

TRACER STUDY OF PFS INTERVENTIONS IN BATTAMBANG, CAMBODIA

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Background of CDIA Intervention

Battambang is the second largest urban center in Cambodia located about 300 km southeast from the capital city of Phnom Penh. With a land area of 115 sq km and population of 155,000 (as of 2015), this French colonial town has evolved into an agro-industrial hub and tourism destination being located within the proximity of Tonle Sap Lake and the Thailand border. Like many other secondary cities in Cambodia, Battambang is faced with the daunting task of meeting the demand for urban infrastructure and essential support services in the midst of rapid growth of urban population, expansion of urban areas and challenges brought about by climate change.

Box 1: Project Overview

PFS period	Nov 2009 – August 2010
Focus sectors	Solid waste management; drainage and wastewater management
CDIA supported activities	Formulation of prioritized urban infrastructure program; PFS on solid waste management and drainage wastewater management; Linking of PFSs with potential financiers
L2F Status	Funded by ADB Loan

To address these challenges, the municipality of Battambang requested for technical assistance from CDIA for the preparation of strategic urban environmental improvement projects with view towards enhancing climate resilience and sustaining the livelihood of its citizens. In response to the request, CDIA approved the city application in October 2009 and dispatched a team of consultants to Battambang with the task of: a) formulating medium-term prioritized urban infrastructure program; b) preparing pre-feasibility studies (PFS) for the improvement drainage, wastewater and solid waste management systems; and c) linking the PFS studies with potential financiers

As part of its internal monitoring and evaluation processes, CDIA conducted the tracer study in Battambang from August 21 to 25, 2017 to track progress, effectiveness and results of its completed interventions. Following is a summary of the tracer study findings.

Progress of PFS Interventions as of August 2017

Solid Waste Management

Based on discussions with stakeholders, the following solid waste management interventions were recommended by the consulting team in the PFS final report submitted to CDIA in August 2010: a) solid waste management strategy development; b) institutional development and capacity building; c) waste collection improvement and expansion; d) waste collection contract evaluation; e) sanitary waste disposal; f) waste data collection; g) NGO networking and support.



Fig. 1: Informal garbage recycling

In November 2012, the PFS was formally linked to financing through the ADB-funded Greater Mekong Sub-region Southern Economic Corridor Towns Development Project (SECTDP). One of the PFS recommendations that will soon be implemented under SECTDP is the establishment of a

Materials Recovery Facility (MRF) for solid waste recycling. When completed, the MRF will process 30 cu m of recyclable materials per day benefiting some 128,000 residents in Battambang.

In order to take the rest of the PFS recommendations forward, the Government of Cambodia requested for financial assistance from ADB to improve solid waste management (SWM) services in Battambang under the Second Tonle Sap Integrated Urban Environmental Management Project (Tonle Sap II). In support of this ADB loan application, CDIA provided further technical assistance in preparing the PFS, preliminary engineering design and financial plan for SWM improvements in the immediate, medium and long-term. In the first five years (2020-2025), the Tonle Sap II will invest USD6.7 million for acquisition of SWM equipment and establishment of composting facility and sanitary landfill.



Fig. 2: Improved collection of hotel and restaurant waste

By 2025, waste collection is projected to increase from 32% (as of 2015) to 50%, recycling will improve from 1% to 10% with market waste recovery increasing to 25%, and waste disposal will be improved by upgrading the existing dumpsite to a sanitary landfill.

Although key investments recommended by the PFS has yet to be realized, key municipal officials observed that SWM services in Battambang has improved over the last seven years. From only 22% in 2010, waste

collection service has improved to 32% of total households with increased frequency of collection and expanded coverage of collection to include households living along small roads. With the improved waste collection, burning of wastes and dumping of garbage in the streets have been significantly reduced.

With the transfer of SWM function from the province to the municipality under Sub-decree 113 in 2015, the municipality of Battambang has established the Waste Management and City Beautification Bureau and intensified its campaign towards fulfillment of its vision of a “Clean, Green and World Heritage Municipality” by 2020. Current activities of the SWM bureau that are aligned with the PFS in 2010 include: a) raising awareness of residents about 3R (Reduce, Recycle, Reuse), b) review of the contract of CINTRI, the service provider previously contracted by the province for waste collection and operation of waste disposal facility; c) expansion of waste collection by engaging another service provider (Leap Lim) to service two districts not covered by CINTRI; and d) market waste composting and waste characterization in cooperation with a Cambodian NGO - COMPED.



Fig. 3: Final disposal of solid waste at the city-managed open dumpsite

Drainage and Wastewater Management

Likewise, the CDIA PFS intervention in 2010 recommended measures to improve drainage and wastewater/sewerage management in Battambang including: a) development of neighborhood sanitation/sewerage systems; b) rehabilitation of existing wastewater treatment plant (WWTP) in Chamkar Samraong district; c) maintenance of combined drainage and sewerage pipe systems in seweraged areas in Svay Pao district; d) development of separate systems for drainage and sewerage



Fig. 4: Existing wastewater management facility in Chamkar Samraong

in unsewered areas and e) integration of stormwater drainage into the planning and development process. Largely due to very limited institutional and financial capacity, there was very little progress in the implementation of the PFS recommendations. Despite the absence of an integrated drainage plan, however, the municipality was able to expand its drainage network from 16 km in 2010 to 40 km utilizing locally generated funds. Moreover, the ADB-funded SECTDP will soon begin construction of new embankment in the Sanker River and related flood

control structures. When completed, this SECTDP sub-project is expected to reduce flooding within the municipality's commercial center.

Recognizing the urgent need to address the inadequate sanitation services in provincial towns, the Government of Cambodia requested for ADB loan assistance under the Provincial Water Supply and Sanitation Project (PWSSP) aimed at improving not only water supply but also sanitation infrastructure and services in six municipalities including Battambang. CDIA provided technical assistance in preparing the PFS which, among others, recommended new approaches to addressing drainage and wastewater issues in Battambang to include: a) decommissioning of existing 5.8 ha WWTP in Chamkar Samraong and development of a conventional trickling filter-based WWTP in nearby 6.6 ha site; b) development of separated sewer network in identified priority areas; c) provision of 6 cu m vacuum truck to the Department of Public Works and Transportation (DPWT) and regulation of privately-operated septage vacuum trucks; and d) raising awareness of residents on wastewater management. Total PWSSP investment in wastewater and sewerage improvement in Battambang is estimated at USD11.8 million.



Fig. 5: New drainage channel funded by national government

Conclusion and Lessons Learned

The CDIA interventions in Battambang are clear examples of PFSs being linked to financing even while the projects were at the early stages of the infrastructure investment cycle. While key project stakeholders at the provincial and municipal level observed the slow progress in realizing most of the PFS recommendations, they remain optimistic that the key development impacts envisaged during the PFS stage, namely, improved living conditions and enhanced climate resilience of its residents, will be realized when the infrastructure investments funded by ADB are fully implemented. The Chief of Battambang's Waste Management and City Beautification Bureau, however, cautioned that "the economic and tourism value of Battambang will be put to waste if the SWM measures recommended by the PFS are not realized."

A key lesson learned from the Battambang experience is the importance of strengthening of the institutional capacity and skills of stakeholders at the project preparation stage. The capacity building component of CDIA's PFS interventions was viewed as very relevant considering that some provincial functions (e.g., SWM) were being transferred to the municipal governments. According to the Provincial Head of DPWT, "knowledge and skills learned during the PFS will be very useful not only in responding to the current problems faced by Battambang but more importantly in fulfilling the long-term vision of a "Clean, Green and World Heritage Municipality."