิจ สังคมและวัฒนธรรม มีนักท่องเที่ยวต่างชาติจำนวนมากเข้ามาเยี่ยมชมและท่องเที่ยวในเชียงใหม่เป็นประจำทุกวัน ซึ่งก่อให้เกิดมลพิษทางอากาศและเสียงดัง โดยเฉพาะอย่างยิ่งจากการท่องเที่ยวที่เพิ่มขึ้นอย่างรวดเร็วและมีความหนาแน่นมากขึ้นในเชียงใหม่

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Access from website: http://sutourism.files.wordpress.com/2012/03/brochure_cm_sumernetc-dkn_project.pdf

Appendix 4b: Project brochure of Hue City



OBJECTIVES:

A. In long term: To achieve sustainable urban tourism in Chang Mai and Hue cities by promoting low carbon initiatives.

B. In short term:

1. To develop scientific knowledge/evidence on GHG emission in tourism sector that contributes to the decision making process.
2. To recommend GHG mitigation options while creating decent jobs for women and men in these cities, especially targeting lower income groups.
3. To disseminate lessons learned through publications, media and various events/forum, etc.

2. Medium term:

1. Reduced GHG emission intensities in the tourism sector of the two cities.
2. Increased decent employment for women and men in low income groups in the two cities.
3. Increased participation of women in the planning and decision-making process.

3. In short term:

1. Calculate the GHG emissions related to tourism sector in Hue city by using Global Carboned Tool.
2. Prioritize potential mitigation options on the basis of GHG emission inventory of the tourism sector.
3. Identify income generation, job opportunities and effect on gender equality for the GHG emission mitigation options.
4. Develop sustainable urban environmental policies and plans towards achieving pro-poor and gender-responsive tourism sector.

Hue

a green, clean and beautiful city

**ĐỢI AN PHÁT TRIỂN DU LỊCH ĐÔ THỊ BỀN VỮNG
THÔNG QUA CÁC SÁNG KIẾN
GIẢM THIỂU KHÍ THẢI CARBON:
KINH NGHIỆM TỪ HUẾ VÀ CHANG MAI**

**SUSTAINABLE URBAN TOURISM THROUGH
LOW CARBON INITIATIVES:
EXPERIENCES FROM HUÉ AND CHANG MAI**



THÔNG TIN CHUNG:

Là thành phố di sản và lễ hội nổi tiếng của Việt Nam, Huế từ lâu đã được biết đến trong và ngoài nước và là điểm tham quan, khám phá quan trọng trong hành trình xuyên Việt của hàng triệu du khách mỗi năm. Ngành du lịch và dịch vụ cũng được chính quyền các cấp xác định là động lực trò quan trọng trong việc phát triển kinh tế xã hội tại địa phương.

Đi kèm với phát triển du lịch, chính quyền và nhân dân thành phố Huế cũng quan tâm sâu sắc đến việc bảo vệ môi trường, với phương châm xây dựng một thành phố Xanh, Sạch, Đẹp tiêu biểu của Việt Nam và mong muốn đóng góp một phần để giải quyết vấn đề bức thiết hiện nay của cộng đồng thế giới: biến đổi khí hậu và sự ấm lên toàn cầu.

Cùng với quan hệ hợp tác lâu dài và tốt đẹp với Viện Công nghệ Châu Á (Asian Institute of Technology - viết tắt là AIT), cũng như nhiều sự tương đồng trong các mặt kinh tế, xã hội với thành phố Chiang Mai - Thái Lan, Ủy ban Nhân dân thành phố Huế sẽ phối hợp cùng hai đối tác trên để triển khai một dự án hướng đến việc phát triển du lịch bền vững tại địa phương. Ngoài ra dự án còn có sự hỗ trợ về nghiên cứu của Khoa Môi trường - Đại học Khoa học Huế. Dự án với tên gọi: "Phát triển du lịch đô thị bền vững thông qua các sáng kiến giảm khí thải carbon: Kinh nghiệm từ Huế và Chiang Mai" do Mạng lưới Nghiên cứu Mekong bền vững (Sumernet) và Mạng lưới Kiến thức về Khí hậu và Phát triển (CDKN) tài trợ. Đây là một dự án nghiên cứu nhằm chuyển tải các thông tin về các chất khí nhà kính (GHG) thải ra từ các hoạt động trong lĩnh vực du lịch và áp dụng các giải pháp giảm thiểu khí thải vào thực tế với mong muốn tạo ra thêm công ăn việc làm cho người dân địa phương. Kết quả dự án cũng là cơ sở để cung cấp thời là khuyến nghị để tổng hợp yếu tố biến đổi khí hậu vào các chính sách phát triển của chính quyền địa phương. Thời gian thực hiện dự kiến của dự án là từ tháng 10/2011 đến tháng 11/2012.



MỤC TIÊU CỦA DỰ AN

Hạt thành phố Huế và Chiang Mai đạt được việc phát triển du lịch đô thị bền vững thông qua việc thực hiện các sáng kiến giảm thiểu carbon.

1. Phát triển in thời khoa học và các thể GHG trong ngành du lịch nhằm góp phần vào quá trình ban hành chính sách của chính quyền địa phương.
2. Đề xuất các giải pháp nhằm giảm thiểu GHG và đồng thời tạo công ăn việc làm cho người dân địa phương, đặc biệt hướng đến nhóm đối tượng khó khăn.
3. Phổ biến các bài học kinh nghiệm qua báo chí và truyền thông.

Nhiệm vụ nghiên cứu:

1. Giảm thiểu các phát thải GHG trong ngành du lịch tại hai thành phố Huế và Chiang Mai.
2. Tăng cường ăn việc làm cho người dân địa phương.
3. Tăng cường sự tham gia của người dân, đặc biệt là phụ nữ, vào quá trình ban hành chính sách tại địa phương.

Nhiệm vụ truyền thông:

1. Tìm kiếm thị trường kinh doanh ngành du lịch bền vững tại Asian Continent.
2. Xây dựng một quyển cẩm nang AIT-CDKN về kinh nghiệm giảm thiểu khí thải.
3. Các bài báo, cuốn tài liệu về các vấn đề liên quan đến ngành du lịch bền vững và môi trường sẽ được gửi đến các chuyên gia trong ngành.
4. Phát triển các chủ trương và chính sách môi trường để có tác động hướng đến việc ngành du lịch vì người nghèo và bình đẳng.

BACKGROUND:

Being as the well-known city of heritage and festival locally and regionally in Vietnam, Hue has been an attractive destination for millions of tourists every year. Tourism and services are also considered by the government as the primary role to develop local socio-economy for a long time. Not only does the city promote tourism, the government and its citizens also show great devote to the protection of the environment, global warming reduction and climate change resilience.

Upon this motivation, and based on the close cooperation with the Asian Institute of Technology and the similarity to Chiang Mai city of Thailand, the People's Committee of Hue city is going to collaborate actively with these two partners on the research project: Sustainable urban tourism through low carbon initiatives: Experiences from Hue and Chiang Mai. Moreover, The Department of Environmental Science-Hue University of Sciences will join as local research partner. The research gets the sponsorship from Sustainable Mekong Research Network (Sumernet) and Climate and Development Knowledge Network (CDKN). The purpose of research is to translate carbon emission information of tourism sector and put into practice low carbon emission measures by creating decent jobs for the population to alleviating poverty. It is expected that the research outputs will foster the development of action policies related to climate compatible urban sustainable tourism development. Duration: January 2012 - November 2012.



Access from the website:
http://sutourism.files.wordpress.com/2012/03/brochure_hue_sumernet-cdkn_project.pdf

Appendix 4c: Project brochure of AIT

SUSTAINABLE URBAN TOURISM THROUGH LOW CARBON INITIATIVES: EXPERIENCES FROM HUE AND CHIANG MAI



SUSTAINABLE URBAN TOURISM

231 million people lived in small and medium cities in Asia in 1950. It increased to about 1.8 billion in 2010. This leads to higher resource use and environmental issues in the cities. The local authorities and planners need to address resource use efficiency of cities and the greenhouse gas (GHG) emissions to manage the urban environment.

The Asian Institute of Technology (AIT) with support from the Sustainable Mekong Research Network (Sumernet) and the Climate and Development Knowledge Network (CDKN) has initiated a research on "Sustainable Urban Tourism through Low Carbon Initiatives: Experiences from Hue and Chiang Mai". This research aims to explore strategies for reducing GHG emissions in the urban tourism sector of Hue and Chiang Mai cities and promotion of the tourism sector. These two cities are growing cities in the Mekong region, and the cities are interested in using opportunities for climate compatible urban tourism development. The tourism sector is important economic sector for both cities which encompasses many traditional sectors such as buildings, transport, recreation, etc. These sectors also provide employment for large number of population.

PARTNER CITIES

Hue City, Vietnam

Hue is the capital city of Thua Thien Hue province. The city covers 71 km² of land, and is located in central Vietnam on the banks of the Perfume River. It is about 700 km south of the national capital of Hanoi. Hue is best known for its historical monuments, greeneries and variety of sites of outstanding natural beauty. The city has twice received UNESCO accreditation, once when its royal citadel complex was recognized as a world cultural heritage site in 1993, and again for Nha Nhac – Royal Court Music, which was listed as a traditional intangible heritage in 2003.



Chiang Mai Municipality, Thailand

Chiang Mai Municipality was established in the heart of Chiang Mai City in 1932. It covers an area 40 km² land and located 700 km north of Bangkok. Among the highest mountain in the country, the city is on the Ping River, a major tributary of the Chao Phraya River. It is also a well-known historical city with rich cultural heritage and environmental amenities. In the last ten years, Chiang Mai's economy has grown continuously, largely driven by the commercial sector and tourism.

OBJECTIVES

- To improve understanding and assist in the reduction of carbon emissions in urban tourism sector
- To recommend GHG mitigation policies and plans that could generate green and decent jobs for women and men, especially targeting lower income group

Activities of the Project

1. Conduct greenhouse gas emission analysis on tourism related activities in Hue and Chiang Mai;
2. Prioritize potential GHG mitigation options on the basis of GHG emissions inventory of the tourism sector;
3. Identify income generation, job opportunity and effect on gender equality, based on the mitigation options;
4. Organize city visits to observe/share experience related to tourism activities; and
5. Develop sustainable urban environmental policies and plans towards achieving pro-poor and gender responsive tourism sector.

Expected outcomes

- Planned activities in place to reduce GHG emission intensity in the urban tourism sector of the two cities.
- Planned activities in place for creating more green jobs for women and men in low income groups.

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SPONSOR: SUMERNET



The Sustainable Mekong Research Network SUMERNET works to support a long-term research network that informs and influences policy development on sustainable development issues in the Mekong region. Launched in 2005 with support from the Swedish International Development Cooperation Agency (Sida), and more recently the Climate and Development Knowledge Network (CDKN), SUMERNET now includes 40 member organizations and has supported 20 pioneering research projects in Greater Mekong Sub-region.

ASIAN INSTITUTE OF TECHNOLOGY



AIT
Asian Institute of Technology

The Asian Institute of Technology (AIT) is an international intergovernmental organization of higher learning promoting sustainable development in the region through higher education, research, capacity building and outreach.

The Energy Field of Study (FoS) at AIT has been involved in capacity building in energy-related areas since 1979, with emphasis on promotion of Renewable Energy, Energy Efficiency, Greenhouse Gas Emissions Mitigation and Energy for Sustainable Development.

The Gender and Development Studies (GDS) has been involved to work as a regional center of excellence in the field of gender, technology and development studies, and to integrate gender as a key intellectual perspective and ethical concern in AIT as well.

PROJECT PERSONNEL

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Access from the website: http://sutourism.files.wordpress.com/2012/12/sumernet-cdkn-leaflet_ait.pdf

Appendix 5: Boundary partner and consultation meetings

Appendix 5a: The major outputs of the boundary partner meeting in Hue City, Vietnam,
17 May 2012

The potential strategies for employment discussed during the boundary partner meeting

The proposed strategy

Designate an area to promote green houses for urban green tourism. Promote access to the area by non-motorized vehicle, and promote vegetable production to serve vegetarian food in the area.

Expected GHG emission reduction:

- Through promotion of non-motorized vehicles (reduction in transport-related emission).
- Through promotion of vegetable production (reduction in freight-related emission since many vegetables are imported from outside)

Expected employment creation:

- Through increased tourist visit to green houses, workers in green houses are expected to grow (both women and men).
- Through increase in vegetable production, increase in employment in vegetable gardens is expected to grow (both women and men)
- Through increase in tourist visits and selling of vegetables to market, increase in employment for non-motorized vehicle service providers are expected to grow (more men)
- Through increase in tourist visits to the area, increase in employment through vegetarian food service vendors is expected to grow (more women).

The Next Step

1. Need to identify the target area
 - Where is the potential area to develop garden houses?
 - What is the route from the city center to the garden house area? (distance, road condition)
 - Is there any community organization that exists in the potential target area?
 - What is the competing destination? (Will the garden house be an alternative destination for certain tourist's destination?)
2. Collect some secondary statistics
 - Number of tourist (at present) (Vietnamese, outside countries by nationality)
 - Number of garden houses in the target area
 - Number of cycle drivers in Hue municipality
 - Number of bicycles for rent
 - Number of population in the target area and their occupation and income profile
 - Estimated income from street food vending; from vegetarian restaurants; from visitors to garden houses

3. Estimate the changes in GHG emission

- Based on the estimate of (a) potential increase in number of tourists, (b) potential change in the destination of tourists (they will come to garden house instead of other places), estimate the potential reduction in GHG emission.

4. Employment study

The project aims to increase employment opportunity for the poor especially for poor women. In this light, the employment study will assess (a) the extent to which targeted women and men will be interested in the suggested occupation created, (b) the skill capacity of the target people to benefit from the opportunity created, (c) check whether there is anyone who might be negatively affected by the scheme. Since detailed employment/ earnings/ skill information is not available in the area, we will conduct a primary data collection to make the assessment.

- Targeted respondents:
 - Garden house owners
 - Cyclo drivers
 - Bicycle rental operators
 - Workers in garden house/ vegetable gardens
 - Women and men in the low income households in the target area
 - Vegetarian/ local food vendors/ restaurant owners (if there is any)
 - Tourists

Method

Key informant interviews

- With tourism operators on the feasibility and attractiveness of the proposed scheme. (around 5 agencies interested in green tourism)

Individual interviews using semi-structured questionnaire:

- Garden house owners (50 respondents – randomly selected from the target area):
 - Interest in receiving tourists/ increasing vegetable production
 - Profile of the garden (ownership, size of garden, who maintain the garden, cost to maintain garden)
 - Profile of the owner (occupation and income source, earnings level, members of households, hired people)
 - Opinion on the suggested scheme.
 - Support needed
- Garden house (potential) workers

Purposively selected from non-garden house households in the target area and 2 km vicinity (area where they can commute by using non-motorized vehicle or on foot to work at the garden houses).

From the list from the registered households in the area, discuss with village leaders for poor income households. Among the poor income households, randomly select 200 households and interview 100 men respondents and 100 women respondents. They are interviewed since they are expected to benefit from the increased tourists coming to garden houses. Interview questions will include

- Current occupation and earnings, and time spent for employment
- Personal background (education, training, age, experience)
- Interest in/ opinion on the suggested scheme

- Cyclo drivers

From the list of registered cyclo drivers of the cyclo union, randomly select 50 drivers as respondents.

Interview questions will include

- Current working hours and area
- Current earnings and number of customers, distance per customer
- Ownership of vehicle
- Customer profile (nationality, purpose, etc)
- Experience (number of years in the job, other experience)
- Personal profile (members of household, education, age)
- Interest in/ opinion on the suggested scheme

- Tourists

Tourists are interviewed to assess the interest to the suggested scheme. 10 hotels (or tour agency?) in Hue city, who will be interested in the proposed scheme, will be selected. 10 tourists (half women, half men; distribution of tourists by nationality to be decided after we get information on the profile of tourists in Hue) will be selected by stratified random sampling. Questions include:

- Personal profile (nationality, age, sex)
- Stay in Hue (length of days, visited places, mode of transportation used)
- Preferred mode of transportation in the city
- Preferred food to eat in the city
- Information source on tourist attraction of Hue
- Interest in/ opinion on suggested scheme

Focus group discussion

Focus group discussion will be conducted with the group of people below to assess the feasibility and interest to the suggested scheme. Community people living in the target area (two FGD for women's group, and two for men's group). FGD for Cyclo drivers. The discussion topics will be on

- Interest on the suggested scheme
- What are the expected benefits
- What are the risks/ disadvantages
- Suggestions

5. Next stakeholders' meeting

The result of the study will be reported to the next stakeholders' meeting. The presentation will include

- Outline of the suggested scheme
- Estimated changes in tourism activities (number of tourists, number of business operators, changes in transportation)
- Estimated changes in employment (number of women and men workers' jobs newly created, expected increase in income for different group of people)
- Estimated reduction of GHG through the scheme
- Risks/ problems
- This meeting is to discuss these findings and agree on a certain policy/ program.

Boundary Partners Meeting in Hue city, Vietnam

Time: Thursday May 17, 2012

Venue: Third floor, Center of International Cooperation of Hue City

01 Le Hong Phong St, Hue City

Host: Mr. Ngo Anh Tuan; Vice – Chairman of Hue City People’s Committee

Time	Activity	Moderator
8:00 – 8:30	Registration	
8:30 – 8:45	Speech of Leader of Hue city People’s Committee	Mr. Ngo Anh Tuan; Vice – Chairman of Hue City People’s Committee
8:45 – 9:00	Introduction	Ms. Anh Thu - Officer of Center of International Cooperation of Hue
9:00 – 9:30	Reporting the result of Bilan Carbon analysis in tourism of Hue City	Mr. Tran Anh Tuan-Environment Department, Hue Science University
9:30 – 10:00	Session 1	Mr. Tran Anh Tuan-Environment Department, Hue Science University
10:00 – 10:15	Tea break	
10:15 – 10:45	Session 2	Mr. Le Dinh Gia- Director of Hue Travel Company
10:45 – 11:00	Conclusion	Mr. Ngo Anh Tuan; Vice – Chairman of Hue City People’s Committee
11:00 – 11:15	Introducing next activity of the project	Ms. Anh Thu - Officer of Center of International Cooperation of Hue

List of participants in boundary partners meeting 17/05/2012

S. No.	Name and address
1.	Mr. Ngo Anh Tuan - Vice-Chairman Hue city People’s Committee
2.	Mr. Tran Quang Nhat- Hue city Youth Union
3.	Representative of Tricycle group (belong to Hue city Labors Federation)
4.	Mr. Le Dinh Gia - Director of Hue Travel Company
5.	Mr. Nguyen Van Trong - Owner of Garden house 19 Kim Long ward, Hue city
6.	Mr. Le Ba Huong- Green Travel agency
7.	Ms. Phan Thi Thuy- Vice-Director of Green hotel
8.	Mr. Bui Quoc Vuong - Management Board of Nguyen Dinh Chieu night street
9.	Ms. Vo Thi Duyen - Dong Kinh Trade and Tourism Ltd Company
10.	Representative of Bao Minh hotel
11.	Mr. Phan Van Hai – Director of Center for Encouragement of Self-Reliance
12.	Ms. Tran Thi Phuong Cuc - Center for Encouragement of Self-Reliance

13.	Ms. Nguyen Bich Thuy; Thua Thien Hue newspaper
14.	Mr. Phi Tan – Thua Thien Hue Television
15.	Mr. Thanh Hai - Thua Thien Hue Television
16.	Mr. Pham Khac Lieu - Environmental Department, Hue Science University
17.	Mr. Nguyen Anh Tuan - Environmental Department, Hue Science University
18.	Mr. Nguyen Nhien – Director of Hue city Center of International Cooperation
19.	Mr. Nguyen Ich Huan – Vice-Director of Hue city Center of International Cooperation
20.	Ms. Le Thi Hong Thuy-Hue city Center of International Cooperation
21.	Ms. Nguyen Thi Anh Dao- Hue city Center of International Cooperation
22.	Ms. Dinh Thi Thuy Hang- Hue city Center of International Cooperation
23.	Dr. Kyoko Kusakabe – AIT
24.	Ms. Huong Giang – netcodo e-news

Appendix 5b: First Boundary Partners Meeting in Chiang Mai Municipality
26 July 2012 at Kantary Hills Chiang Mai Hotel, Thailand

The briefly report is presents the content of the firstly boundary partners meeting on “Sustainable Urban Tourism through Low Carbon Initiative: Experience from Hue and Chiang Mai” project. The boundary partners meeting were arranged by Chiang Mai municipality to present background information and rational of a project and working will be done with boundary partners. Furthermore, the meeting has opportunity for boundary partners to give feedback and discuss about mitigation options while create green and decent job in community for the project.

Objective of the meeting

- To give information about the “Sustainable Urban Tourism through Low Carbon Initiative: Experience from Hue and Chiang Mai” project.
- To present the work done in Chiang Mai
- To discuss about mitigation options in Chiang Mai
- To create a green and decent job in community

Objective 1: To present about the “Sustainable Urban Tourism through Low Carbon Initiative: Experience from Hue and Chiang Mai” project.

Objective 2: To present result of Bilan Carbone analysis of tourism sector in Chiang Mai related to “Sustainable Urban Tourism through Low Carbon Initiative: Experience from Hue and Chiang Mai project”.

Objective 3: To discussion about mitigation options due to Bilan Carbone’s results. The participants discussed and suggested many mitigation options with 3 criteria as mitigation, feasibility and green job creation. The 13 mitigation options are given below;

1. Forestation or plantation
2. Non-Motorized Transport
3. Energy efficiency
4. Waste management
5. Communities travelling
6. Traveler guide book
7. Free shuttle bus
8. Food wastes
9. Furniture recycling
10. Waste to energy
11. Urban Farm
12. Green building
13. Reduction waste from original source

Among these mitigation potions, participants selected 5 important and suitable options for the Chiang Mai municipality which are as follows:

1. Energy efficiency as electricity used in tourism sector
2. Increasing forestation or plantation
3. Production of animal feed from food wastes
4. Promotion of green building
5. Non-motorized transport

Objective 4: To create a green and decent job in community while reduce GHGs in tourism sector. This option is not decided yet.

Conclusions

1. The first boundary partners meeting was held in Chiang Mai, Thailand.
2. The meeting was organized by Chiang Mai municipality.
3. The participants were from Chiang Mai municipality, the Chiang Mai guide association, The Chiang Mai provincial of tourism and sport, The Chiang Mai Tourism business association, The Chiang Mai 's restaurant club, The Hugchiangmai organization, Media, and observers as Chiang Mai University, Chiang Mai Rajabhat University and Asian Institute of Technology.
4. The boundary partners understand the project and the GHGs emissions from tourism sector in administrative area of Chiang Mai municipality.
5. The boundary partners selected 5 mitigation options for Chiang Mai following:
 - Energy efficiency as electricity used in tourism sector
 - Increasing forestation or plantation
 - Production of animal feed from food wastes
 - Promotion of green building
 - Non-motorized transport
6. The best mitigation options with creation of jobs are not finalized yet.
7. The next boundary partners meeting (2nd) will be on 27 September 2012 in Chiang Mai.

Boundary Partners Meeting in Chiang Mai municipality, Thailand

July 26, 2012

Venue: Kantary Hills Hotel, Chiang Mai

Time	Activity	Moderator
9:00 – 9:10	Registration	
9:10 – 9:25	Welcome address and opening ceremony	Mr. Trinnawat Suwanprik
9:25 – 9:45	Introduction	Mr. Trinnawat Suwanprik - Chiang Mai Municipality
9:45 – 10:00	Reporting the result of Bilan Carbon analysis in the tourism sector of Chiang Mai Municipality	Mr. Ekawit Meteejaroenwong
10:00 – 10:15	Existing tourism related employment situation in Chiang Mai Municipality	Mr. Trinnawat Suwanprik - Chiang Mai Municipality
10:15-10:30	<i>Tea break</i>	
10:30 – 11:45	Discussion session	Mr. Trinnawat Suwanprik / Dr. Kyoko Kusakabe
11:45 – 12:00	Conclusion/ next activity of the project	Ms. Trinnawat Suwanprik- Chiang Mai Municipality
12:00	Lunch	

Appendix 5c: Brief outputs of the second local partner meeting and city to city visit in Hue city, Vietnam, 28 August 2012

Activity: The 2nd local partner meeting and city to city visit

Date: August 28, 2012

Duration: from 8:00 am to 12:00 am

Location: Third floor of Hue City Center for International Cooperation (HCCIC)

1. The 2nd local partner meeting and city to city visit was organized on 28 August 2012 in Hue City. Mr. Trinnawat Suwanprik from Chiang Mai, Mr. Pravakar Pradhan from AIT, and boundary partners from Thua Thien Hue province, Hue city and other related agencies participated on it.
2. The main aim of this program is to observe/share real life experience related to tourism activities initiated in each city. These activities will provide value addition to personnel of both cities in their work.
3. Some initiatives are city specific, and it is expected that the city participants can learn from each other to reduce their existing GHG level in tourism sector while creating decent jobs. For example, Hue city has recently implemented home stay and garden house concept in the city to promote tourist which might be lesson for Chiang Mai. Similarly, Chiang Mai has developed walking and cycling routes within the city area and photovoltaic traffic & street lights.
4. At the meeting HCCIC introduced background information, some policies and plans on Hue city and its tourism related activities. It also discussed about how to implement policy (e.g. Hue Garden Houses Protection Policy Scheme) efficiently so that local people achieve maximum benefit from it.
5. It was a fruitful discussion related tourism activities in Hue city and HCCIC hopes that it was an opportunity for the Chiang Mai to learn about such policies. The field visit was organized to observe and understand the garden houses located in Huong Long and Kim Long wards. It provided an opportunity for real life experience to the visitors. HCCIC hopes the knowledge gained from this visit will provide an added value to the overall research outputs of the project.
6. Mr. Trinnawat Suwanprik from Chiang Mai also introduced some interesting tourism related information about Chiang Mai, and HCCIC learnt how to advertise tourism services from his presentation.
7. Although, Chiang Mai has many differences from Hue City, HCCIC hopes that the lessons learnt especially from the Garden Houses can also be useful to Chiang Mai municipality to further promote green tourism initiatives in their city.

**Second local partner meeting and city to city visit in Hue city, Vietnam,
28 August 2012**

Duration	Activity	Host
8:00 – 8:15	Registration	
8:15 – 8:20	Introducing guests	
8:20 – 8:30	Welcome speech	Mr. Ngo Anh Tuan – Vice Chairman of Hue city People’s committee
8:30 – 8:50	Upcoming project activities and responsibilities Discussion on comments provided by Sumernet-CDKN on the progress report submitted on 31 July 2012.	Mr. Nguyen Ich Huan – Vice-Director of Hue city Center for International Cooperation
8:50 – 9:20	Discussion	Mr. Nguyen Nhien – Director of Hue city Center for International Cooperation
9:20 – 9:40	<i>Teabreak</i>	
9:40 – 10:00	Policies, plans and activities related to tourism sector in Hue city: (Local action to deal with energy and climate change issues while creating decent jobs related to tourism sector in Hue city)	Mr. Le Huu Minh – Vice Director of Hue Province Tourism Department
10:00 – 10:30	Discussion	Mr. Nguyen Nhien – Director of Hue city Center for International Cooperation
10:30 – 10:40	Brief information on field visit, by Hue city	Representative of Huong Long ward People’s committee
10:40 – 11:00	Background information on Hue city and tourism related activities	Mr. Nguyen Thanh Tri – Vice Director of Hue City Economic Department
11:00 – 11:15	Sharing a lesson learn from the field visit	Mr Trinnawat – Chiang Mai City
11:15 – 11:30	Conclusion	Mr. Nguyen Nhien – Director of Hue city Center for International Cooperation
12:00	<i>Lunch</i>	
14:00	Field visit	
18:00	<i>Dinner</i>	

List of participants in partners meeting on 28 August, 2012

1. Mr. Ngo Anh Tuan - Vice-Chairman Hue city People's Committee
2. Mr. Le Huu Minh – Vice-Director of Hue province Tourism and Culture Department
3. Mr. Nguyen Thanh Tri – Vice-Director of Hue City Economy Department
4. Leader of Huong Long ward People's Committee
5. Leader of Kim Long ward People's Committee
6. Mr. Le Dinh Gia - Director of Hue Travel Company
7. Mr. Truong Quang Trung - Hue city Youth Union
8. Representatives of Tricycle group
9. Owner of Garden house in Kim Long and Huong Long ward, Hue city
10. Representative of Green Travel agency
11. Representative of Management Board of Nguyen Dinh Chieu night street
12. Representative of Dong Kinh Trade and Tourism Ltd Company
13. Representative of Bao Minh hotel
14. Mr. Phan Van Hai – Director of Center for Encouragement of Self-Reliance
15. Ms. Dinh Thi Thuy Hang - Center for Encouragement of Self-Reliance
16. Representative of Thua Thien Hue newspaper
17. Mr. Pham Khac Lieu - Environmental Department, Hue Science University
18. Mr. Nguyen Anh Tuan - Environmental Department, Hue Science University
19. Mr. Nguyen Nhien – Director of Hue city Center of International Cooperation
20. Mr. Nguyen Ich Huan – Vice-Director of Hue city Center of International Cooperation
21. Ms. Le Thi Hong Thuy- Hue city Center of International Cooperation
22. Ms. Nguyen Thi Anh Dao- Hue city Center of International Cooperation
23. Ms. Nguyen Thi Khanh Linh- Hue city Center of International Cooperation
24. Ms. Nguyen Thi Minh Ngoc - Hue city Center of International Cooperation
25. Ms. Nguyen Thi Hong Hanh - Hue city Center of International Cooperation
26. Mr. Pravakar – AIT
27. Mr. Trinnawat – Chiang Mai city

Appendix 5d: Consultation Meeting in Chiang Mai, Thailand

1 October 2012

1. Introduction

Regarding the project “sustainable urban tourism through low carbon initiatives: experience from Chiang main and Hue”, the boundary partner meeting was organized by Chiang Mai municipality on 1 October 2012 at Kantary hills Chiang Mai Hotel. Details are provided in the agenda as an attached document. The objective of the meeting was to identify suitable policies for Chiang Mai and Hue as well as to incorporate the opinion of local organization and affected people. The details of program are following;

2. Objectives

To identify suitable policies and plans to promote income generation and decent job creation by mitigating GHG emission in tourism sector or tourism services providers

3. Details

Chiang Mai is located in the north of Thailand surrounded by beautiful mountain ranges. With a population of about 150,000 people Chiang Mai is the second largest City of Thailand. Although Chiang Mai has become the northern center of economic growth and investment, it still keeps close ties to its unique culture and tradition. Many old temples can be visited in the old center of Chiang Mai that is surrounded by a water moat. The flower festival, the temple Doi Suthep and the Zoo are just some examples that give reason to Chiang Mai’s fame as an international tourist destination.

In 2010 more than five million people visited Chiang Mai, approximately one third of the people came from Thailand itself, the rest from western countries and China. In the last decade tourism has increasingly become an important economic sector for Chiang Mai. In fact, the revenue of 39,500 million Baht in 2010 was more than one fourth of Chiang Mai’s Gross Provincial Product (GPP). Thus, a lot of local people work or benefits form the tourism sector, such as people working in hotels, tourism agencies, spas and massages, restaurants and other tourism related activities.

However, besides all the positive aspects of job creation and income generation tourism has its drawbacks when looking on its environmental impact. Using a car, generator, electricity or air-condition produces greenhouse gas (GHG) emissions, and also the use of plastic bags, a rental car or an air plane travel produces GHG-emissions even when its not directly linked to the city. In 2011 Chiang Mai’s tourism sector produced around 250,000 tons of CO₂ equ. According to a study carried out by this project most of those GHG-emissions come from large Hotels, restaurants and local transportation. Tourists using motorcycles and other motorized modes of transport not only emit GHG-emissions but also contribute to the already existing traffic congestion in the inner city. Considering the rapidly growing tourism sector and the already existing traffic congestion in the inner city, Chiang Mai Municipality is very interested in lowering the GHG-emissions related to tourism activities and promoting non-motorized-transport.

Studies reveal that currently just 23% of the Thai-tourists travel by using non-motorized-transport such as cycling (17%) and walking (6%). Most of them use a personal car or motorcycle counting 27%. In opposite, 93% of tourists prefer to walk around the city but cycling is not popular or known. This shows that the promotion of bike usage is very important and must be improved. Increasing the number of cyclists traveling among the city area can lower the usage of personal cars, motorcycles and minibuses regarding Thai-tourists. Concerning foreign-

tourists, the usage of Non-motorized transport is already very high and the campaign is not expected to further increase NMT-usage but can impose a shift between walking to cycling.

Why is Non-Motorized-Transport a suitable and effective policy for Chiang Mai?

The NMT-Campaign can cause many benefits for Chiang Mai and especially Chiang Mai's inner city is very suitable for cycling. A lot of attractive places are located in Chiang Mai's inner city and very close together. This is an advantage for NMT because it is especially suitable for short distances. Cycling or walking is a great way to enjoy and visit Chiang Mai's tourist attraction. In fact, people are able to go to any place they want without needing to pay for parking places. This also counts for the use of tricycles. Moreover, NMT does not produce any costs or is at least a lot cheaper than using minibuses or taxis instead. In general, NMT is probably the best way for tourists to enjoy the uniqueness of Chiang Mai. Besides being enjoyable, walking and cycling is also a great way to keep exercised and to stay healthy. The main benefits for Chiang Mai are the improvement of environment and air quality and the establishment of a sustainable social-economy. To ensure a successful outcome of the project some issues need to be considered. First, there should exist parking areas for bicycles. Second, Bike-rental-shops need to be promoted because currently it is very difficult to find out the location of those renting shops. In fact, the promotion of NMT is an important aspect, which can be done by cooperating with local, national and international organizations and media. In the last few years, the number of motorcycle-taxis increased being a severe competitor for tricycles. Thus, tricycles must be promoted and the number of motorcycle-taxis should be observed carefully. Many tourists question safety aspects when using bicycles, to increase the number of bicycles, bike lanes should be created in the inner city.

Job opportunities different occupational groups

- Bicycle rental shops

Bicycle rental shops are an opportunity to create new jobs. Hotels can provide bicycles for the convenience of its customers. For this reason, a new bicycle rental shop might be created close to the hotel.

Existing bicycle rental shops can make a contract as outsource with hotels close to them to provide bicycles for hotel guests. This can guarantee the income of the bicycle rental shops, and hotels save investment costs to provide own bicycles for its customers.

- Bicycle repair shops/ Bicycle repairman

The number of bicycle repair shops depends on the total number of bicycles that are used within the city area. If the NMT campaign can increase the number of bicycles, bicycle repair shops are an opportunity to create more jobs.

Bicycle repairmen that operate on-site service are another type of job creation. Because of low initial investment costs it can provide jobs for many people with currently low income. Bicycle repairmen who service on-site should use bicycles themselves, as they should not produce any GHG-emissions and should promote NMT.

Furthermore, bicycle repairmen can cooperate with bicycle rental shops and bicycle sellers. Due to its usage, bicycle rental shops can provide many nonfunctional bicycles. This also creates jobs for bicycle repairmen.

- Bicycle sellers/ Bike shops

Usually local people and long-stay tourists are those who use bicycles daily. If the inner area of Chiang Mai can be visited by bike only, local people and long stay tourists will have a reason to

buy a bicycle. This will increase the demand of bicycles in Chiang Mai and create new jobs. Firstly, people can open up new bicycle sell shops. Secondly, current bicycle sellers can employ more people to work in their shops.

- Vendors (Food/Beverage/Souvenirs)

The following job opportunities for vendors refer to the NMT-Campaign only. The current implementation plan suggests to develop the Three Kings Monument Square to the “Green Landmark of the city” offering an area to conduct environmental friendly events and festivals with a minimum amount of waste and GHG-emissions. It is expected to increase the number of visitors and potential customers for food and souvenir vendors.

- Food vendors

All ingredients should come from organic farms or zero carbon farms. This concept can create new jobs related to the production organic food. Food containers should come from a friendly environment material.

- Beverage vendors

Drinks and especially juice sold in this area should come from local fruits that come from organic farms that produce zero or less greenhouse gas. Soft drinks and alcoholic drinks should not be sold in the area, because soft drinks produce a lot of greenhouse gas during making process. Alcoholic drinks are not suitable because it is a public place that children can visit.

- Souvenir vendors

Souvenirs should follow the same concept as being green products or made from recycled materials. It helps to reduce waste and provides new jobs for people who can make souvenirs from the recycled materials.

- Tour guides

A tour guide is an interesting job for local people. Tour guides can inform travelers about important places around this area, or suggest tourist attractions that can be visited by bicycle. All operating tour guides should know about green tourism. Thus, they can inform tourists about green tourism and encourage them to care about environment when traveling around the city. In addition, tour guides can cooperate with hotels by providing trips for hotel guests. This will be an opportunity to create new jobs and hotels can provide an additional service for their customers. The provided trips must be green which means less or non GHG-emissions and should include the NMT area as one destination. This will help to promote green travel in Chiang Mai.

Furthermore, tour guides can help to create additional income for tricycle providers. Tour guides can offer trips that use tricycles for transportation. This will be good for tourists who cannot ride bicycles as well as for tricycle providers that will gain more income. Furthermore, it can create new jobs as the number of operating tricycle providers may increase.

- Tricycle providers

City visitors that do not want to walk or use a bicycle to travel around can use tricycles instead. Cooperation with hotels that may provide the tricycle service for its guests can secure income and create additional jobs. Tricycle providers can bring tourists to destinations all around the city. This will increase the income of tricycle providers and makes the job more attractive to local people. When the tourists use tricycle to travel around the city, it also helps to promote green traveling.

Tricycle providers cannot only operate as a transportation-vehicle for passengers, but can also transport goods. Tricycles can transport goods to different places around the city or operate as a postal-system. This will help companies in the city to reduce GHG emissions due to green good transportation, and save fuel costs.

- IT

The promotion of activities can create jobs in the IT sector. For example designing a bike-map or creating a website for the promotion of bicycle renting or makes a digital guide or audio guide.

- Local galleries

Local private galleries can present old traditional products and equipment that was or is used in Chiang Mai province. For example a small group of people can collect and present equipment related to traditional Chiang Mai kitchens such as sticky-rice-pods and more.

- Parking business

There still exists property that is not used for anything. Creating parking places on those areas can cause income for the owner.

- Local food institutions and traditional schools

Chiang Mai has a lot of local handcrafts such as lanterns or flags. Schools that teach how to make them can create jobs and an income generation. Similarly, cooking schools especially for northern Thai-food can have positive effect on job creation and income generation for local people.

Further suggestions from boundary partners

Several suggestions were made from boundary partners as listed below:

Recommended policies and descriptions	involved organizations	expected result	duration
bus-parking-terminal outside the inner-city			
Currently, buses can enter the inner city. In order to prohibit buses to enter the inner city, a bus-parking-terminal outside the inner-city must be offered	the governor of Chiang Mai province	less emission in the inner-city	3 - 5 years
	Chiang Mai Municipality (CMM)	reduce traffic jams	
	Land Transport Department (LTD)	promote tourism sector	
	Chiang Mai cooperation	increase income for local people protect existing tourist attractions from damage	
promotion of non-motorized transportation			
	CMM	less emissions reduce traffic jams	1 - 2 years

		promote tourism sector increase income for local people	
offering city-bikes for free costs			
City bikes should be funded and offered for free usage.	the governor of Chiang Mai province	less emissions and reduce of fossil-fuel consumption	1-2 years
establish bicycle parking areas			
	CMM	green an decent land use	1-2 years
establish a green postal-system			
Tricycles or single persons using bicycles can operate as a mail-service	the governor of Chiang Mai province	less emissions and reduction of fossil-fuel consumption	1-2 years
	CMM		
promote the use of tricycles			
	Tourism Authority of Thailand (Chiang Mai)	less emissions	1-2 years
	CMM	create green jobs	
	guide association		
reduce stationary traffic			
The reduction of stationary traffic can be achieved when offering parking places outside the inner city.	traffic police	increase space for bicycle usage	3-5 years
	LTD	increase road safety when using bicycles	
	CMM		
improve road safety			
This includes: limit the speed of vehicles, alcohol control, circuit-television, buffer between pedestrian/bicycle-lane and road	CMM	increase confidence in safety when using bikes or while walking	1-2 years
	traffic policemen LTD		
mobile bicycle-fix-shop			
mobile bicycle-fix-shops are single persons traveling by bike to get to customers.	CMM	increase the amount cyclists	1-2 years
	LTD		
campaign to encourage public effort in improving the look of city-bikes			
improving the look of city-bikes means adding new design or fixing things	CMM	increase public interest and participation	1-2 years

	Chiang Mai Sunday bike club	create bicycle society	
provide special offers for cyclists e.g. discounts, rewards,			
People that use bikes can get special offers or discounts when visiting tourist attractions or other activities.	CMM	increase use of bicycles	1-2 years

Tentative Program for Consultation Meeting in Chiang Mai, Thailand
1 October 2012

Objective of consultation meeting:

- To identify suitable policies and plans to promote income generation and decent job creation by mitigating GHG emission in tourism sector

Time	Activity	Responsible person
09.00	Registration	
9.30	Welcome address and opening ceremony	The city mayor
09.45	Introduction about the program and objective of the meeting	AIT
10.00	<ul style="list-style-type: none"> • Summary of GHG emission on tourism sector • Research results on income generation and jobs creation • Existing policies, plans and activities related to tourism sector 	Chiang Mai municipality
10.45	<ul style="list-style-type: none"> • Summary of GHG emission on tourism sector • Research results on income generation and jobs creation • Existing policies, plans and activities related to tourism sector 	Hue city
11.15	Sustainable low carbon tourism: lessons from other cities	AIT
11.45	Discussion session	
12.00	<i>Lunch</i>	
13.00	Discussion session	
14.00	Best practice on Chiang Mai Sunday walking street	Chiang Mai
14:45	Best practice on Pheun Bann Yan Vieng Chiang mai	Project Staff
15.30	Site visit briefly	Chiang Mai
16.00	Conclusion	Chiang Mai

Note: Tea & coffee breaks are available at 10.30 and 14.15

List of Participants
Consultation Meeting in Chiang Mai, Thailand
1 October 2012
At Kantary Hills Chaing Mai, Thailand

1. The deputy mayor of Chiang Mai municipality
2. The secretary for city mayor
3. Prof. Dr Kumar from AIT
4. Ms. Pujan from AIT
5. Ms. Ms.Pinh Thi Thuy Hang from Hue city
6. Ms. Nguyen Thi Khanh Linh from Hue city
7. Mr. Trinnawat Suwanprik from Chiang Mai municipality
8. Mrs. Rongrong Diriyaphant from Chiang Mai municipality
9. Ms. Patchara Mahayot from Chiang Mai municipality
10. Chiang Mai business association
11. Chiang Mai guide association
12. The deputy of tourism Authority of Thailand, Chiang Mai office
13. Chiang Mai Provincial office of tourism and sports
14. The represent from Regional Environment Office, Chiang Mai Province
15. The represent from Chiang Mai art and cultural center
16. Hug-Chiang Mai
17. Phen Bahn Yan Vueng Chiang Mai club
18. Chiang Mai University
19. The owner of souvenir shop
20. The represent form bike rental shop
21. The represent from bike seller shop
22. The represent from Tricycle drivers
23. The represent from Chiang Mai Sunday Walking street
24. The represent from The city police
25. The student and staff from Chiang Mai Rajabhat University around 70 students

Appendix 5e: Minutes of the Final Consultation Meeting 26 November 2012

List of Participants

AIT, Thailand

Prof. S. Kumar
Mr. Pravakar Pradhan
Ms. Pujan Shrestha
Ms. Srujana Goteti

Hue City, Vietnam

Ms. Khanh Linh
Ms. Dinh Thi Thuy Hang

Chiang Mai municipality, Thailand

Mr. Trinnawat Suwanprik
Mr. Georg A. Gruetzner

Apology

Dr. Kyoko Kusakabe, AIT

1. Background

The Asian Institute of Technology (AIT) organized a consultation meeting with its research partners (Chiang Mai municipality and Hue City) on 26 November 2012 at AIT, Thailand. The meeting was a last consultation meeting between the project partners under the project 'Sustainable Urban Tourism through Low Carbon Initiatives: Experiences from Hue and Chiang Mai'.

The main objective of the meeting was to discuss with the project partners about the finalization of all project related outputs such as research reports, publications, financial issues etc. (attached program in annex 1).

2. Welcome

Prof. S. Kumar, one of the principal investigators of the project from AIT, welcomed the participants from Chiang Mai municipality and Hue city. He explained the objective of the meeting and its importance in the finalization of project. He urged the participants for their maximum engagement in the meeting so that any pending issues regarding the project can be clarified and the project can be completed on time.

3. Presentations

Mr. Pravakar, research associate from AIT, presented an overview of the project, including the project objective and project activities during the project duration of 11 months. He also explained about the remaining project tasks that has to be completed within the given project timeframe. In addition, he also briefly informed the participants from Hue and Chiang Mai about SUMERNET workshop held on 22-23 Nov. 2012, and the matters discussed in that meeting.

Mr. Trinnawat Suwanprik, from Chiang Mai municipality presented the activities conducted by Chiang Mai municipality during the project. He also showed a video clip of the Mayor of Chiang Mai municipality speaking about the project. He briefed the results from the emission study, boundary partner and consultation meetings summary, city to city visits benefits, inputs to

policy brief, national story, lessons learnt from the project and recommendations for Sumernet secretariat, other partners and donors.

Ms. Linh, from Hue City, presented the activities conducted by Hue City during the project. She focused on the project completion report and elaborated its sections such as boundary partner meeting summary, city to city visits benefits, policy brief development, lessons learnt from the project and recommendations for Sumernet secretariat, other partners and donors.

4. Group Session (Afternoon)

During the group session, the participants from Chiang Mai and Hue City worked in individual groups, with representation of AIT team in each group, for further discussion on project completion report. The discussion was mainly focused on output and outcome of the project based on Logical Framework Analysis (LFA).

At the end of the group session, both the cities presented their updated LFA and Prof. Kumar gave his inputs to improve LFA.

The project partners also individually discussed about the financial status of the project with AIT, focusing on the expenses occurred till date and the remaining funds to be disbursed from the donor.

5. Conclusion

Both cities assured to submit revised version of LFA by **30 November 2012** and project completion report by **3 December 2012** to AIT.

Finally, Prof. Kumar from AIT concluded the meeting by thanking both the research partners for their involvement in the meeting and for their cooperation throughout the project duration. He hoped there will be opportunities for all the project partners together again in future.

Final Consultation Meeting at AIT
November 26, 2012
Tentative Program

Objective of the final consultation meeting:

- To finalize all projects' related outputs (research reports, publications, and others) and discuss financial issues related to project

Time	Activity	Responsible person								
8:30 – 9:00	Welcome and meeting objective <ul style="list-style-type: none"> • Project status <ul style="list-style-type: none"> ○ Accomplishment ○ Discussion 	AIT								
9:00-9:45	Presentation by Chiang Mai <ul style="list-style-type: none"> • Emission study • Boundary partner consultation • Policy Brief • National story • Indicators (outcomes and outputs) • What was learnt • Success and challenges • Most significant changes due to participation in the SUMERNET • Recommendations for SUMERNET, Secretariat, other partners and donors 	Mr. Trinnawat								
9:45-10:00	<i>Tea break</i>									
10:00–10:45	Presentation by Hue city <ul style="list-style-type: none"> • Emission study • Boundary partner consultation • Policy Brief • National story • Indicators (outcomes and outputs) • What was learnt • Success and challenges • Most significant changes due to participation in the SUMERNET • Recommendations for SUMERNET, Secretariat, other partners and donors 	Ms. Linh								
10:45-12:00	Discussion									
	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: center;">Hue</th> <th style="text-align: center;">Chiang Mai</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">Journal Article</td> <td style="text-align: center;">GHG emission analysis report/NMT research report</td> </tr> <tr> <td style="text-align: center;">-Annex 4: Table/ -progress markers</td> <td style="text-align: center;">-Annex 4: Table -progress markers</td> </tr> <tr> <td style="text-align: center;">Policy Brief</td> <td style="text-align: center;">Policy Brief/National story</td> </tr> </tbody> </table>	Hue	Chiang Mai	Journal Article	GHG emission analysis report/NMT research report	-Annex 4: Table/ -progress markers	-Annex 4: Table -progress markers	Policy Brief	Policy Brief/National story	
Hue	Chiang Mai									
Journal Article	GHG emission analysis report/NMT research report									
-Annex 4: Table/ -progress markers	-Annex 4: Table -progress markers									
Policy Brief	Policy Brief/National story									
12:00-13:00	<i>Lunch</i>									
13:00- 15:00	Discussion on Financial Matters									
15:00	<i>Closure (Tea break)</i>									

Appendix 6: Photos of the project activities

	
<p>Research partners (AIT, Chiang Mai and Hue) consultation meeting at Ramada Hotel, Bangkok, 11 January 2012</p>	<p>Research partners (AIT, Chiang Mai and Hue) consultation meeting at Ramada Hotel, Bangkok, 12 January 2012</p>
	
<p>Consultation of Hue City with the boundary partners Hue University, to conduct GHG emission data collection in February 2012</p>	
	
<p>Data collection at Ngoc Huong Hotel in Hue City</p>	<p>Data collection at Ty Tourist Transport Company in Hue City</p>



Participants of the Boundary Partner Meeting of Hue City on 17 May 2012



Mr. Tran A. Tuan from Hue University presented tourism related GHG emission in Hue City during the Boundary Partner Meeting of Hue City



AIT assisting team from CMM in interpretation of data for Bilan Carbone Analysis



Data input in Bilan Carbone Sheet by Ms. Orathin Joolapong of CMM



Participants in Chiang Mai Boundary Partner meeting on 26 July 2012



Conducting questionnaire survey in Hue city



Taking an interview with cyclo driver in Hue city



Mr. Ngo Anh Tuan, Vice Chairman of Hue City People's committee welcoming the participants



Discussion on policies and plans related to tourism sector in Hue as well as in Chiang Mai



Discussion with garden house owner in Hue city





Mr. Trinnawat Suwanprik from CMM interviewing the owner of the bike shop



The deputy Mayor from Chiang Mai municipality together with partners from AIT, Hue City and boundary partners during the consultative meeting held in Chiang Mai on 1 October 2012

Mr. Trinnawat Suwanprik from CMM discussing about the tourism related plans and policies for Chiang Mai



Project partners from Chiang Mai municipality, Hue City and AIT discussing with bicycle shop owner in Chiang Mai municipality during city visit organized on 2 October 2012

Discussion with the project partners (AIT, Chiang Mai and Hue) during the consultation meeting held on 26 November 2012 at AIT

Appendix 7: Questionnaires for research work

Appendix 7a: Data collection form for Bilan Carbone analysis

DATA COLLECTION FORM FOR BILAN CARBONE ANALYSIS (Data of 2011)

Code:

Notes:

- In case of no specific data, please provide an estimation
- No need to take into account the following circumstances:
 - * Machines, vehicles and furniture which have been in use for over 10 years
 - * Construction establishments which have been in use for over 30 years

General information

Name of tourism unit:

Number of staff and employees: persons

Number of working day/week: day

Name of informant:

Telephone number:

1- Energy

1.1. Electricity consumption in 2011:

kWh (refer to the electricity invoice)

1.2. Fossil fuel used non-vehicle purposes (e.g. electricity generator, pump, cooking, etc.):

+Petrol	liter/year
+Diesel	liter/year
+LPG	liter/year
+Coal	liter/year

2- Excluding energy

Type of air-con:	Toshiba	Capacity:	HP	Quantity:
Type of air-con:	Panasonic	Capacity:	HP	Quantity:
Type of air-con:	Trane	Capacity:	HP	Quantity:
Type of air-con:	LG	Capacity:	HP	Quantity:
Type of air-con:	Sanyo	Capacity:	HP	Quantity:
Type of air-con:	Carrier	Capacity:	HP	Quantity:

Type of air-con:	Funiki	Capacity:	HP	Quantity:
Type of air-con:	Samsung	Capacity:	HP	Quantity:
Type of air-con:	Hitachi	Capacity:	HP	Quantity:
Other types:		Capacity:	HP	Quantity:

2.2. Use of nitrogen containing fertilizer

Type of fertilizer	Urea	Amount:	kg/year
Type of fertilizer	NPK	Amount:	kg/year
Other fertilizers		Amount:	kg/year

3- Consumption of materials and goods

1.1. Metal

Aluminium	kg/year
Steel or sheet metal	kg/year
Copper	kg/year
Zinc	kg/year
Lead	kg/year
Other metals	kg/year

3.2. Plastics

HDPE	kg/year
LDPE	kg/year
PET	kg/year
PS	kg/year
PVC	kg/year

3.3. Glass

Flat glass	kg/year
Bottle glass	kg/year

3.4. Paper and cardboard

Paper	kg/year
Cardboard	kg/year

3.5. Building materials

- Masonry wall in concrete blocks	m2
- Terracotta monomur	m2

- Plaster panels	m2		
- Concrete tile	m2		
- Cement	kg/year		
- Timber	kg/year	or	m3/year
- Emulsion gravel	kg/year	or	m3/year
- Bitument	kg/year		
- Continuous reinforced concrete	kg/year		
- Others	kg/year		

3.6. Chemical products & synthetic fabrics

Chemical products	Lime	Quantity:	kg/year
	Insecticides	Quantity:	kg/year
	Soda	Quantity:	kg/year
	Acid	Quantity:	kg/year
	PPPs	Quantity:	kg/year
	Others	Quantity:	kg/year
Synthetic fabrics	Type:	Quantity:	kg/year
	Type:	Quantity:	kg/year

3.7. Agricultural products based on meals

- Total number of meals served for employees and tourists	meals/year
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3.8. Purchase of stationery, IT and consumables, and services

- Stationery	Euro/year
- IT and consumables	Euro /year
- Advertisement fee	Euro /year
- Insurance fee	Euro /year
- Internet and telephone fee	Euro /year
- Other fees:	Euro /year

4- Freight

4.1.Internal freight

Total amount of petrol used for internal road freight: litters/year
 Amount of petrol used for internal rail freight: litters/year

4.2. Outgoing freight

a. Road freight

Total amount of petrol used for outgoing road freight: litters/year

b. Rail freight (tonnes.km)

Quantity of goods and materials:	tonnes/year	Distance:	km
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4.3. Incoming freight

a. Road freight

Total amount of petrol used for outgoing road freight: litters/year

b. Rail freight (tonnes.km)

Quantity of goods and materials:	tonnes/year	Distance:	km
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5- Travel

5.1. Home to work travel by employees

Average distance between home and work	km
Average times of travel between home and work	times (normally 2 times)
Number of employees traveled by motorcycle	persons
Number of employees traveled by car	persons
Number of employees traveled by bus	persons

5.2. Travel by employees in the context of work

Type of travel:	Motorcycle	No of employees used:	Total distance:	km/year
Type of travel:	Car	No of employees used:	Total distance:	km/year
Type of travel:	Train	No of employees used:	Total distance:	km/year
<i>Plain travel:</i>				
Short haul <1000 km		Total distance:		km/year
Average haul 1000-4000 km		Total distance:		km/year
Long haul >4000 km		Total distance:		km/year

5.3. Travel of tourists – all methods

Tourists by car	Total distance:	km/year
Tourists by interurban coach	Total distance:	km/year
Tourists by motorcycle	Total distance:	km/year
Tourists by plain	Total distance:	km/year
Tourists by other methods	Total distance:	km/year

6- Wastes

6.1. Solid waste: kg/year

6.2. Incinerated waste: kg/year

6.3. Fermentable waste: kg/year

6.4. Recycled and reused wastes:

Metal: kg/year

Plastics: kg/year

Glass: kg/year

Paper: kg/year

6.5. Hazardous wastes: kg/year

6.6. Public water used: m³/year or amount of money paid: Euro /year

7- Infrastructure and assets

7.1. Building, method by surface area

Building 1 m² year of construction:

Building 2 m² year of construction:

Building 3 m² year of construction:

Others..... m² year of construction:

7.2. Miscellaneous infrastructures

Internal roadway

By bitumen	Length x width:	m x m	year of construction:
By concrete	Length x width	m x m	year of construction:

Car park

By bitumen	Length x width:	m x m	year of construction:
By concrete	Length x width	m x m	year of construction:

Building materials for miscellaneous infrastructures

Metal	Quantity	kg
Glass	Quantity	kg
Timber	Quantity	kg
Cement	Quantity	kg
Bitumen	Quantity	kg
Concrete	Quantity	kg
Quarry stone	Quantity	kg
Plastics	Quantity	kg

7.3. Vehicles, tools & machines, method by weight

Vehicles owned

- Weight:	< 1	tonnes	quantity:	year of purchase:
- Weight:	1 - <3	tonnes	quantity:	year of purchase:
- Weight:	3 - <5	tonnes	quantity:	year of purchase:
- Weight:	5 - <7	tonnes	quantity:	year of purchase:
- Weight:	≥ 7	tonnes	quantity:	year of purchase:

Tools and machine

Type	Generator	quantity	tonnes	year of purchase:
Type	Pump	quantity	tonnes	year of purchase:
Type		quantity	tonnes	year of purchase:
Type		quantity	tonnes	year of purchase:

7.4. IT, method by units

Computer with cath. tube	Quantity	year of purchase:
PC with flat screen	Quantity	year of purchase:
Printer	Quantity	year of purchase:
Photocopier	Quantity	year of purchase:
Fax machine	Quantity	year of purchase:

A lot of thanks for your kind co-operation

Appendix 7b: Questionnaire survey for NMT in Chiang Mai municipality, Thailand

1. Key informant interviews (to tourism operators/companies and government officers; tourism authority of Thailand, hotel/guest house managers) in Chiang Mai municipality

- a. What do you think of the idea of designating NMT/ bicycle route connecting three kings' monument, tourist attraction and guest houses?
- b. What was your experience during UNDP project (when they developed bicycle lanes)? How do you assess that? What was the problem about that project? How can it be improved?
- c. How do you think bicycle routes should be designed? For example.....
 - i. designating a route and putting signs to show the route (not limit motorized vehicle, but select a route where there are few vehicles and easy to cycle, and advertise that);
 - ii. designating a day in a week on which the route will be off-limits to motorized vehicles;
 - iii. making the route off-limits to all motorized vehicles throughout the week)
 - iv. other ideas (specify)
- d. What kind of jobs do you think can be newly created by setting a NMT route? Why? Do you think job creation effect will be large? Why/why not?
- e. Who do you think will benefit from establishing such routes? Why?
- f. Do you think introducing such NMT route will increase the number of tourists? Why/ why not? Which kind of tourist will increase?
- g. Do you foresee any loss in jobs by introducing such schemes? Whose job will be affected?
- h. Do you think that through introducing this scheme, it will reduce green house gas emission? Do you think tourists will use less motorized vehicles? Why/ why not?
- i. What are some problems/obstacles that you foresee?

2. Semi-structured questionnaire for bicycle shops (retailer, repair, rental) in Chiang Mai municipality, Thailand

1. Name of respondent (if possible, telephone number and current address)
2. Sex of respondent
3. Age of respondent
4. Education level of respondent
5. Place of birth
6. Since when are you living in Chiang Mai?
7. Members of household
Who are you living with?

How many of them are below the age five? Above the age 70 (who would need care work)?
8. About the business
what is your business:
sell bicycle
rent bicycle
repair bicycle
Others (specify)

Since when are you doing this business?

Why did you decide to do this business?

Why did you select this location to do your business?

Who are involved in the business?
Family members: (list people who are involved)
Number of employee __
9. Customer profile: Who are your customers?
Local Thais __ %
Local foreigners __ %
Thai tourist __ %
Foreign tourists __ %
Others (specify)

Which groups of customers are growing?
10. Current earnings (by day or by month)
11. How much percentage of your household income from your business?
12. Have your income increased in the last three years? Why/why not?
13. How do you think you can increase your business income?

Change location (specify)

Change the flow of people (how to get more people to come around to your place) (specify how)

Increase use of bicycle (specify how)

14. What are the problems that you face in your business?
15. What are the opportunities that you see in your business?
16. Do you think your business will benefit if a bicycle lane linking three kings' monument to other tourist destinations in the inner city is designated? How do you think your business will benefit from this/ why do you think this will not benefit your business?
17. Do you remember the UNDP project that designated the bicycle lane? What do you think about that? How do you think we can improve bicycle lanes in Chiang Mai inner cities?

3. Semi-structured questionnaire for vendors in Chiang Mai municipality, Thailand

1. Name of respondent (if possible, telephone number and current address)
2. Sex of respondent
3. Age of respondent
4. Education level of respondent
5. Place of birth
6. Since when are you living in Chiang Mai?
7. Members of household
 Who are you living with?
 How many of them are below the age five? Above the age 70 (who would need care work)?
8. Occupation of respondent
 What do you sell ?
 How do you sell – street, shop, market stall, etc.
 Since when are you doing this business?
 Why did you decide to do this business?
 Why did you select this location to do your business?
 Who is involved in your business?
 Family member (list who are involved)
 Number of employee __
9. Customers profile: Who are your customers and how do they come to your shop?
 Among the total number of customers, around how many percentage are local Thais, Thai tourists, foreign tourists, others (specify)?
 Among each category of customers, around how many percentage of them come to shop on foot, by bicycle, by motorbike, by car, by other modes (specify)?
 (fill in the table below)

Mode of transportation	Profile of customers			
	Local neighboring Thais __%	Thai tourists __%	Foreign tourists __%	Others (specify) __%
On foot	__%	__%	__%	__%
Bicycle	__%	__%	__%	__%
Motorbike	__%	__%	__%	__%
Car	__%	__%	__%	__%
Others (specify)	__%	__%	__%	__%

10. Current earnings (by day or by month)
11. How much percentage of your household income come from your business?
12. Have your income increased in the last three years? Why/why not?
13. How do you think you can increase your business income?
 Change location (specify)
 Change the flow of people (how to get more people to come around to your place) (specify)
 Others (specify)

14. What are the problems that you face in your business?
15. What are the opportunities that you see in your business?
16. Do you think your business will benefit if a bicycle lane linking three kings' monument to other tourist destinations in the inner city is designated? How do you think your business will benefit from this/ why do you think this will not benefit your business?
17. Do you remember the UNDP project that designated the bicycle lane? What do you think about that? How do you think we can improve bicycle lanes in Chiang Mai inner cities?

4. Semi-structured questionnaire for tourists in Chiang Mai municipality, Thailand

1. Nationality
2. Age of respondent
3. Sex of respondent
4. With whom are you travelling?
5. How many times have you come to Chiang Mai?
6. How long are you planning to stay in Chiang Mai?
7. Where have you visited / planning to visit in Chiang Mai? (list place of interest, multiple choices + others specify)
8. How do you go around the city? (rank by preference)
 - on foot
 - bicycle
 - motorbike
 - Song Theo
 - Taxi
 - Hired van
 - Others (specify)

Please give the reason for your ranking. (why did you select the particular mode of transportation for the first and second preference?)

9. Information source on tourist attraction of Chiang Mai (list source of information, multiple choices)
10. What do you think if there is a bicycle route designated in the inner city of Chiang Mai? Would you be interested in using the route? Why/ why not?

Appendix 7c: Questionnaire for Garden House in Hue City, Vietnam

1. Questionnaire for Garden House Owner in Hue City, Vietnam

1. Name:
2. Address:
3. Sex:
4. Age:
5. Occupation:
6. Education:
7. Member of household:

Relation with respondent	Age	Education level	Occupation

8. How many years have you been living in this house?
 9. To whom does the land belong to?
To whom does the house belong to?
 10. Income of respondent (daily or monthly)
 11. Size of garden
 12. What do you use the garden for? (vegetable production for sale, vegetable production for household consumption, fruit tree for sale, fruit tree for home consumption, others)
 13. Who maintains the garden?
Who among the household members work on the garden?
Do you hire others to look after the garden?
If yes, how many people do you hire? Women or men?
How much do you pay the hired labor? (for women, for men? For different work?)
Where do you get your hired labor? (neighborhood? Hire from province?)
 14. How much time do you spend to tend to your garden?
For household members (_ days a week; specify)
For hired labor (specify the number of days)
 15. What do you do to maintain the garden?
Cut grass and tend trees only
Vegetable production
Others (specify)
- Please elaborate on what you do in the garden
Fertilizer use (chemical fertilizer? Organic fertilizer? Please elaborate on what you do)
How much vegetable do you produce per year?
If you are selling your vegetables, where do you sell? How do you bring the produce?

16. Do you accept visitors to your garden? If not, why not? If yes, how do you accept them?
Please elaborate. (free access, access with charge, sell food, sell souvenirs, etc)
17. Are you interested in developing your house into a tourist attraction?
If yes, how would you like to do? Please describe your plan. What kind of support do you need in order to develop into tourist attraction?
If no, why not?
18. If the area is to be promoted as low emission attraction, and restrict the access by motorized vehicle by tourists, what do you think?

2. Questionnaire for worker in the Garden House, Hue city, Vietnam

1. Name:
2. Address:
3. Sex:
4. Age:
5. Occupation:
6. Education:
7. Members of household:

Relation with respondent	Age	Education level	Occupation

8. Since when are you living in Hue?
9. Condition of work
 How many days per week do you work?
 From what time to what time do you work?
 Where is your work place? How long does it take to commute? How do you commute to work?
10. Current earnings (by day or by month)
11. How long have you been working in this job?
12. Where did you work before this? And before that? (employment history since out of school) (note: we want to know the employment history in order to assess the training/ skill level / work experience of respondents)

Occupation/type of work	Year of engagement in that work	Place of work

13. What do you think if the garden houses are developed and the area becoming a low emission area restricting access of motorized vehicles by tourists?
14. What opportunities do you foresee? (more jobs? More income generating opportunities? Etc.)
 What problems do you foresee? (more competition? Congestion? Family obligation?)
 Please elaborate.

3. Questionnaire for cyclo drivers in Hue city, Vietnam

1. Name:
2. Address:
3. Sex:
4. Age:
5. Education:
6. Members of household:

Relation with respondent	Age	Education level	Occupation

7. Working condition
How many hours a day do you work? From what time to what time?
How many days a week do you work?
8. To whom does the cyclo belong to?
9. How many passengers do you service per day on average?
10. Around how many kilometers do you drive per day?
11. How many percentage of your customers are non-Vietnamese?
How many percentage of your customers are tourist Vietnamese?
12. Which is the most common route that you service?
13. How much is your daily income?
14. How many years have you been working as cyclo driver?
15. Before being a cyclo driver, what were you doing? (Occupation history since out of school)

Occupation/ type of work	Year of engagement in that work	Place of work

16. What do you think of developing garden houses into a low emission area and restricting access of motorized vehicles?
What opportunities do you see?
What problems do you see?