

Greening the Tourism Value Chain in Bohol

Strategy Paper



On behalf of

BMZ



Federal Ministry
for Economic Cooperation
and Development



Responsible

Vickie Antonio victoria.antonio@giz.de

Author

Thomas Finkel (COMO)

thomas.finkel@como-consult.de

COMO – Consulting für Projektmanagement
und Organisation GmbH

Editor

Leah Divina Siton Steigerwald leah22@gmail.com
Consultant

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PSP Program Office

7F New Solid Building, 357 Sen Gil Puyat Avenue
Makati City 1226 PHILIPPINES

Volker Steigerwald PhD

Program Manager

volker.steigerwald@giz.de

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Acronyms

ABCAI	Alona Beach Community Association Inc
ADB	Asian Development Bank
AC	air conditioner
ACCCoast	Adaptation to Climate Change in Coastal Areas Project
AO	Administrative Order
ATO	Air Transportation Office
BAHRR	Bohol Association of Hotels, Resorts and Restaurants
BDO	Banco de Oro
BDS	Business Development Services
BEMO	Bohol Environment Management Office
BERDE	Building for Ecologically Responsive Design Excellence
BFAR	Bureau of Fisheries and Aquatic Resources
BMO	Business Membership Organization
BOI	Board of Investments
BMT Padayon	Bohol Marine Triangle Panglao, Dauis and Baclayon
BMU	German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
BMWi	German Federal Ministry of Economics and Technology
BMZ	German Federal Ministry for Economic Cooperation and Development
BOI	Board of Investments
BPI	Bank of the Philippine Islands
BSWM	Bureau of Soils and Water Management
BTO	Bohol Tourism Office
CC	Climate Change
CD	capacity development
CDM	Clean Development Mechanism
CHED	Commission on Higher Education
CLUP	Comprehensive Land Use Plan
COMO	Consulting für Projektmanagement und Organisation GmbH
CERs	certified emission reduction units
CFL	compact fluorescent lamps
CLEC	Coastal Law Enforcement Council
CRM	Coastal Resource Management
CSR	corporate social responsibility
DA	Department of Agriculture
DAO	Department Administrative Order
DBP	Development Bank of the Philippines
DENR	Department of Environment and Natural Resources
DepEd	Department of Education
DILG (PNP)	Department of Interior and Local Government (Philippine National Police)

DOE	Department of Energy
DOT	Department of Tourism
DOTC	Department of Transportation and Communication
DTI	Department of Trade and Industry
ECCP	European Chamber of Commerce of the Philippines
EEl	Energy Efficiency Index
EIS	Environmental Impact Statement
EO	Executive Order
EMB	Environmental Management Bureau
EU	European Union
EUR	euro
GHG	greenhouse gas emissions
GIZ	Deutsche Gesellschaft für Internationale Zusammenarbeit
GPIoS	Green Philippine Islands of Sustainability
HNU	Holy Name University
IBP	Integrated Bar of the Philippines
ICPI	International Climate Protection Initiative
IEC	Information Education Campaign
IIEC	International Institute for Energy Conservation
ISO	International Standards Organization
LBP	Land Bank of the Philippines
LED	light emitting diode
LGU	local government unit
LPG	liquefied petroleum gas
LTFRB	Land Transportation Franchising and Regulatory Board
MARINA	Marine Industry Authority
MICE	meetings, incentives, conventions and exhibitions
MPA	Marine Protected Area
MPDC	Municipal Planning and Development Coordinator
MPDC	Municipal Planning and Development Council
MRF	materials recovery facility
MSME	Micro Small and Medium Enterprise
NGO	Non-Government Organization
NRM	Natural Resource Management
NWRB	National Water Resources Board
PAMB	Protected Area Management Board
PBE	Philippine Business for the Environment
PBSP	Philippine Business for Social Progress
PCAPI	Pollution Control Association of the Philippines, Inc
PCSD	Philippine Council for Sustainable Development
PCSSD	Philippines Commission on Sports Scuba Diving

PD	Presidential Decree
PEEK	Program for Energy Efficiency in Kho Khao Hotels (Thailand)
PEPP	Philippine Environment Partnership Program
PHILGBC	Philippine Green Building Council
PHP	Philippine Peso
PISE	Philippine Institute of Sanitary Engineers
POs	people's organizations
PPA	Philippine Ports Authority
PPP	Private Public Partnership
PROCESS	Participatory Research, Organization of Communities and Education towards Struggle for Self-reliance
PSD	Private Sector Development
PSME	Philippine Society of Mechanical Engineers
PSP	Private Sector Promotion Program
PSSE	Philippine Institute of Sanitary Engineers
RA	Republic Act
RBC	rotating biological contactors
RE	Renewable Energy
SB	Sangguniang Bayan (Provincial Board)
SBR	sbatch reactor
SCP	sustainable consumption and production
SMART	SMEs for environmental Accountability, Responsibility and Transparency
SME	Small and Medium Enterprise
STP	sewage treatment plants
TA	Technical Assistance
ToT	Training of Trainers
UAP	United Architects of the Philippines
UB	University of Bohol
UNWTO	United Nations World Tourism Organization
WP	Work Package
ZCR	Zero Carbon Resort

Background

The topic **green growth** (GG) has gained importance over the past years, also within partner countries of German Development Cooperation. Policy papers have mushroomed, highlighting the importance of tackling the challenges of climate change. Concepts on how to put these policies into practice, however, are rare. Against this background the Sector Project in cooperation with the Private Sector Promotion Program in the Philippines (PSP) commissioned in 2010 a study on *integrating green growth strategies into the MSME Development Plan 2011 - 2016 of the Department of Trade and Industry* in the Philippines. A further output of this policy and strategy advice mission was a concept note on *how to anchor green growth strategies into the economic development approach of the German Technical Assistance (TA)*. While both papers helped to develop a comprehensive overall green growth approach, work now needs to be intensified on how to break this down to the level of implementation in different intervention areas of PSD.

The work on value chain development is one important intervention area in German Development Cooperation. **Greening value chains** can thus be an important channel to integrate green growth aspects into the work of PSD. **Greening** in this context stands for reducing greenhouse gas emissions (GHG), reducing water usage, improving solid waste management, implementing sustainable management of other (natural) resources used in the production or provision of services, improving recycling, decreasing air pollution, etc in order to reduce the ecological footprint of the value chains and make them more competitive.

In the Philippines, the Private Sector Promotion Program supported by BMZ promotes different value chains. Among them are two sectors that are expected to have significant green growth potential. One is the creative sector (including furniture, gifts and housewares and fashion accessories) and the other is the (eco)tourism sector (including accommodation, tourist transport, and tourism supply chains). While the creative sector with green growth potential is small and being supported by SMEs for environmental Accountability, Responsibility and Transparency (SMART Cebu), hence there is no need for additional support. Not only the (eco)tourism subsector, particularly in Panglao, Bohol, but also the conventional tourism subsector in Mactan, Cebu have significant potential for energy and fuel efficiency, water conservation as well as for reduction and management of solid waste, especially in hotels and resorts. The Bohol tourism sector value chain can thus serve as a good practical example to analyze the entry points for efforts aimed at greening value chains.

Against this background, COMO was asked to undertake a mission to the Philippines in order to assist the Private Sector Promotion (PSP SMEDSEP) Program and its partners in designing a greening the tourism value chain strategy that mitigates negative environmental effects and at the same time strengthens the competitiveness of the tourism industry in Bohol and Cebu. This practical work on the ground shall contribute to developing a more generic concept on how to green value chains. For more information on this, please refer to the upcoming concept paper.

The study was supported by the Sector Project '*Innovative Approaches for Private Sector Development*', which has been commissioned by the German Federal Ministry for Economic Cooperation and Development (BMZ) to promote the design and adoption of innovative strategies and instruments for private sector development within German development cooperation.

Green growth as part of the MSME development strategy in the Philippines

As a direct result of 2010's mission, the Department of Trade and Industry (DTI) in the Philippines incorporated green growth strategy elements into its new **MSME Development Plan 2011 - 2016**. Within the plan, **green growth** is incorporated as a **crosscutting thematic area** that can greatly contribute to MSME's competitiveness (DTI MSME Development Plan 2011 – 2016: 35).

This very much reflects the growing evidence that taking care of environmental issues is a business case. For example, companies can improve their competitiveness by implementing strategies that reduce their ecological footprint, hence lower the business costs and increase appeal to ecoconscious consumers.

Goals pursued by the green growth approach

Achieving the long term competitiveness of companies is just one out of five goals pursued through a green growth approach, as shown below:

Table 1 Goals Pursued by the green growth approach

Mitigation	Reduce greenhouse gas emissions (GHG) thereby contributing to mitigating impacts of disasters which affect individuals and businesses alike.
Adaptation	Assist individuals and businesses to adapt to changes attributed to climate variations and severe weather conditions as well as long term changes in sector trends.
Competitiveness	Improve the long term competitiveness of companies by helping them develop and implement sustainable green business strategies that reduce their ecological footprint.
Green jobs	Make use of growth opportunities and market potentials that arise from investments into mitigation and adaptation as well as new products and services needed in a green economy.
Nature's capital	Conservation of nature's capital (ecosystems, biodiversity, natural resources) through the recognition of its economic value at company level and government level cost benefit analysis.

Intervention levels of the green growth approach

In order to achieve these objectives, public and private stakeholders can draw from plenty of policies and instruments that are widely used worldwide and – as the 2010 report showed - to quite some extent also in the Philippines (GTZ / COMO 2010). Looking at the role of governments in particular, the policies and instruments can be grouped into interventions at different levels

Table 2 Interventions of the green growth approach

Supra national level	Government gets proactively involved internationally to improve and secure commitment for international agreements regarding climate change, helps set and shape the right financing instruments at the global level (like the Clean Development Mechanism CDM) and achieve the reduction of trade barriers for environmentally friendly goods and services like clean technology.
Macro level	Government takes political responsibility beyond legislative actions by setting the right incentives and price signals, and by playing a role model regarding all issues of sustainability.
Meso level	Government proactively builds the institutional capacities needed for green growth. Due to their limited resources, the MSME are especially dependent on the availability of adequate, affordable Business Development Services (BDS) to be able to cope with the necessary reorientation of business strategies and business models.
Micro level	Government fosters the long term competitiveness of companies by promoting resource and energy efficient and conservation measures, the use of renewable energy as well as measures that make companies more resilient to climate change. Advocating sustainable consumption and lifestyles will trigger demand for products and services of companies that operate in an environmentally sustainable manner.
Meta level	Government discusses and builds a vision for green growth shared among all stakeholders in the country. New modes of working together in partnerships and networks require cooperation management skills that governments need to establish at all levels.

The push-pull-enable approach towards green growth

Besides grouping the policies and instruments into the different levels, they can also be classified into **policies and instruments that push, pull or enable companies into going green.**

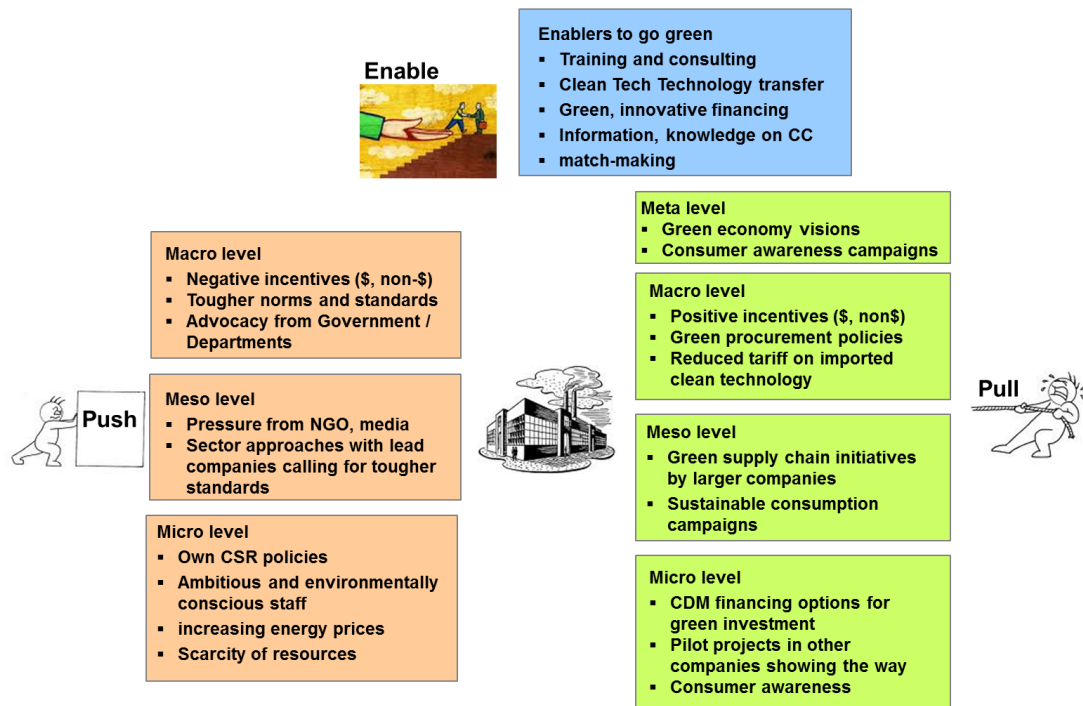


Figure 1 The push-pull-enable approach towards green growth (source: COMO / GIZ)

A more comprehensive overview of the **most important policies and instruments** available to address both climate change and private sector development can be found in the 2010 report.

New green growth initiatives in the Philippines

A quick scan during the first two days of the mission showed that additional efforts are being undertaken in the Philippines to put the economy on a greener track. Without the time to review all instruments and institutional arrangements, a few examples nevertheless demonstrate increased efforts by both public and private stakeholders:

- The **Department of Energy (DOE)** aims at making **energy conservation** mandatory through a pending bill in Congress to pass a corresponding law (Energy Conservation Act).
- Adoption of feed-in-tariffs that would encourage investments into renewable energy production is close to being approved, despite resistance from strong lobby groups in the energy sector.
- DTI has set up a **green growth task team**, which developed an action plan and is carrying out awareness raising events and capacity building measures on the topic, especially at local level.

- The EU has initiated a new SWITCH-Asia project on **Zero Carbon Resorts in Palawan** (for details see chapter 4), complementing its ongoing projects “*SMEs for environmental Accountability, Responsibility and Transparency (SMART)*” that works with the home and lifestyle industries in Cebu and the “*Green Philippines Islands of Sustainability (GPloS)*” project that aims to reduce the pollution level caused by SME's located in Metro Manila and the linked Calabrazon region.¹
- The **European Chamber of Commerce of the Philippines (ECCP)** has launched the **Energy Smart Program** as the country's competitiveness is strongly linked to the unwavering pursuit of energy efficiency and sustainability.²
- **TÜV Rheinland**, supported by GIZ, is implementing a development partnership (PPP), the **ConservePhil Energy Efficiency for Retailers in the Philippines**, building up local expertise through Training of Trainers (ToTs) and directly assisting 30 retail companies to improve energy efficiency in their business. Green Philippines Islands of Sustainability (GPloS) is an ambitious initiative that aims to reduce the pollution level caused by SME's located in Metro Manila and the linked CALABARZON region.
- **Green Philippines Islands of Sustainability (GPloS)** is an ambitious initiative that aims to reduce the pollution level caused by SME's located in Metro Manila and the linked CALABARZON region

Why greening the tourism sector?

As outlined in the strategy advice provided to DTI in 2010, **six potential priority sectors** were identified where DTI and its partners from the MSMED Council could focus on in their endeavor **to foster green growth**. The sectors were reviewed in the context of their contribution to GHG emissions and the potential to increase the competitiveness of companies through green practices. The tourism sector was one of these recommended priority sectors.

Besides these potentials on improving business competitiveness by going green, the tourism sector is an ideal case for working on environmental aspects as there are only few sectors where the **dependency of the business sector on the sustainable management of natural resources** is so apparent. In the case of the Philippines, without clean beaches, not a lot of tourists will be attracted. Without properly managed and protected coastal zones, coral reefs will lose their beauty and the fish stocks will disappear, with them the divers. Without careful management, fresh water resources will decline, limiting the availability of this valuable resource for both agriculture and tourism. Without energy efficiency measures, energy costs will make many businesses lose their competitive edge in the long run, as the business environment in general is not the cheapest to start with anyway, compared to competitors in the region.

Last but not least, the **tourism sector** – especially when international travel is involved – **significantly contributes to climate change** through GHG emissions and thus has a responsibility to putting itself on a greener path (United Nations Environment Program 2008).

¹ See www.switch-asia.eu

² See www.eccp.com

The tourism sector in Bohol and Cebu

Over the past decades, the Philippines has made a significant transformation towards a more diversified economy, in which tourism plays an important part. Tourism itself has been growing steadily. Inbound visitors to the Philippines for the first four months of 2011 aggregated to 1,306,944, posting an increase of 13.33 percent compared with last year's arrival of 1,153,198 for the same months. The month of January recorded the biggest volume of 349,713 visitors while the highest growth rate was recorded in February with 18.52 percent. Among the foreign visitors, Koreans and North Americans made up the majority, followed with some distance by Japanese, Chinese and Australians.³ In 2010, the total international tourist arrivals were 3.5 million.

While **Cebu** attracts more the **health / wellness / medical and retirement** as well as **MICE** (meetings, incentives, conventions and exhibitions) tourism subsectors, **Bohol** is trying to position itself as an **ecotourism** destination with linkages to **culture and heritage** as well as **adventure, outdoor and sports tourism** subsectors.

Seeing the **potential of tourism** in further contributing to **job and income generation**, GIZ and its partners from DTI have been engaged in the tourism sector in the Visayas, including Cebu and Bohol, for a period of two years now. At local level, tourism product development so far was in the center stage of the support, while at the national level support is currently being provided to the Department of Tourism (DOT) to develop new (quality) standards for the accreditation of tourism enterprises and individuals. Recently, efforts increased in Cebu and Bohol by looking into the supply chain of the tourism sector and assisting the stakeholders in Bohol to develop a **comprehensive tourism value chain upgrading strategy** (PSP Program 2011 documentation).

! ■ As project resources are limited and the process of working with the tourism stakeholders is more advanced in Bohol, the following strategy focuses on greening the tourism value chain in Bohol, with a special focus on Panglao, as most resorts are located there. Nevertheless, tourism stakeholders in Cebu become part of the initiative in case sufficient resources can be mobilized and a scaling up of activities to Cebu is feasible. As part of the **green supply** work package (see below), links to suppliers in Cebu are thought of anyway as part of the project's strategy.

³ See www.tourism.gov.ph/Pages/IndustryPerformance.aspx

Findings from the site visits to hotels in Cebu and Bohol

Three national consultants with a background in green architecture, water and solid waste management shared responsibility in making site visits to ten selected accommodation establishments in Cebu and Bohol from July 2011 to August 2011, talking to owners, managers and staff of the accommodation establishments about their **current environmental management practices**. Their findings (Manuel I Gloria et al 2011) are summarized as follows

Assessment of Current Environmental Practices at Company Level

The characteristics of participating hotels in terms of size, type and green practices differ considerably between Cebu, Mactan (160 to 560 rooms, mostly high rise city or beach hotels) and Bohol (26 to 110 rooms, mixed but mostly low density resorts). While smaller resort type establishments located in the designated ecocultural destination of Bohol could gain more in terms of marketing and savings by improving their greening potential, the larger enterprises in Cebu are better endowed to do so and are generally way ahead in applying greening measures. It can be assumed that the sample group in both sites includes more comparatively good performers that have taken first steps in the right direction, which might not be representative for the majority of enterprises that makes working on improvements regarding environmental practices ever more important.

Green practices: awareness and adoption

Trainings / orientations on management or staff level: Key personnel of most visited hotels (such as General Manager, Chief Engineers) have attended inhouse orientations or external trainings on single environmental topics like solid waste management or water conservation at least once. Staff orientations are common but sometimes limited or biased towards quick wins in energy savings. Some of the larger enterprises, especially chain hotels developed coherent and comprehensive environmental policies or integrated them in their corporate social responsibility (CSR) framework. In Cebu, one enterprise is ISO14001⁴ certified (Environmental Management System) and one is undergoing Earth Check⁵ audits.

Environment friendly or ecotourism branding: Only few hotels and resorts explicitly market or brand themselves as an environmentally friendly resort or ecoresort. While a couple of respondents already undertake considerable efforts to develop more ecoefficient business practices they do not advertise these to their customers. Thus, the financial benefits from specifically attracting ecoconscious guests may be overlooked. Lack of awareness about standards for sustainable tourism or fear about possible requirements might explain the hesitation of some respondents to brand their business explicitly as ecofriendly. Despite the limited effort to cater to ecoconscious tourists, most resorts outside the business hotel and city hotel bracket are aware of the fact that the local natural assets are a major selling point to their conventional customers.

Energy conservation and renewable energy

Strict **switch off policies** can have a major effect on energy savings. One hotel in Cebu offers a good practice by shutting down entire floors when the occupancy rates are low. Often an upgrading of customers to a higher room category can save a lot by maximizing floor capacity. While most of the larger hotels have lighting schedules for the varying

⁴ http://www.iso.org/iso/iso_catalogue/catalogue_ics/catalogue_detail_ics.htm?csnumber=31807

⁵ <http://www.earthcheck.org/en-us/other-products-services/sdprojects.aspx>

illumination requirements of the facility, staff orientation on energy conservation practices still offer high potentials for many accommodation enterprises. Quick wins can be achieved with small behavioral changes.

Encouragement of behavioral changes among customers takes different forms and shapes. While one resort keeps the initial airconditioned room temperature setting at 24 degrees centigrade, a lot of establishments still waste energy by preserving setting of 16 to 18 degrees centigrade while customers are not in their room. Many hotels use key card systems to control power supply in rooms. However, misuse is widespread. Sometimes the key card is intentionally replaced by hotel staff while the guests are out. While some guests might insist on certain wasteful practices, providing choices can be more acceptable. In many resorts and hotels, guests are encouraged to reuse linen and towels through the use of reminder cards to save energy and water. One hotel provides additional ceiling fans windows in airconditioner (AC) equipped rooms, which gives guests the option to use fan assisted natural ventilation as an alternative. This is further complemented by operable windows that facilitate passive cooling of the rooms.

Insulation on the other hand is of course a concern in AC rooms. An observed bad practice is the use of ACs in native cottages that have poor insulation properties, thereby requiring more energy to cool the room. Absence or improper insulation of roofs is another concern that promotes heat gain in the interiors. Some resorts effectively use plants for natural shading, which could considerably improve energy efficiency.

Other hotels were able to maximize natural lighting and natural ventilation in common areas such as the lobby, breakfast areas and hallways by providing openings to the exterior, while potential for adjustments in existing building structures is sometimes limited.

Most hotels are in the process of installing energy saving lightbulbs. Extensive purchasing of other **energy efficient appliances** is limited to some of the larger hotels, while the primary criteria for selecting equipment are related to guest comfort and convenience like reliability, durability and low noise level. In most cases, inefficient appliances are replaced only after the equipment breaks down.

Renewable source of energy: Only one hotel is currently piloting the use of solar water heaters as an alternative energy source in Cebu, while this easy-to-use and easy-to-maintain technology is already more widespread among resorts in Bohol. One of the larger city hotels uses reverse cycle airconditioning heat for water heating. Other renewable energy sources are still unexplored among the respondents.

Energy monitoring and targeting: With the exception of two larger resorts, most respondents do not systematically monitor their energy savings yet.

Water conservation and wastewater management

Water supply: A lack of adequate fresh water supply is a major concern for hotels and resorts in Mactan, Cebu and especially in Panglao, Bohol, where piped water is limited. While the operation of deep wells is a widespread practice even among hotels in Metro Cebu to supplement the available water supply, most resorts in Panglao rely solely on the (underregulated) excavation of privately operated deep wells. The costs of water extraction and treatment are considerably high. The even higher expense of trucking in the water supply from mainland Bohol (which may exceed 200 PHP/m³ in Panglao Island) should be a

very effective incentive to conserve water. Both the unregulated extraction of groundwater and the fuel intensive transport of water put a high burden on the environment.

Water audits: No hotel or resort has conducted a formal water audit so far which could identify how much water is used where and for what purpose. Similarly, no hotel or resort has established a baseline before applying water saving measures. Based on anecdotal information and data on actual monthly water supply and occupancy rates, water consumption is estimated to range from a low of 700 to 800 liters per day per room to a high of 1,750 to 2,000 liters per day per room. 580 to 670 liters per occupancy night are rated as good international practice for middle sized hotels (Mead, Gonzales in Journal of Contemporary Water Research and Education, Vol 115, 1999 no. 1).

Water conservation measures: Notices and reminders to guests on reusing towels and bed sheets instead of daily replacement is an inexpensive but highly effective water conservation measure. Many hotels and resorts are already equipped with water saving fixtures such as low flow shower heads, faucets with aerators, pressure regulating valves on the distribution lines and, less commonly, dual flush toilets. The water of swimming pools is usually not replaced completely and done about three to four times a year. This minimizes water consumption for swimming pool operation. Watering of plants and lawns is usually done by hose and sprinklers. Few use drip irrigation despite the known scarcity of water. Some resorts minimize water loss from evaporation by mulching, using either leaves or plastic sheets. Some resorts, especially those in Panglao, harvest rain water to supplement their piped water supply. Where sewage is properly treated, either through mechanical or natural methods, the treated effluent is reused for irrigation thereby reducing overall potable water consumption.

Wastewater disposal methods: All hotels and resorts in Mactan, Cebu dispose of their wastewater (sewage) through (inhouse) sewage treatment plants (STP). The most commonly used treatment process in Mactan, Cebu is the activated sludge process which is energy intensive but very effective and reliable. One hotel uses a rotating biological contactor (RBC) resulting in a very low energy consumption of less than 0.07 kWh per cubic meter sewage treated (Manuel, Gloria 2011). In Panglao, Bohol, most hotels and resorts rely solely on septic tanks for sewage treatment. Only two resorts in Panglao treat their sewage (from septic tanks) further. One is using an electromechanical sequencing batch reactor (SBR) with post disinfection and tertiary filtration to produce high quality treated effluent. Specific power consumption is almost 1.1 kWh per cubic meter. In contrast, another resort uses a reed bed system (constructed wetland) to treat the liquid effluent of its septic tanks. Since the topography of the resort allows gravity flow from the septic tanks to the reed bed system, specific power consumption is essentially nil (0.0 kWh/m³).

Due to the manner of construction of septic tanks (unlined or porous leaching compartment), some hotels and resorts reportedly do not have any liquid discharge from their septic tanks. However, sludge is regularly excavated from septic tanks, some as often as two to four times a year.

Solid waste management

Reduce: The most common waste reduction initiative (reduction of packaging materials) is the use of (soap) dispensers, particularly in common areas but also in guest rooms. One

resort provides soap (bought in bulk) without wrapper. Buying in bulk is a good practice not only for waste reduction but also for cost reduction.

Reuse and recycle: Quite a lot of respondents did set up inhouse waste management systems that are driven by incentives related to the resale of valuable recyclable materials. For the large hotels, segregation, materials recovery and composting are done by external solid waste management contractors. One resort encourages waste segregation among guests by providing separate bins. Most hotels and resorts compost their biodegradable waste. It is also a common practice to separate food waste for reuse as animal feeds, either given away for free or for a price. Sometimes used cooking oil is also collected in separate containers and either given to staff or sold. One resort reuses newsprint to wipe glass. Recycling usually consists of selling valuable materials (especially paper, aluminum, glass) for reprocessing.

LGU solid waste management system: In Mactan, Cebu solid waste residuals are usually disposed of through the solid waste management services of the local government unit (LGU) while some avail of the services of private waste haulers. Solid waste management is a major concern in Panglao, as not all hotels and resorts in Panglao are served by their local (municipal) solid waste collection system. The Municipality of Dauis reportedly has a limited capacity to serve the hotels and resorts in its area of jurisdiction. It was mentioned that an old dumpsite and / or materials recovery facility (MRF) is presently used by Dauis as a temporary disposal site. A cluster of ten LGUs including MetroTagbilaran, Dauis and Panglao supports the establishment of a common solid waste disposal facility (sanitary landfill) in Alburquerque to serve their solid waste management needs, but it is not yet operational.

Cleanup activities: All resorts and hotels regularly clean their surroundings, both the adjacent grounds and the shoreline. Most of the hotels and resorts also participate in additional community cleanup activities, usually twice and up to four to five times a year.

Greening the supply chain: ecoconscious purchasing policies

Most of the resorts purchase a certain percentage of food supplies from local sources. Organic food is quite popular, especially among the smaller resorts. One resort directly engages in local contract farming and offers innovative arrangements to small producers. Three establishments promote local crafts through inhouse shops and extensively use locally produced decorative items in their resort. Two incorporate a larger amount of locally produced or reused building materials. Some enterprises use minimal or biodegradable packaging. No certified organic products are required so far and there are no specific efforts to influence existing suppliers to green their operations. Only one (multinational) hotel has an explicit sustainable purchasing policy in place.

Transport

All hotels provide inhouse or external shuttle services to their guests. Alternative fuels and / or means of transportation are not yet explored, such as gas or electric powered vehicles or bike rental. Car pooling is hardly practiced.

Availability or lack of environmental business services

While there are some gaps and shortages, value chain operators and enablers can draw on a range of available commercial and private services to advance their greening efforts (for details see annexes). Dissemination of information on available resources should be a key concern.

Energy efficiency and renewable energies: There is a large variety of green technology and energy efficiency service providers available. Additionally, there is quite an extensive group of green building materials available in the Philippines. This supply side of products and services can be considered sufficient to assist willing hotels and resorts in their energy efficiency efforts. Nevertheless, regarding renewable energy, the local market is not very much developed yet, making it difficult for hotels to access information, know-how and equipment.

Water conservation: There is a general lack of awareness about the services / resources offered by national government agencies. The Environmental Management Bureau (EMB⁶) of DENR conducts seminars on such topics as water conservation, waste minimization and pollution control in collaboration with professional organizations like the Philippine Institute of Sanitary Engineers (PISE⁷) and the Philippine Society of Mechanical Engineers (PSME⁸), and non-government organizations (NGOs) such as Pollution Control Association of the Philippines, Inc. (PCAPI⁹). Information on water conservation practices is available at the DENR¹⁰ and EMB¹¹ websites and on water resource management at the National Water Resources Board (NWRB¹²). On the other hand, the NWRB has apparently not been strictly monitoring and / or managing the water resources in the surveyed areas.

Wastewater treatment: The main issues with water pollution control are the inconsistent implementation and enforcement of the regulations by the regulatory agency (DENR EMB) and a lack of (technical) trained staff was observed in the surveyed areas. As with water conservation, the DENR EMB has several services and programs that can benefit the hotels and resorts by enabling them to attain compliance in a cost effective manner such as the Philippine Environment Partnership Program (PEPP¹³).

Solid waste management: Barangays in Dauis and in Panglao, Bohol lack operational materials recovery facilities (MRFs) and are unable to provide final solid waste disposal services to hotels and resorts in their area of jurisdiction as mandated by RA 9003 or “*Ecological Solid Waste Management Act of 2000.*” The law also defines policies, programs and services of various agencies to assist and enable establishments. On the other hand, private haulers and junkshops do provide (solid) waste disposal services that may include purchase of recyclable materials. Encouragement of inhouse and commercial solutions to reduction, reuse and recycling can be a viable, intermediate or complementary response to the solid waste problem.

⁶ <http://www.emb.gov.ph/index.html>

⁷ <http://www.psense.org.ph/>

⁸ <http://psme.org.ph/>

⁹ <http://www.pcap.org/>

¹⁰ <http://www.denr.gov.ph/index.php/home.html>

¹¹ <http://www.emb.gov.ph/index.html>

¹² <http://www.nwr.gov.ph>

¹³ <http://www.emb.gov.ph/pepp/index.html>

Green finance: In 2011, GIZ PSP commissioned a study on the availability of green finance in the Philippines (Hiemann, Wolfram 2011). The study concludes that while financing windows for green investments are offered by local banks, lack of information on these as well as lack of knowledge on environment technologies available explain the limited disbursement of loans for such purposes. At the same time, enterprises do not fully appreciate the potential savings that can be generated through investments that will improve their energy and water efficiency.

Hindrance to improvements

Lack of standards, information and incentives: While some of the establishments are actually implementing 'green practices', most are not aware that these are in fact *green practices* since there is not much information and well established green standards in existence. The efforts undertaken currently by the PSP program to advise the Department of Tourism (DOT) on including environmental issues in the new standards for hotels is an important step in this direction. It would also help if financial and nonfinancial incentives were provided by the LGU or business membership organizations (BMOs) to spur more initiative.

Lack of technology and linkages: To supplement the availability of information on green practices, knowledge about green technology and services must be made available. Enablers should promote linkages between green suppliers and local hotels to make green markets work. This is not happening so far to a sufficient extent, making it difficult for hotel managers and staff to access information, know-how and equipment.

Costs and benefits: While investments in energy efficiency, water conservation or recycling often result in immediate financial gains, some measures like proper sewage treatment require high capital and operating costs. Low cost solutions (such as reed bed sewage treatment), requires scale by clustering resorts, while engaging the expertise of service providers can translate to improving long term competitiveness by reducing the operational costs. But there is a clear lack of information about the costs and benefits of good environmental practices, making it difficult for hotel managers and staff to make the right decisions. Calculations on the return on investment are missing for most of the solutions, inhibiting the replication of good practices where a quick return on investment is possible. The costs of depleting natural assets and threat of high penalties for illegal discharge and water extraction are other points that should be taken into account by hotel managers and staff, as the disappearance of natural assets undermines the long term business model of tourism itself.

Land use regulations and implementation of environmental regulations: A lot of enterprises complain about a lack of transparency and weak implementation of land use regulations as a hindrance to operate and start businesses. While there are a lot of laws pertaining to sound environmental practices and strict enforcement observed in Cebu, not too many are properly implemented in Bohol (such as outdated Comprehensive Land Use Plans - CLUPs, nonexistent discharge permits, unregulated deep wells). Likewise, information on requirements for compliance with environmental regulations is also not readily available, thereby making it difficult for tourism establishments to factor these costs into their construction or expansion budgets. This can lead to market failure and overuse or depletion of natural assets, when costs are externalized and burdened on the whole tourism destination. Regulators offer phasing in arrangements and incentives for compliance. Aside from lobbying for regulators to be better capacitated, the private sector should also

coordinate to improve self regulation, so as not to erode its business model that highly depends on a clean and intact environment that they all benefit from. On the other hand, overregulation such as a local ordinance banning junkshops in Dauis, Bohol could be counterproductive, considering the severe solid waste management problem in the area.

Adaptation needs to current and future climate change effects

Most hotels and resorts relate climate change issues to immediate effects on the tourist experience such as unusual rainfall and erosion of beaches but may not be fully aware of the threat climate change poses to the sustainability of their operations. Some underrated negative impacts of climate change may be extreme weather events as well as water shortages and deterioration of coral reefs. In one of the beachfronts in Bohol that experienced receding shorelines, a system of sandbags as low dikes was implemented. It appears to be a successful means of retaining the sand and is much less invasive compared to constructing concrete retaining walls, which eventually erode over time.

Recommendations for value chain actors and enablers

Based on site visits in Bohol and Cebu as well as interviews with key stakeholders, the national consultants and PSP team jointly formulated recommendations for operators and enablers engaged in Bohol's tourism value chain.

Environmental Practices and Crosscutting Issues

Micro Level

Development of environmental policy / energy and water conservation plan: Each of the hotels should have an environmental policy from which it can develop its programs. It is crucial that these are written and shared with the hotel staff. It can be helpful to establish baseline information on usage, current practices and staff capacity from which hotels can set targets for improvement, formulate action plans and assign responsibilities. Installation of submeters can be useful to identify priorities.

Regular repeated orientations/capacity building for hotel owners / management and staff on green practices: The conduct of these trainings and orientations should not be held as a one off activity. It is recommended that hotel managers conduct these capacity development (CD) measures as often as every quarter or on a semestral basis. Regular staff trainings at the enterprise level can be complemented by joint efforts. The Bohol Association of Hotels, Resorts and Restaurants (BAHRR) can provide capacity building as a service to their members.

Customers should be informed about the hotel's environmental policies and programs to engage them in green practices, raise awareness and also enhance the image and hence competitiveness of the enterprise. An easy option is the placement of reminder cards inside the rooms and common areas.

Meso level

Conduct seminars, green talks and workshops: In partnership with the LGUs and NGOs, a series of knowledge sharing events can be done to increase awareness of the local populace. They can tap national NGOs (such as PHILGBC) or professional associations (like PIA, PICE) to provide speakers and experts.

Scoping of available technologies in Cebu and Bohol and neighboring cities: In partnership with the DTI a compilation of these technologies and suppliers can be published.

Organization of trade shows, summit and conferences on green technology and services. The DTI may take the lead in these activities to bring together all stakeholders (hotel owners, experts, technology and service providers, government, civil society) involved in the improvement of Bohol's competitiveness. These activities will support the development of green markets, increase technology awareness and knowledge, improve technical capacity of local populations and wider adoption of efficient technology.

Green ratings: The Tourism Councils or hotel associations could introduce voluntary rating systems on sustainable tourism or green buildings to their members. Thus making a common effort towards harmonizing green targets in the destination. One option is the Building for Ecologically Responsive Design Excellence (BERDE) rating¹⁴ tool for green buildings. The Department of Tourism has already published guidelines for ecotourism development (see Annex). They are currently developing a rating system for ecotourism establishments, which will be a voluntary rating system for those interested in marketing themselves as such.

Green financing: Linking the financial institutions to the hotels and establishments is recommended. The regional DTI can partner with banks in coming up with a workshop on green financing windows with the tourism councils / associations. Currently there are local banks such as Bank of the Philippine Islands (BPI), Banco de Oro (BDO), Land Bank of the Philippines (Landbank) and Development Bank of the Philippines (DBP) that offer green financing as part of their portfolio (Hieman, Wolfram 2011).

Macro level

Green tourism incentives / public recognition: Depending on their financial capability, the LGU may provide incentives such as tax holidays or tax credits to the establishments that have become green. Public recognition, such as a certificate which can be used as a marketing tool or by providing a platform for the establishments to share their best practices to others can be strong nonfinancial impulses. These incentives can also be provided by the local tourism councils or the local association of hotel and resort owners. Establishing standards for *green* hotels can be coordinated with the DOT, which is currently formulating these as voluntary standards on top of the mandatory accreditation system for primary tourism establishments.

Development Planning: Presidential Decree (PD) 1586 established an Environmental Impact Statement (EIS) System to reconcile the requirements of economic (commercial) development with those of environmental quality and protection. Ideally, the EIS system should be used as a planning tool to allocate environmental resources.

Development of a green building and construction ordinance: In the Philippines, the pioneer city that adopted an ordinance on green building is Quezon City. The ordinance encourages owners of buildings to look into ecofriendly systems and technologies that will help reduce their impact on the environment. The intent is also to provide tax incentives to those who are able to comply.

¹⁴ The tourism councils can partner with the Philippine Green Building Council (PHILGBC) in conducting an awareness course on BERDE rating (<http://www.philgbc.org/>).

Meta level

Awareness raising does not have to be limited to enterprises and their associations. In partnership with the regional Department of Education (DepEd) and Commission on Higher Education (CHED), a subject on environmental awareness and protection could be included in the curriculum. Consequently, the schools can develop a program on energy, water conservation and waste management.

Energy efficiency and renewable energies

Investments in energy efficiency often offer immediate financial benefits. Measures on different levels of intervention can help to encourage tourism enterprises to apply energy saving measures.

Micro level

Assess costs and benefits of green technologies and services, develop energy conservation plans, undertake regular capacity building measures and orientation workshops for hotel owners as well as management and staff and engage customers in these endeavors are crucial general aspects to be followed. Specific recommendations with calculations provided from Greening the Tourism Value Chains study (adelphi 2011) and Gloria, Manuel I et al 2011 are

- installation and proper usage of key card cut off devices (typical payback time ~ 0.15 years)
- replacement of inefficient light bulbs (typical payback time ~ 1.5 years)
- switch to energy efficient inverter type ACs (typical payback time ~ 5.7 years), in Gloria, Manuel I et al 2011
- efficient pool pumps (typical payback time ~ 1.4 years),
- hot water system with heat pumps (typical payback time ~ 2.8 years)
- moderate initial temperature settings
- provision of choices for natural ventilation and fan use
- proper sealing of air conditioned cottages, insulation of ceilings and proper shading
- use of solar water heaters.

Meso level

Partner with power suppliers on energy use management: The Department of Energy (DOE) can work with the utilities providers in promoting proper energy use management. The cost of electricity in Cebu and Bohol is the same during peak and off peak hours. In other areas of the country, electricity costs during peak hours and off peak hours vary to provide incentives for efficient allocation of consumption. Incentives can also be set by subsidizing tariffs for those who consume below the established benchmark.

Encourage more investment on renewable energy: The DOE can provide information on the most efficient renewable energy (RE) in different regions, as it already has a Power Development Plan which indicates the RE sources that have the highest potential in the Philippines. The Board of Investments (BOI) can promote these and look for potential investors, as it already has a menu of incentives in place for RE investments. The planned feed-in-tariff would be an ideal incentive to encourage the production of renewable energy.

Macro level

Green accommodation rating for energy efficient accommodation enterprises: The Department of Tourism (DOT) is reforming its accreditation system for which will now be mandatory for primary tourism establishments in the Philippines. The DOE is currently working on the development of a guide to encourage energy efficiency in buildings. The two departments may look into how they can align their services and guidelines to help promote energy efficiency in the tourism industry. There is a need to establish and determine an energy consumption baseline or EEI (Energy Efficiency Index) for the different hotel types. This is a standard metric for Green Buildings and is measured in terms of kWh/m² per year. There might be a need to establish at least two different indices – one for air-conditioned structures, another for those that offer natural ventilation. Based on figures taken, a naturally ventilated resort obtained an Energy Efficiency Index of 64kWh/m², while a fully air conditioned resort's EEI was 263 kWh/m². More data gathering should be done to establish these baselines.

Water conservation and wastewater management

Investments in water conservation often offer immediate financial benefits. Measures on different levels of intervention can help to encourage tourism enterprises to apply water conservation measures. Wastewater management measures do not provide instantaneous financial benefits but are needed to protect the natural beauty of the island.

Micro level

Water Conservation Most hotels / resorts can exert greater efforts to save water. Available information indicates the potential for reducing specific water consumption (in liters per day per room) by about 30 percent for establishments with average water use intensity up to about 40 percent – 60 percent for the most water intensive establishments. Specific examples of no cost or low cost measures for reducing water consumption include the following

Responsible cleaning procedures and leak prevention: Improvement of cleaning procedures such as not leaving the water running while washing the dishes in kitchens can have a big impact. A single, small leak of two drops per second wastes approximately 20 liters per day. Regular checkups are advisable. Likewise, limiting the use of chemical cleaning solutions will reduce the potential for contamination of water sources.

Water efficient fixtures and appliances (calculations provided by Gloria, Manuel I et al 2011)

- low flow shower heads (saves 160 liters per day / typical payback period 312 occupancy days at 30.00 PHP per cubic meter)
- efficient washing machines / dishwashers (typical water savings efficient dishwasher ~ 49 680 liters per year)
- dual flush toilets
- faucet aerators.

Line pressure regulation: Water supply pressure is often set at around 30 psig (~2 barG); however, reducing it by half to 15 psig (~1 barG) will reduce flow rate by up to 30 percent without a noticeable reduction on functionality or guest experience.

Reduced frequency of laundry services: Each instance that linens and towels are reused for two days and washing is avoided saves 100 to 150 liters of water aside from detergents and electricity (typical cost savings ~ 30 to 40 PHP daily per guest, calculation provided by Gloria, Manuel I et al 2011).

Reuse water: The implementation of this option is limited by the availability of a separate piping network for gray (used water from sinks and showers) and black water (used water from water closets and the kitchen).¹⁵ Gray water, with minimal treatment, can be used for washing floors, flushing toilets, irrigation and cooling towers for centralized air conditioning systems. Black water, on the other hand, may be safely recycled after appropriate treatment for irrigation.

Harvesting of rainwater has a net effect on preserving fresh water supplies in the area.

Replenishment of groundwater: Maximize open spaces with natural ground cover on the property to improve the ability of the soil to absorb rain water for recharging groundwater sources and engage in targeted reforestation of watersheds outside the private property.

Water Pollution Control Water pollution can curtail or even close down the hotel or resort business by polluting the property, beaches and other natural assets. While there are numerous methods, technologies and equipment for treating wastewater, they usually involve significant capital and operating costs. The challenge lies on the identification of cost effective solutions such as the natural treatment systems explained below.

Wastewater minimization: The capital and operating costs of wastewater treatment is typically proportional to the quantity and pollutant concentration of the wastewater. Minimization of wastewater is the initial step to be taken.

Septic tanks – further treatment needed: Many hotels and resorts still use septic tanks to provide primary treatment of their sewage or wastewater. The sludge from these septic tanks needs to be excavated and hauled out regularly. Approved disposal sites of the excavated sludge are often unavailable. A common septage (solids) treatment plant may be constructed to serve a group of hotels and resorts in a given locality. One treatment technology that may be considered for the treatment of solids or sludge from septic tanks is anaerobic digestion. Anaerobic digesters use little or no power and produce biogas (methane gas) that can be used as fuel.

Natural treatment systems: The reed bed sewage treatment system (a subsurface flow constructed wetland) which uses sunlight, plants, soil organisms and natural processes is an example of an alternative sewage treatment technology that is very effective but inexpensive to construct and operate. Treated effluent from the reed bed system is of high quality and can be safely used for irrigation and washing of floors and sidewalks (typical savings compared to conventional sewage treatment plants (STP) - capital costs ~ 800 000 PHP / operating costs ~ 500 PHP per day as calculated in Gloria, Manuel I et al 2011).

¹⁵ Graywater is [wastewater](#) generated from domestic activities such as laundry, dishwashing and bathing that can be recycled onsite for uses such as landscape irrigation and [constructed wetlands](#). This wastewater contains no fecal matter (human feces). Graywater differs from water from the toilets that is designated [sewage](#) or [blackwater](#) to indicate it contains [human waste](#).

Energy efficient electromechanical sewage treatment systems: Where sufficient land area is not available to operate a reed bed (reed beds require one to two square meter per 200 liters of sewage), rotating biological contactors (RBC) and trickling filters may be an energy saving option. They need only 20 percent – 30 percent of the power used for conventional methods like activated sludge or sequencing batch reactor (SBR) treatment systems.

Meso level

Raise awareness on good practices and available private and public support programs through tourism councils and associations. For example, the Philippine Environment Partnership Program (PEPP¹⁶) provides the Department of Environment and Natural Resources Environment Management Bureau (DENR EMB) with a framework to assist organizations or associations of hotels and resorts in implementing water pollution abatement and control measures.

A common, centralized sewage treatment plant is another cost effective option. Capital costs per unit capacity and operating costs per unit volume of sewage treated are usually lower for larger capacity installations.

Macro level

Compared to other aspects of greening the value chain like energy savings, a push approach might be more relevant when it comes to water extraction and sewage treatment. Equal and transparent enforcement of existing laws is often more relevant than additional regulations.

Water conservation: The National Water Resources Board (NWRB) is designated as the regulating agency for water resources and is the main driver towards sustainable use and management of (ground) water, the regulation of water extraction rates and the issuance of permits to drill (deep) wells. Enhancement of technical resources, human power and expertise in assessment, allocation and management of water resources is a concern in Panglao, Bohol. Local government should cooperate with the national agencies to improve capacities on the ground.

Water pollution control: Under the RA 9275 or the *Philippine Clean Water Act of 2004* the DENR is tasked with controlling water pollution. Through the national and regional offices of the EMB, the DENR promulgates and enforces effluent standards. The DENR-EMB has several services and programs that can benefit the hotels and resorts by enabling them to attain compliance in a cost effective manner, such as the PEPP. The EcoWatch system (Department Administrative Order DAO 98 - 51, Series of 1998 and DAO 2003 - 26) on mandatory self monitoring and compliance and voluntary self regulation of the DENR uses public pressure to compel noncompliant establishments to undertake projects in order to attain compliance and obtain the benefits of a positive public image. Tourism enterprises should participate in DENR trainings to improve their capabilities and be informed about existing rules and regulations.

¹⁶ <http://www.emb.gov.ph/pepp/index.html>

Solid Waste Management

Investments for better solid waste management can both save money and protect the natural environment and resources.

Micro level

Reduce

- Using dispensers for toiletries instead of disposable sachets is a no cost or even cost saving measure that can reduce solid waste generation considerably.
- Using sugar bowls and bulk creamers can have a similar effect and are broadly accepted by consumers if adequately presented and food safety is ensured.
- A waste minimization program including the establishment of baselines, targets, action plans and assignment of responsibilities can be helpful.

Reuse: Measures like using refillable bottles for drinking water and providing reusable laundry bags can be executed in a way that find the acceptance and appreciation of guests. Bottles with hotel logo can also serve as advertisement.

Recycle: Many hotels and resorts surveyed segregate their solid wastes, sell or give away food wastes as animal feeds and sell recyclable materials like paper, cartons, aluminum cans, other metals and plastics (hard and soft). Refining the degree of segregation to more categories will result in higher prices for the recyclable materials.

Trichoderma fungus also known as Compost Fungus Activator, available from the Department of Agriculture (DA) and the Bureau of Soils and Water Management (BSWM), can be used to accelerate the composting process, reducing the three to four month period of traditional composting to three to four weeks.

Meso level

Financially sustainable recycling options: Buyers and recyclers of solid waste materials are often deterred by the lack of recycling options for certain types of waste and / or the small volume generated. Organizing the solid waste generators (hotels and resorts and other establishments) and buyers (junkyards, haulers and recyclers) would widen the range of materials suitable for recycling and allow the consolidation of specific categories of solid waste (such as glass) into economically or financially viable quantities.

Macro level

Establishment of materials recovery facilities (MRF) and proper landfills by barangays as required by RA 9003 the Philippine Ecological Solid Waste Management Act of 2000, is an option that should be actively pursued, while the plans to build a common sanitary landfill in the Municipality of Albuquerque should be fasttracked.

Supply Chain

In order to look beyond the environmental management practices at the hotels, the mission undertook efforts to also look into the supply chain of the hotels in order to identify potential areas for reducing its ecological footprint.

Micro level

Require suppliers to minimize packaging materials: Tourism enterprises often obtain the leverage to influence their suppliers in terms of greener production methods or have at least

the discretion to obtain quick wins by relinquishing redundant packaging materials for example

Local procurement: To source locally can reduce transport costs and reduce the establishment's carbon footprint considerably while at the same time giving tourism enterprises a competitive edge by providing a distinctive tourist experience.

- Building materials leave a huge carbon footprint when shipped
- A range of locally produced food and nonfood items can serve as greener options, help to cut costs and at the same time improve the local economy.

Organic food can be a distinct selling point and of course green option. Direct contract farming can improve income of communities as well as ensure stable quality and quantities for resorts.

Meso level

Enablers like the DTI provincial and / regional office, DA and BMOs can help green and localize the tourism supply chain for example

- **Definition of criteria and development of standards and guidelines:** The DTI can rely on or improve and build on criteria of existing ecolabelling programs so as not to reinvent the wheel.
- **Inventories and market linkages:** The DTI should assist the suppliers and buyers by organizing tradeshow (trade fairs, trade exhibitions) or other matchmaking events and create partnerships to make local markets work.
- **Technical support to potential suppliers** to meet quality criteria and volumes of the tourism industry. Innovation in reuse or development of materials with recycled content can also be encouraged.

Transport

Transportation, as provided today, contributes to the problems of the dependency on fossil fuels, air pollution and climate change. Noise pollution and traffic might be additional considerations in terms of consumer satisfaction and competitiveness especially in the case of the tourism sector.

Micro level

Encourage carpooling and maximize capacity utilization: It is recommended that hotels / resorts promote the carpooling system. Tourism establishments are almost always located near each other. This practice is already being done in Hong Kong wherein a van or tourist bus transfers guests of three hotels in one trip. Tour operators should likewise come up with a mechanism to maximize capacity utilization in local tours (as in in the dolphin watching tours in Alona, Bohol) to reduce the amount of motorized traffic on the roads and beaches. For example, at El Nido Art Cafe (<http://www.elnidoboutiqueandartcafe.com/island.html>) in Palawan, they have a sign up sheet for the daily tours where tourists sign up for the tour they are interested in. If the minimum number is achieved, then they proceed. Otherwise, it is cancelled. With this mechanism, boat owners are able to maximize their capacity and operating expenses (fuel). Tourists are also able to save because they do not have to pay for the cost of the whole boat tour.

Use of nonmotorized or electric vehicle transportation: Nonmotorized transportation modes such as bicycles, sailing, paddling or water bikes can be reintroduced to the tourists or guests. Electric vehicles might be an option to be considered by individual resorts. The distinct experience of alternative means of transport can be a visible additional selling point for resorts, especially in Bohol. Tour operators may also explore the use of boats that run using solar power since island hopping tours take place during daytime thus maximizing the power of the sun.

Proper driving and maintenance of vehicle: Simple techniques as no idling of engines and turning off the airconditioning units while waiting for guests can prevent excessive use of fuel thus reducing emission.

Meso level

Promote alternative use of transportation such as electric jeeps and tricycles: Electric jeeps and tricycles are now being utilized in the different areas of the country such as Palawan and Makati City. According to a Philippine provider of electric vehicles (Esave <http://esavetransport.com/about.html>) the high fuel savings allow to recover the initial investments in less than a year. Electric vehicles are a strong greening option since the supplied energy mix in the Philippines is one of the cleanest in the world. Production of energy in the Visayas is even cleaner: About 60 percent of the total energy produced comes from geothermal (57percent) and hydroelectric (1 percent). The distinct experience of using alternative means of transport can also have positive strong impact on the perception of Bohol as an ecotourism destination.

Encourage the installation of liquefied petroleum gas (LPG) stations: In Cebu, there are already LPG refilling stations. However, in Bohol this is still nonexistent. Transport operators in Bohol should look into LPG as alternative source of fuel for their vehicles. The LGU can work with the Department of Transportation and Communication (DOTC) in the promotion of LPG fueled vehicles and the installation of LPG refilling stations.

Conduct survey on the carrying capacity of tourist destinations: Studies on carrying capacity, to be undertaken by the DOT and the LGU should also determine how many boats or vans the site could accommodate. Oftentimes, there is overcrowding in the mooring buoys or parking areas resulting in excessive oil spills and emissions that the site cannot handle.

! A lot of the recommendations of the local consultants were also picked up during the greening the tourism strategy workshop in Bohol, but not all of them, as time did not allow for this. Therefore, it is proposed that the local GIZ team screens these recommendations and adds practical and feasible solutions into its operation plan with the tourism stakeholders (see also recommendations regarding project management in Chapter 7).

Findings of the Zero Carbon Resorts (ZCR) project in Palawan

In order to get a better impression of the approach undertaken by the European Union (EU) Switch Asia Zero Carbon Resorts (ZCR) project (<http://www.zerocarbonsresorts.eu/>) in Palawan and the progress made so far, **three hotels** were **visited** on the island and discussions held with the project implementing partner, the **Palawan Council for Sustainable Development** as well as with the **project team in Manila**.

The project, which started at the end of 2009, follows the **3R strategy Reduce – Replace - Redesign**. It starts with **simple measures that** are easy to implement, but **remarkably improve energy performance** (*Reduce*). The next step is to **invest the savings** from the previous Reduce solutions in **substituting** fossil based and **outdated technologies** with more efficient and greener ones (*Replace*), followed by a total **redesign of resort establishments** providing a Zero Carbon system for future energy services (*Redesign*).

Out of the **frontier group of 26 accommodation businesses** in Palawan, most guesthouses, small hotels and resorts appear to be implementing the recommendations provided to them through workshops, energy audits onsite as well as counseling by international and local experts within the *Reduce* phase (some hotels already started with the *Replace* phase as well). The three hotels that were visited, the Daluyon Beach and Mountain Resort, the Puerto Pension Bed and Breakfast and the Tropical Sun Inn, are all very actively implementing **energy saving** and **water saving** measures, as well as **other smaller activities to improve environmental practices**. Measures in the Reduce phase focus on **quick wins** that are **no cost or low cost solutions** mostly related to energy conservation and water savings (all at micro level)

- **Energy efficient lighting** is introduced through **compact fluorescent bulbs (CFL)** and / or light emitting diodes (**LED**) **bulbs**, reducing the electricity needed for lighting
- **Energy inefficient** window type **air conditioners** are being **replaced** by more energy efficient inverter technology air conditioners, reducing the electricity needed for cooling
- Light is being provided through **solar tubes** in the ceiling, replacing lightbulbs during daytime
- **Rubber seals** are used to better **insulate** the **rooms**, preventing hot air to enter or cooled air to escape
- **Roofs** are better **insulated** and **trellis** installed for **shading the rooms** exposed to the afternoon sun, reducing the need to use air conditioners or ceiling fans
- **Natural air flow** is **improved** through air vents installed below the rooftops that allows hot air to escape, also reducing the need to use air conditioners or electric ventilators
- **Low flow showerheads** are **installed**, reducing the need for fresh water
- **Solar water heater installed on the roof** reducing the electricity amount needed for heating
- **Rainwater** is being **captured** for use in bathrooms or gardening, reducing the need for freshwater from the district water distribution pipe or own deep wells
- The use of **chemicals** is **reduced**, for example by using chlorinators for the pool, reducing the chlorine needed by 50 percent
- **Candle light** is produced by **used cooking oil**

- **Local furniture** and materials are **used**, reducing the need for products sourced far away
- **Nonmotorized transport** (bicycles) is being **offered** to the guests, replacing carbon emitting, polluting and noisy transport.



Solatube® lighting fixture



Rubber seal around opening of air conditioning unit



Installation of roof vent in the eaves



Trellis for shading



Rainwater harvesting (the rainwater that falls on the tent is collected in an underground tank and used for irrigation purposes)



Chlorinator system for the pool utilizes 50 percent less chlorine than traditional methods



Used cooking oil is placed in votives to replace wax candles



Use of local furniture highlights local materials and culture



Guests can rent bicycles to go around the resort and explore the surrounding areas

Overall, the savings made through these and other measures are impressive. For example, installing the low flow showerheads in 16 rooms of one resort accumulated to cost savings of about 250 000 PHP or 4000 EUR in one year. Replacing nine units of traditional window type air conditioners with inverter air conditioners helped one resort save 44 000 PHP or 715 EUR per month. In one guesthouse with 24 rooms, the energy efficiency measures accumulated to savings of 11 360 PHP or 185 EUR per month.

Despite the fact that the measures pay off quickly and are easily implemented, they do require commitment and strong support from the management. In this regard the environmental management practices introduced are no different from any other management practice needed to improve the competitiveness of a company: smart and committed owners and managers drive their business ahead, others slow it down.

Findings from other projects in Asia

Prior to the mission, a short study was commissioned by the sector project of GIZ to Adelphi, a German think tank and strategy consulting engaged, among many other topics, in tourism projects in Southeast Asia. The report summarizes good practices for companies in the tourism sector, focusing on four areas and providing sample calculations that highlight the economic benefits of the proposed measures (adelphi 2011)

- **Energy efficiency** (energy efficient pool pumps, hot water system with heat pumps that replace electric boilers, key tag separation protection for switching off electricity when guests leave their room, better insulation of villas and buildings, natural lighting and energy efficient light bulbs, insulation of hot water pipes, thin blankets for guests to allow sleeping without air conditioning, renewable energy technologies such as solar thermal systems, solar cells, solar cooling, biomass, biogas, 1 kw - 50 kw small scale wind power turbines)
- **Water management** (high efficiency dishwashers, full machine loads for dishwashers and washing machines using the lowest possible temperature, usage of cleaning fluids that do not require hot water, aerators or flow restrictions on basin taps, especially on hot water outlets, usage of filtered gray water for watering gardens or washing laundry)
- **Waste management** (reduce, reuse and recycling of waste, treatment of hazardous waste)
- **Sustainable natural environment** (mangrove reforestation in coastal areas).

In the Energy Efficiency in Kho Khao (Program for Energy Efficiency in Kho Khao Hotels PEEK) project in Thailand, which is financed by the German Federal Ministry for the Environment, Nature Conservation and Nuclear Safety under the International Climate Protection Initiative (ICPI) and implemented by Adelphi and the International Institute for Energy Conservation (IIEC), energy efficiency measures are the most prominent environmental management improvements, as energy costs make up for a large chunk of the costs of hotels and resorts. The Energy Efficiency in Thai Hotels is a practical guide for hotel owners, managers and staff, explaining in detail the abovementioned measures (UNWTO 2010).

Another source of greening measures is the **EU Switch Asia Greening Sri Lanka Hotels project** (<http://www.greeningsrilankahotels.org/>) and their **Good Practice Guidelines on Environmental Management for Sri Lankan Hoteliers**. The project itself aims at reducing in energy consumption at least by an average of 20 percent and a reduction in water consumption at least by an average of 20 percent as well as a reduction in waste generation at least by an average of 20 percent in the hotels. Interestingly, the project also aims at greening the supply chain by assisting main suppliers to hotels to adopt best practices in sustainable consumption and production (SCP). In the guidelines, key performance areas for improvements in environmental practices (EU SWITCH Asia 2011) are

- energy conservation
- water conservation
- wastewater management
- solid waste management
- maintenance of air quality and reduction of emissions of greenhouse gases

- prevention of chemical pollution
- using environment friendly products
- influencing the supply chain
- health and ecoconsciousness
- landscaping, erosion control, beach maintenance
- corporate social responsibility
- conservation education and biodiversity conservation.

Unfortunately, **improvement measures are not described in detail**, reducing the value of the guidelines for hotel owners and managers. Offsetting this shortcoming, the **guidelines** do nicely **provide tips on managing the *greening project*** in the hotels.

Findings from interviews with stakeholders in Bohol

The national consultants that undertook onsite visits to 11 hotels in Cebu and Bohol, the ZCR project and its work in Palawan, the PEEK project in Thailand and the Green Sri Lanka Hotels project all have a focus on environmental practices at the accommodation businesses. This is the right approach, as a truly green tourism sector can only emerge once the guesthouses, hotels and resorts become proactive by improving their environmental practices. Starting with their operations is of course the first step.

Nevertheless, as highlighted above, the tourism sector is extremely dependent on a sound natural environment that is the main attraction for tourists especially in places like Panglao, with the nice hotels and resorts as a secondary draw. Therefore, a more **holistic approach towards greening the tourism sector** is needed. This is why during the mission, meetings were also held with stakeholders that look into other topics of concern.

Transport cooperatives, representing both land and sea transportation companies like vans, tricycles and *bancas* are on the one hand concerned about tough competition, while on the other hand they lobby for more licenses to be issued to their members. As **congestion, noise, pollution** and **hassle** by transport operators are some of the major complaints in the tourism survey, action needs to be taken. At the same time, **high fuel costs** are a heavy burden on the owners and drivers. Therefore, improved horizontal cooperation (among drivers) and vertical cooperation (with tour operators and hotels) to increase loads are options for consideration. Additionally, possibilities to operate more fuel efficient vehicles and / or **vehicles powered by renewable energy** need to be explored.

Different government agencies and NGOs are working on fostering **sustainable agriculture**, as this is considered the second economic driver for Bohol according to the vision and plans of the provincial government. The possibility to link **farmer groups that practice sustainable agriculture with the tourism** sector is an option already explored by some initiatives. One resort successfully engages farmer groups through contract farming schemes to increase its supplier base for organic fruits and vegetables for the its restaurant.

Other government agencies and NGOs are engaged in other areas of **natural resource management on land and sea**. Improving coastal zone management and the protection of marine protected areas (MPAs) is one of their biggest concerns. Projects are underway to revive **coastal ecosystems** through good governance, multisector partnerships and promoting **sustainable livelihoods for farmers and fisherfolks**, to strengthen fisherfolk organizations for the protection, preservation and conservation of coastal resources or to facilitate integrated approaches in **watershed management**. Some resort owners are even financing and supporting the protection of MPAs in the vicinity of their resort. Another project on community based tourism is a multistakeholder initiative that is managed by a community in Bohol primarily aimed at providing alternative income to fisherfolks and women while protecting and conserving the environment. It offers mangrove adventure tours, boat paddling, livelihood demonstrations, local cuisine, folk song serenades, handicrafts and delicacies as well as homestays. And yet another is the Abatan River Development project that facilitates the implementation of the Abatan River Ecotourism Master Plan.

! Summarizing the interviews and meetings, all stakeholders interviewed demonstrate a high commitment to join efforts for a broad approach to greening the tourism value chain in Bohol.

Strategy for greening the tourism VC

As part of the ongoing value chain upgrading strategy development process, a vision was elaborated among public and private tourism stakeholders in Bohol that serves as an ideal starting point for undertaking the greening the tourism value chain initiative. The vision reads as follows

"Bohol is the country's prime eco-cultural tourist destination where visitors experience and learn from its distinct beauty and culture nurtured by a community committed to environmental, cultural and economic sustainability while meeting global tourism standards."

While the natural beauty as well as terrestrial and marine ecosystems in Panglao appear to be still rather intact, concerns about the impact of the increased number of accommodation, transportation and other services in the tourism sector are omnipresent. A recent survey among tourists in Panglao confirms this **preoccupation**, as **tourists complain about traffic congestion, noise and waste** that spoil their recreation.¹⁷ Additionally, NGOs are carefully monitoring the situation and raising their voice regarding **increasing negative environmental impact of tourism**, which – if unattended - will erode the foundations of the businesses involved in the sector in the medium to long term. Tackling the environmental issues is therefore an urgent case.

Alongside the need to tackle these environmental issues so as not to erode future business opportunities, **the competitiveness of the tourism businesses**, especially the accommodation businesses, **can be significantly improved through greening measures**. Energy efficiency and water savings are the most obvious entry points where taking care of the environment and natural resources makes economic sense, as the return on investment of many measures is quick. These potentials will be looked into in more detail below.

Based on the findings described above, a **stakeholder workshop** was conducted on 10 August 2011 in Tagbilaran, the capital of Bohol Province. Hosted by **DTI Bohol**, it attracted the attendance of around 50 participants from the **private and public sector** as well as **civil society**. The **Bohol Provincial Tourism Council** and the GIZ value chain Component Manager set the scene in their opening remarks and presentation, which were followed by presentation of the three national consultants highlighting the findings of their hotel onsite visits. These findings on the current environmental management practices in Cebu and Bohol and recommendations for good practices were complemented by an enthusiastic presentation of the Zero Carbon Resort Project in Palawan.

These presentations gave the participants enough motivation and food for thought for the afternoon session, where they were asked to work on further elaborating the greening the tourism value chain in Bohol strategy. The consultants and the project team elaborated the pillars of the strategy beforehand, thus setting the right framework to be filled in during the workshop.

¹⁷ For details see tourism survey results, PSP Program (2011)

The **strategy** foresees **interventions in six work packages (WP)** along the tourism value chain, as highlighted in the following figure.

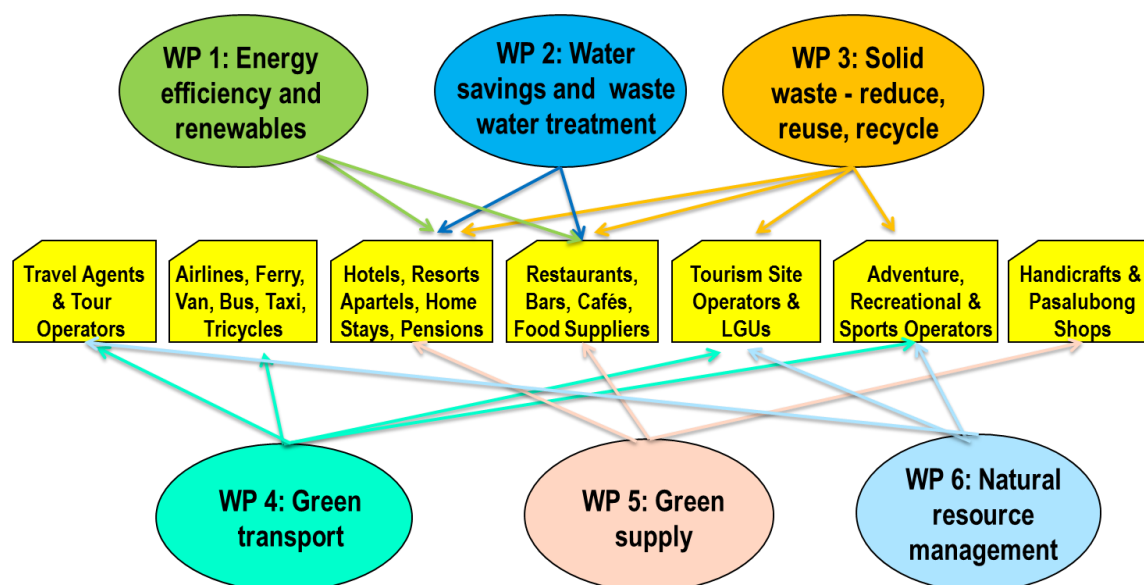


Figure 2 The six work packages for greening the tourism value chain in Bohol

In order to make it more precise and better guide activity planning and eventual project implementation, **objectives** were formulated for each of the value work packages

Table 3 Work package objectives

WP	Objective
WP 1: Energy	Increase the competitiveness of companies by improving energy efficiency and reducing their dependence on fossil fuel as energy source.
WP 2: Water	Guarantee a long term supply of fresh water for all stakeholders on and a clean natural environment.
WP 3: Waste	Avoid waste by applying the Reduce, Reuse and Recycle strategy and properly disposing of remaining waste.
WP 4: Transport	Improve the income of transport operators through fuel efficiency, use of renewables as well as better horizontal and vertical cooperation.
WP 5: Supply	Increase the amount of products sourced from local green suppliers.
WP 6: NRM	Conserve the natural assets of Bohol through protection or sustainable management of natural resources on land and sea.

The staff of DTI Bohol and other participants moderated the six working group (WG) sessions in the afternoon. The WG sessions were intended to

- identify and **discuss major activities** to be carried out in the work package
- focus on quick wins
- think about push, pull and enable measures (stick and carrot)
- group activities according to its intervention level: meta, macro, meso and micro
- identify stakeholders / institutions that need to be involved in implementing the activities.

Resource persons assisted the moderators to steer the discussions and provide additional input and knowledge. The results of the working groups are presented below. Despite the fact that they are not all in the same format, as moderators used different ways to cluster the activities, and the categorization into micro, meso, macro and meta levels is not always precise, they present a **good basis for an operational plan** for implementing the greening the tourism value chain project of Bohol.

Work package 1: Energy efficiency and renewable energy

The objective of this work package is to increase the competitiveness of companies by improving energy efficiency and reducing their dependence on fossil fuel.

Table 4 Work Package 1: Energy efficiency and renewable energy

Micro	Meso	Macro	Meta
promote use of solar water heaters	develop directory of suppliers of EE equipment	LGUs to provide incentives, education and enforcement	government to provide incentives, education and enforcement
promote energy conservation	organize trade fairs on EE / Green Building practices	incorporate environmental awareness in school curriculum	upgrade power infrastructure to allow feed into grid
promote the use of energy efficient bulbs and appliances	invite experts on EE and Green Buildings	make green financing available – amortizations	encourage CHED to incorporate green building principles in technical curricula
conduct staff training on energy conservation		lead by example principle	
establish company policy on EE with implementation support		formulation of ordinances on green building construction	
encourage BAHRR members to adopt BERDE guidelines		land use planning and zoning to reduce need for transport	
encourage online transactions to reduce need for travel		policy to establish bike lanes and parking	
Stakeholders			
Bohol Association of Hotels, Resorts and Restaurants (BAHRR)	Chambers of Commerce / BMOs	LGU	HOHECO
hotel / resort owners	Philippine Institute of Civil Engineers (PICE), United Architects of the Philippines (UAP), Contractors	NGOs – Bohol Marine Triangle (BMT) Panglao, Dauis and Baclayon (Padayon)	DTI, DENR
	academe		BOHOLIGHT
	associations of schools and universities		DepEd
	HEI		

Work package 2: Water savings and waste water treatment

The objective of this work package is to guarantee a long term supply of fresh water for all stakeholders on Panglao Island and a clean natural environment. In order to achieve this, participants of the workshop recommended the following

Table 5 Work package 2: Water savings and waste water treatment

	Saving Water	Water Supply	Wastewater
Meta	involve Green Priests (care Parish priests from Panglao and Dauis) to create awareness	encourage use of materials that allows rainwater, surface water soil absorption	incorporate topic in awareness campaign
Macro	regulate of deep wells (care LGU) meters freezing of permits	enforce ordinance on rainwater harvesting	cluster resorts (common facility)
Meso	establish baseline data, municipal level (care Municipal Planning and Development Coordinator (MPDC))	organize tree planting schemes for better watershed management	disseminate information on available technology (technical working group – Noel Hormachuelos, Sanggunian Bayan Chairperson on Environment)
	engage local suppliers in meetings (care MPDC)		
	consolidate recommendations		
	carry out media campaign (care civic organizations / chambers of commerce)		
Micro	carry out awareness campaign on enterprise level (care ZCR)	harvest rainwater	stop illegal discharge of effluent
	reuse gray water	apply 60 - 40 ratio for built up areas and provide open space for planting	
	apply laundry trucking instead of water trucking		
	establish baseline on usage at enterprise level		

Work package 3: Solid waste – Reduce, Reuse and Recycle

The objective of this work package is to avoid waste by applying the Reduce, Reuse and Recycle (3Rs) strategy and properly disposing of remaining waste. In order to achieve this, participants of the workshop recommended the following

Table 6 Work package 3: Solid waste – Reduce, Reuse and Recycle

	Activities	Champions	Dates
Meta	educate children on the 3Rs	Melot – Holy Name University (HNU) Junji – University of Bohol (UB)	Plan – 15 August Launch – 27 September
	integrate principles of safety, hygiene and sanitation in the curriculum of all courses	Melot / Junji	
	carry out Most Tidy Barangay competition	Mayor / Vice Mayor Lazaro	February 2012
	disseminate RRR strategy in the radio program of the mobile consumer group	DTI / Consumer watch Bohol	Start 16 August; 4:00 - 4:30 pm DYRD
Macro	strictly implement the Solid Waste Act	Mayor / Vice Mayor Lazaro	
	integrate disposal of waste from boats / ships in the environment code of Bohol	Zen with Bohol Environment Management Office (BEMO)	
Meso	include the topic in the agenda of next meeting of BAHRR / Alona Beach Community Association, Inc. (ABCAI)	Vicky with Zen	September 2011
Micro	establish baseline data on waste generated by hotels and resorts	Vicky	September 2011 (to be discussed)
	enforce waste segregation at the households and all establishments	Mayor / Vice Mayor Lazaro	
	organize monthly purok meeting on the RRR strategy	Elie Mejos / Tata Johnson	
	organize the barangay assembly on the RRR strategy		

Work package 4: Green transport

The objective of this work package is to improve the income of transport operators through fuel efficiency, use of renewables and better horizontal and vertical cooperation. In order to achieve this, participants of the workshop recommended the following

Table 7 Work package 4: Green transport

Activities	Stakeholders
Change the system of marketing	operators, drivers, resort owners, tour operators, travel agencies
transport tourist by batch or group from airport to hotels	
apply <i>hip hop</i> operation	
improve systems for dolphin and whale watching to reduce boats (see El Nido case)	
operate a <i>seat in coach</i> type of service	
Going back to the basics	LGU, community, tour operators
use baruto or kayak on protected areas of rivers and the sea	
promote outrigger paddling in tours, represents our culture	
use LAYAG operated boats	
Policies formulations for transport sector	Marine Industry Authority (MARINA), Air Transportation Office (ATO), DOT, LGUs, LTO, Land Transportation and Franchising and Regulatory Board (LTFRB), Coast Guard, transport groups (land and sea)
LGU to control the scheduling of all guest carrying vessel in the area	
avoid sudden acceleration of engine (training of drivers)	
enforce no running of aircon while on standby <i>idling</i> (training of drivers)	
to save fuel and to protect our seas, reduce the number of daily trips through improved cooperation	
carry out capacity building of PASEO members	
control speed limits in river cruise to eliminate /lessen soil erosion	
no chewing gum and smoking on land and water craft	
discipline drivers to reduce gas and save lives	
reduce numbers of boat passengers	
conduct tourist briefing before turning on the engine	
green driving discipline	
Benchmarking / Conduct survey	
implement docking and loading station system	
determine carrying capacity per tourism product	
limit number of transport groups	
Use of new and fuel efficient vehicles and renewables as alternate source of energy	transport operators (land and sea), LTO, LTFRB, private sector, LGU
conduct regular engine check up	
refleet land vehicles with energy efficient ones	
use wind, solar to charge batteries for e-vehicles	
encourage operation of gas (LPG) powered vehicles	
set up battery operated land transport from port / airport route to Panglao and close distance tours	
use fuel efficient vehicles	

Work package 5: Green supply

The objective of this work package is to improve the income of accommodation businesses through stable trading relations with green suppliers. In order to achieve this, participants of the workshop recommended the following

Table 8 Work package 5: Green supply

Activities	Stakeholders
define criteria / guidelines / standards for green crafts, agriculture and services products regarding production process, transport logistics and packaging	green suppliers and buyers; government; NGOs, POs
create a technical working group to set up an Green Procurement Program for Tourism	
create awareness for suppliers and buyers (define green terms; educate hotel / resort / restaurant owners; build awareness about green procurement practices)	
set up an inventory of classified green products	
establish market linkages (matchmaking event to bring together resorts as well as local and green suppliers)	
provide technical support / TA for local green suppliers	
provide incentives and identify areas for sustainable (maybe organic) vegetable production	

Work package 6: Natural Resource Management (NRM)

The objective of this work package is to conserve the natural assets of Bohol through the protection or sustainable management of natural resources on land and sea. In order to achieve this, participants of the workshop recommended the following

Table 9 Work package 6: Natural Resource Management (NRM)

Micro	Meso	Macro	Meta
compute economic value of the dive sites	establish permanent docking area for fisherfolks	apply fisheries management intervention	conduct capacity building of direct stakeholders
apply resource use fees	enforce sustainable management of MPA	update zoning of coastal areas	carry out information education campaign (IEC)
guarantee the livelihood of farmers and fisherfolks	strengthen Coastal Law Enforcement Council (CLEC)	impose strict regulation on endangered marine species	
value all natural capital of the BMT area (from ridge to reef)	beach management: valuation and protection	develop policy on macro species of marine resources	
tie up reed bed with livestock production	set up ID of high risk areas and proclamation as protected	impose strict implementation of 20 meters salvage zones	
plant beach forest species by resorts and residences	apply beach conservation measures	elaborate local policy on conserving caves (water) and sinkholes	
conduct Biome within BMT area	charge environmental levy for environmental / ecotourism based activities	conduct Danajon Bank management interventions and provide conflict resolution	
set up ID of habitat of endangered wildlife species		expand MPAs to include seagrass	
offer carbon offsetting activities to tourists		declare Abatan River as living ecological museum	
conduct Bathymetry Survey (BMT)		declare nesting grounds for sea turtles	
save and manage the overpopulated small island of Bohol		implement existing ordinance on conservation of marine resources	
		develop and implement fast track a Coastal Resource Management (CRM) master plan	
		declare dive sites as MPAs	
		prohibit aquarium fishing trade	

Micro	Meso	Macro	Meta
		strictly enforce environmental laws	
		practice carrying capacity	
Stakeholders Sand and Gravel permit holders, BFAR, PCSDD, POs, PAMBs, PADAYON, ARDMC and the like, MEDIA, Watershed Management Councils, resort operators (including other tourism service providers), DENR, DTI, IBP, UAP Bohol Chapter, LGUs, contractors (construction industry), commercial fishing operators, NGOs, Alliances of LGUs, DOT, Church, DILG (PNP), BEMO, academe, scientific community			

! As mentioned, these actions were proposed during the stakeholder workshop on 10 August 2011. They now need to be reconfirmed and finetuned through a participatory process with the most important project partners and also complemented by other proposals of stakeholders that were not present during the workshop, as well as by screening the recommendations of the national consultants, the experiences from the ZCR project as well as other project experiences (refer to Section 6.1) through the local project team, in order to come up with an ambitious but realistic strategy. Additionally, they need to be put into a project management format which will be explained in the next section.

One element of the strategy is to set indicators to measure the success in each of these work packages. The following indicators were drafted by the consultant in preparation of the stakeholder workshop, but they were not discussed there as this would have been too much of a top down approach. Nevertheless, they can serve as a basis when further discussion on the strategy with the local partners are held in the weeks to come.

Table 10 Work Package Objectives and Indicators

WP	Objective	Indicators
WP 1: Energy	increase the competitiveness of companies by improving energy efficiency and reducing their dependence on fossil energy	60 percent of accommodation businesses in Bohol reduce their energy costs by 40 percent by 2015
WP 2: Water	guarantee a long term supply of fresh water for all stakeholders and a clean natural environment	80 percent of accommodation businesses apply water saving technologies by 2015 80 percent of accommodation businesses treat their wastewater according to regulations by 2015
WP 3: Waste	avoid waste by applying the Reduce, Reuse and Recycle strategy and proper disposal of residual waste	70 percent of accommodation businesses compost biodegradable waste 70 percent of accommodation businesses apply waste reduction schemes a comprehensive solution is found for an adequate landfill by 2012
WP 4: Transport	improve the income of transport operators through fuel efficiency, use of renewables and better horizontal as well as vertical cooperation	70 percent of transport operators use energy efficient engines by 2015 pilot schemes are tested for renewable energy based transport by 2015 transport operators increasingly cooperate to improve vehicle occupancy a tourist survey in 2015 show less complaints about noise, air pollution and congestion
WP 5: Supply	Increase the amount of products sourced from local green suppliers	70 percent of accommodation businesses regularly source food from local farms by 2015 50 percent of accommodation businesses source nonfood products from green regional suppliers by 2015
WP 6: NRM	conserve the natural assets of Bohol through protection or sustainable management of natural resources on land and sea.	DENR confirms an increasing compliance with conservation laws and regulations by 2014 CLUPs are updated and applied for all municipalities in Bohol by 2015 stakeholders confirm a well balancing of interests between tourism development and natural resource protection

Greening the tourism VC project management

The greening the tourism value chain in Bohol project shall become an **integral part of the tourism value chain upgrading** project initiated over the past months by DTI, GIZ and its partners in Bohol.

It is proposed that the overall project ownership shall lie either with the **Bohol Tourism Council**. The **Bohol Tourism Office** could act as a **secretariat**. The PSP program team of DTI and GIZ could **facilitate project implementation**.

It is of extreme importance that the roles and responsibilities are discussed and agreed upon. **Individuals from different stakeholders** (public and private institutions, companies, NGOs, individuals) shall be selected to be in **charge of each of the six work packages**.

Based on the experience in many other private sector development projects where the value chain approach is applied, **managing value chain upgrading projects is one of the most critical factors**. Value chain development projects typically are rather complex

- a lot of activities are carried out over a period of a few years
- taking place simultaneously at many different levels (micro, meso, macro, meta)
- with many different value chain actors
- with many different supporting institutions
- and with many different service providers.

This is also true for the greening the tourism value chain in Bohol project. In order not to get lost, **basic project planning and management tools need to be applied**. Based on successful value chain development project experiences, it is essential to carefully

- develop a clear **upgrading vision** for the value chain together with key stakeholders (done)
- break down this vision into a feasible **strategy** (done)
- cluster the activities of the strategy into main fields of intervention (**work packages**) along the value chain (done)
- further plan the **detailed activities** in each work package (done, but needs to be revised, finetuned and completed by the national team and its partners)
- define the **leading organization / player responsible** for each work package and name the **responsible person** (to be done by the national team and its partners)
- **budget** the different activities with the corresponding funding sources (to be done by the national team and its partners)
- design the right **sequence** for implementing the activities according to calendar weeks (to be done by the local team and its partners)
- **monitor project implementation** with the Excel sheet (see below) that contains room for writing down achievements and success stories, deviations and constraints, lessons learned and outlook as well as actions needed by management (to be done by the national team and its partners).

It was agreed between the PSP team and the consultants that

- the *greening strategies* / activities should be incorporated into the wider tourism VC upgrading process designed by the Bohol Tourism Summit in June 2011
- that a participatory action planning process with all stakeholders is needed, including those not present during this workshop
- that the ownership of the strategy and activities should lie with the respective subsector associations under the umbrella of the Bohol Tourism Council.

A **value chain master planning tool** (Excel document) as the **key project management tool** will be provided to GIZ and its partners to be used for managing the greening the tourism value chain project.

One idea discussed during the mission was to align the responsibilities for managing the work packages with the committees established to implement the overall tourism value chain upgrading initiative. The corresponding division of tasks is shown in Figure 3 below

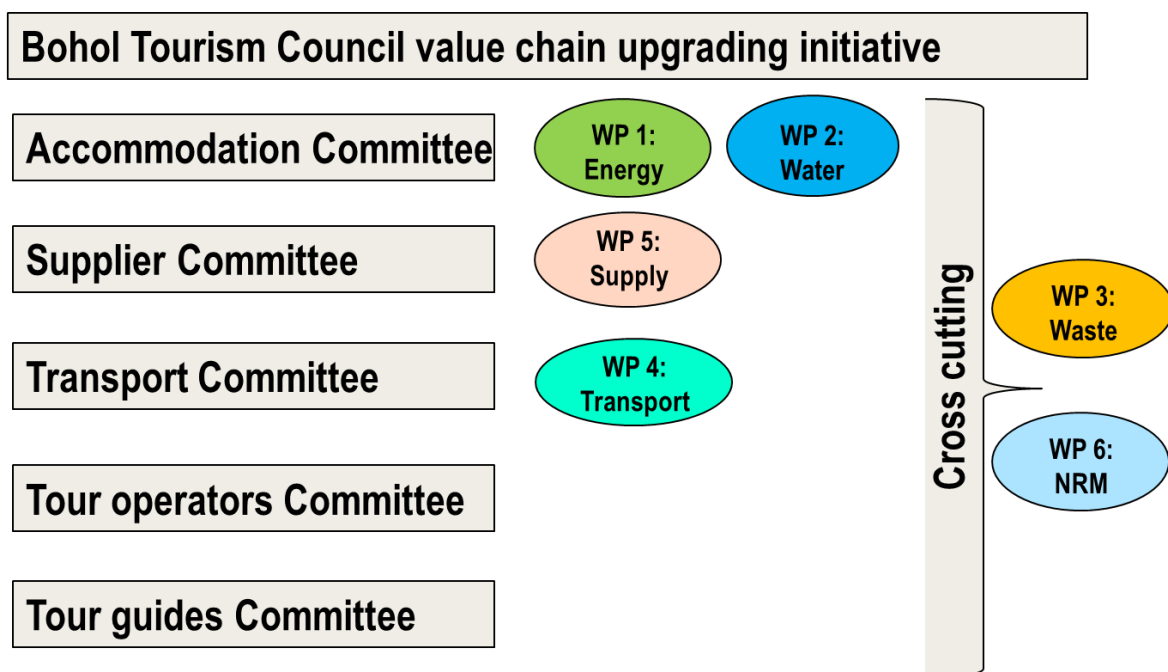


Figure 3 Possible work package responsibilities

Whatever the division of responsibilities will be, **local ownership is crucial** for project success. **Interests must be balanced** between the stakeholders. A **good steering and management** of the overall project is needed. Work packages and activities must be treated as own little projects with a sound strategy and plans. Responsibilities and work package ownership must be clear.

Another crucial point for the success of the project is that the persons responsible for the work package and the overall **project management team must be creative** in mobilizing additional **resources** for activities. There are **plenty of potential partners** out there, as illustrated in the following overview.

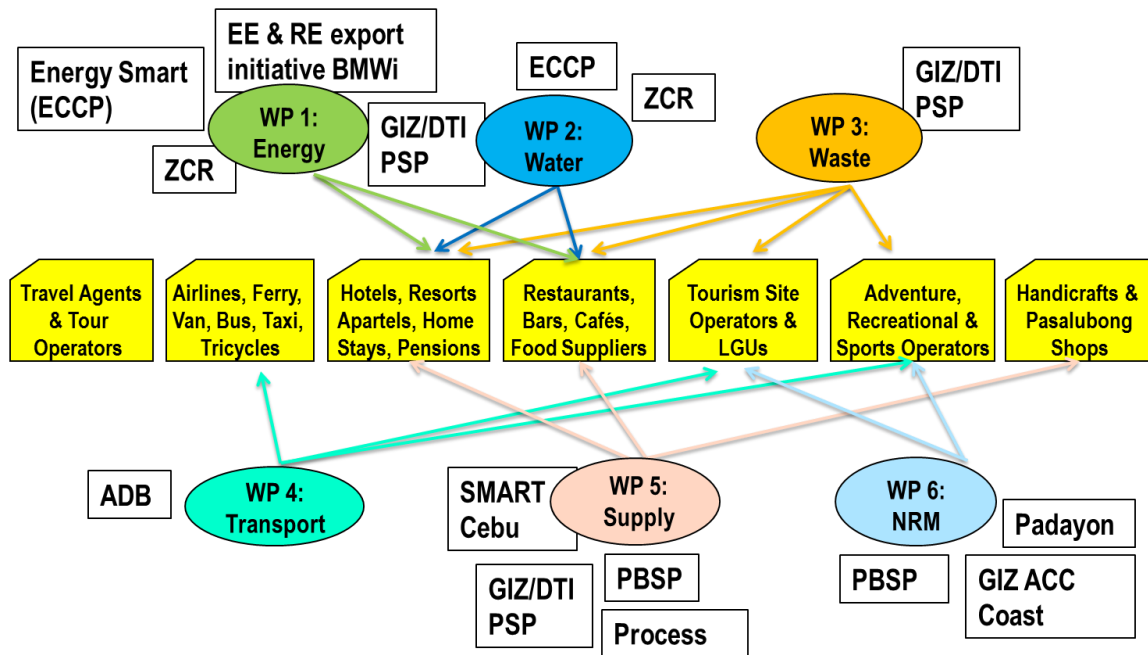


Figure 4 Fig. 4: Potential partners for each work package

This overview was quickly done during the mission. Most probably plenty of other partners can be identified and motivated to join efforts in greening the tourism value chain in Bohol.

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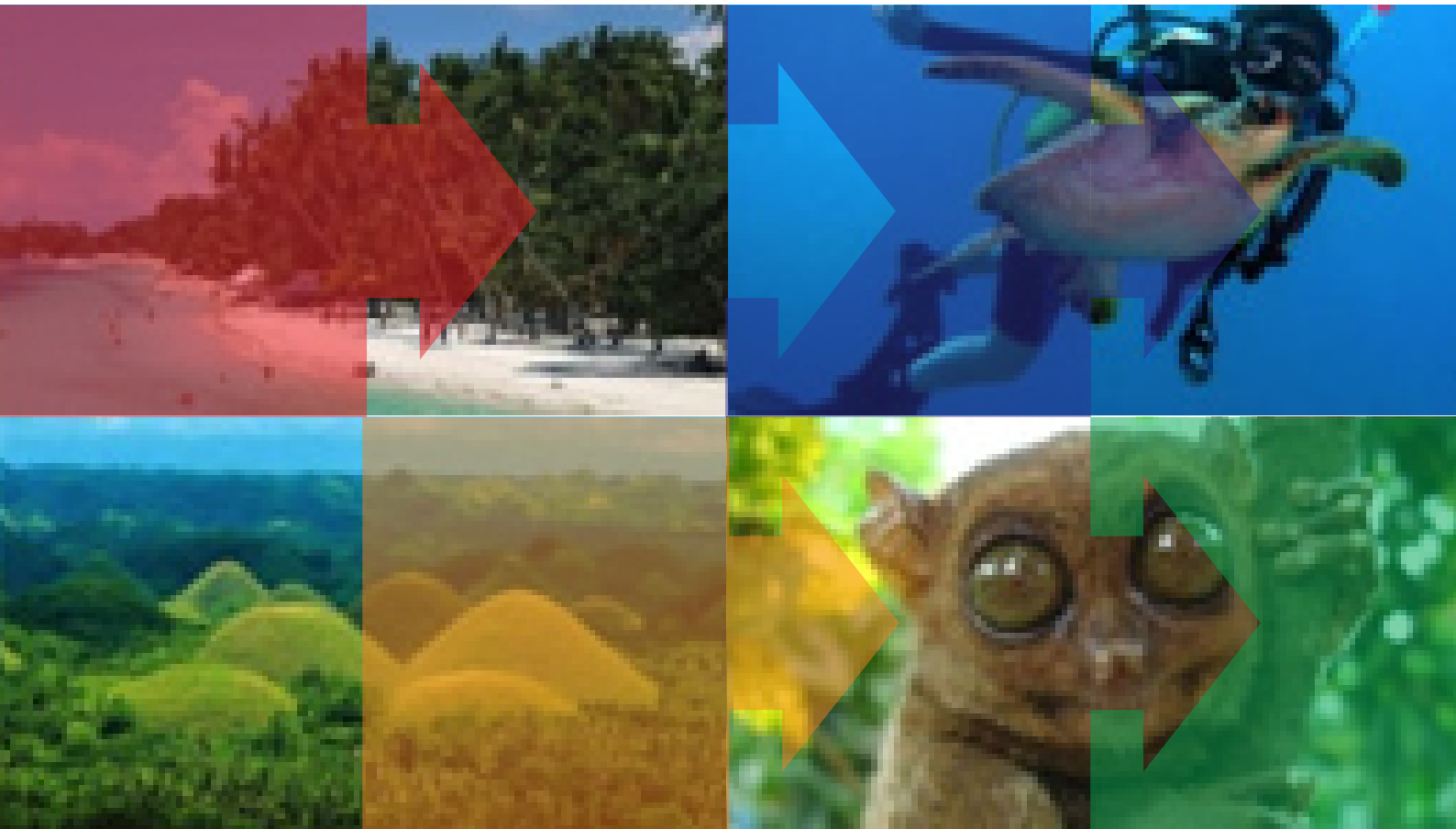
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GTZ Office Manila
German Development Center
10F PDCP Bank Centre
V A Rufino St cor L P Leviste St
Salcedo Village, Makati City 1227, PHILIPPINES

Private Sector Promotion (SMEDSEP) Program
PSP Program Office, 7F New Solid Building
357 Sen Gil Puyat Avenue
Makati City 1226 PHILIPPINES
☎ +63 2 897 8199, 556 8732, 896 4319
✉ info@smedsep.ph
🌐 smedsep.ph

Private Sector Promotion (SMEDSEP) Program Cebu
GF LDM Building
Legaspi St cor M J Cuenco Ave
Cebu City 6000, PHILIPPINES
☎ +63 32 412 2256
☎ +63 32 254 4958
✉ cebu@smedsep.ph