# DEIKA ON SOLID WASTE MANAGEMENT (SWM) BATTAMBANG





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### Rene Gradwohl

Country Director Konrad-Adenauer-Stiftung Cambodia

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## **ABBREVIATIONS**

BTB	Battambang; Municipality of Battambang
Cintri	Local service provider and landfill operator
COMPED	Cambodian Education and Waste Management Organisation
GIS	Geographic information system
KAS	Konrad-Adenauer-Stiftung
Leap Lim	Local service provider
SWG	Sub-working Group
<b>SWM</b>	Solid Waste Management
TWG	Technical Working Group on Solid Waste Management

**WG**......Working Group

## 1. INTRODUCTION - Deika DEVELOPMENT

At the outset of this report, it is important to point out that waste should not be something we distance ourselves from. Waste is an inextricable and unavoidable component of societies. The way we deal with waste mirrors a key understanding of how stakeholders, procedures and challenges can successfully be managed. In a modern society, waste is considered as a valuable resource.

This report provides insights in a possible step to start managing waste in a comprehensive manner. It shall be a motivator and inspiration for other Communes and Sangkats to tackle the challenges related to this resource and to find a step-by-step way to make use of the potential of modern urban resources management instead of just trying to get waste out of sight.

There is no doubt that the production of waste will increase all over Cambodia. The sooner the Communes start to develop coping strategies, the higher will be the public health of citizens and the quality of environment, which is an essential part of a higher living quality in Cambodia.

The overall objective of the project has been to foster the City of Battambang (Battambang, BTB) in its endeavours to draft and publish a Deika on Solid Waste Management (SWM). The project took place within the frame of decentralization processes in Cambodia, which are a rather young phenomenon.

Nevertheless, all included participants agreed on a participatory process in order to draft a *Good Law*, which meets the criteria of simplicity, plain language, efficiency, precision and effectiveness. Such a law would be able to guide the development of Cambodian urban centres in a future-oriented and sustainable way.

Per definition, a Deika is a local regulation issued by local authorities within their scope of authority.<sup>1</sup> In this regard, a Deika addresses directly problems on the Municipality/District level (M/D) and is therefore an important tool to solve problems and influence behaviour as well as to set up comprehensive strategies in a legal form. The Deika on Solid Waste Management in Battambang refers to Sub-Decree 113 and determines the following objectives in article 2:

- a. to create and preserve Battambang as a green city.
- b. to enhance and preserve public hygiene and health.
- c. to strengthen the efficiency of the SWM system in BTB and keep costs at an affordable level.
- d. to define and strengthen the role and duties of BTB Municipality and involved institutions (Sangkats, Line offices) in reference to the execution of a modern SWM, which is based on the 3R principles reduction, reuse, recycle.
- e. to involve and define the responsibilities and duties of the citizens of BTB in reference to a modern SWM, which is based on the 3R principles reduction, reuse, recycle.
- f. to promote public awareness and understanding about the role of SWM

<sup>1</sup> Law on the Administration and Management of Commune and Sangkat; Law on the Administration and Management of the Capital, Provinces, Municipalities, Districts, and Khans.

for a clean and healthy environment.

g. to enable access to SWM to all citizens of the city of BTB.

The objectives above require a close, open and transparent multi-stakeholder approach among involved actors in Solid Waste Management. Among the key stakeholders in the drafting process, there have been the Battambang Municipality's Office of Beautification and Solid Waste Management, the Department of Finance, the Sangkat Council, Village Chiefs, the Board of Governors, local NGOs, the National League of Commune and Sangkats, Konrad-Adenauer-Stiftung Cambodia, one international expert from LotusConsulting and the service providers Cintri and Leap Lim.

All of them brought in different experiences, competencies, interests and views. In order to develop a *Deika*, which builds bridges instead of deepens the ditches, a participatory approach had been applied. The following report will outline key steps and provide an outlook.

## 1.1 Excursion: The Waste Cycle - A Brief Outline



#### **Waste Generation**

The waste generation describes the quantitative amount of waste generated by cities, societal groups or countries. It also describes the composition of waste regarding the main types: garbage, solid waste, green waste, recyclable waste, bulky waste, hazardous waste and construction waste. Detailed information about the amount and composition are crucial to develop a comprehensive waste strategy. Urbanization and economic development (change of consumption behaviour) often lead to an increase of specific waste types in specific areas, which need specific solutions.



### **Storage and Discharge**

Households, clinics, restaurants, schools, markets and private sectors companies are generating different types of waste. Each waste type is treated in another way. For instance, organic waste and green waste can be composted. Cans and plastic bottles can be recycled. Medical waste can be burned in special plants. In order to ensure that each specific waste stream is treated and utilized in the most appropriate way, the waste must be separated at source and collected in a way which mitigates the risk of mingling and wrong transport.





### **Collection and Transport**

The collection at source can be managed in diverse ways. One way is to assign a service company, which is responsible for collecting the waste, cleaning the collection points and transporting the waste to the next transfer station or treatment facility. Currently it can be seen that waste in Cambodia is collected either in plastic bags, baskets or bins. Furthermore, the waste is rarely separated, which leads to a loss of valuable resources and economic potential.



## Disposal/Recycling

A modern waste management system is transforming all types of waste into energy, new products or other resources. In recent years, the solid waste system in Cambodia has gradually developed and more waste stays within the organized system. However, the problem of illegal burning and uncontrolled disposal are causing severe environmental and economic damage. Further on Cambodia loses valuable resources, as recyclables are transported to neighbouring countries and recycled there, instead of remaining in the Cambodian economy. Tackling these challenges by local regulations through setting incentives, encourage local recycling industries and enforcing punishment against violations of environmental laws, are only the most obvious ways to solve these issues. The standard of landfills has to be improved urgently.

## 1.2 SWM in the Municipality of Battambang

The Battambang Municipality is the second largest city of Cambodia with a total population of 152,032<sup>1</sup> and 115.44 km<sup>2</sup> area. Agriculture is the main economic activity of Battambang; approx. 74% of the municipal territory (85.6 km<sup>2</sup>) is agricultural production.

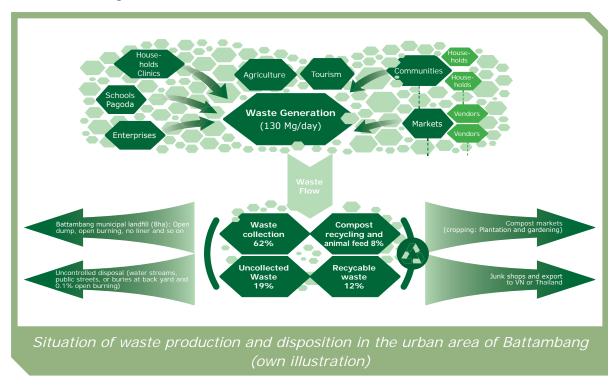
The population of Battambang generates about 126 t/day (tones per day) of solid waste. This includes waste from households, institutes, business and markets, tourism and agro activities. As Battambang undergoes (like the whole of Cambodia) economic development and faces a related increase of consumption and consumption behavior, the waste generation will increase over the next years.

The average waste collection is estimated to approximately 80 t/day. This waste is mainly collected from households, businesses and markets and is disposed at the landfill of Battambang. About 15 t/day are collected by scavengers and recycled by junk shops. About 30 t/day remain uncollected and are disposed in an uncontrolled and hazardous manner. In Battambang two waste collection companies are operating, CINTRI (8 Sangkats) and Leap Lim Company (2



## Sangkats).

As a result the landfill of Battambang is the main place for disposal of solid waste in Battambang. COMPED has conducted several analysis of the waste composition and found out that the waste comprises a high share of organic waste (about 70%). The remainder is mainly composed of plastic waste (15-20%), paper and glass. In particular the waste collected at local markets is composed of high amounts of organic waste.





# 2 THE PROCESS OF DRAFTING THE Deika ON SWM IN BATTAMBANG

The pilot project to draft the Deika on Solid Waste Management (SWM) in Battambang started in November 2016 and ended in May 2017. Below are the steps taken to successfully draft the Deika on SWM in Battambang. The whole process was facilitated by a coordination team consisting of KAS, LotusConsulting, COMPED, NLC and the Department of Beautification and Solid Waste Management of the Municipality of BTB.

### 1. Identify Need of New Deika

- Conduct Baseline study
- Create Working Groups
- Validate the main problems and related objectives

## 2. Drafting the Deika

- Kick off the Deika drafting in the Working Groups
- Hold mid-term Workshop
- Revise and finalize the Deika

## 3. Submit Deika for Review and Consultations

- Submit the drafted Deika to different committees for review

## 2.1 Identifying the Need of a New Deika

### 1. Baseline Study<sup>2</sup>

The baseline study had been conducted by the local NGO COMPED, who has been working in the field of waste management in Cambodia for more than 15 years. Part of the baseline study had been field visits to the landfill of Battambang, junk shops, the city hall, communes and Sangkats as well as meetings with all related stakeholders in order to better understand the challenges, needs and the current status. Among the main problems has been the conflict line between citizens, who don't want to pay a higher waste fee, and the service provider.

The citizens blamed the service provider to not regularly collecting the waste. On the other hand, the baseline study could shed light on the situation of the service provider and the financial, human resource and technical shortcomings.

<sup>2</sup> Title of the baseline study: "Waste Management Situation in the City of Battambang" to Support in the Development of a Waste Statute for the City of Battambang. It is available upon request at KAS Cambodia.



Moreover, the baseline study provided an overview over the legal setting, specific waste generation as well as risks related to the project implementation.



Open and honest communication is indispensable to get a realistic understanding of the whole situation. Regular meetings, which are well-prepared and transparent, are very important. Such meetings have to focus on reliable information and analysis of the realistic data. All related stakeholders should be involved in the meetings.

## 2. Creation of Working Groups

A Technical Working Group (TWG) for SWM was already existing within the Municipality of Battambang. The TWG offered a good basis for the execution of the project.

This working group was composed of members of the provincial administration (Department of Environment and Department of Finance), members of the Municipal Council, members of the Municipal Committee for Women's Affairs and the Technical Committee for Environmental Affairs, the Municipal Governor and his representatives, the Office of Municipal Beautification and Waste Management, Representatives of the Sangkats and Village Chiefs and other Municipal departments (see below).

Eventually the TWG was the main responsible committee to draft the Deika. In order to effectively work on the content, the TWG was divided in sub working groups (SWG, see next step). The main task of the TWG was to draft a Deika in a participatory manner, which serves the citizens of Battambang and legally determines objectives, responsibilities, duties and next steps for the short and long-term activities in SWM in Battambang.

## 3. Validation of Baseline Study's Findings

The common formulation, discussion and validation of the main problems was the next step. In order to do so, an **inception workshop** was organized at the City Hall of Battambang. In order to create a high level of ownership among all involved stakeholders and the population, a participatory approach was chosen. The local institutional framework, the socio-economic conditions as well as technical requirements of the waste management system in Battambang had been discussed by all stakeholders as basis for the process of developing a waste statute (Deika) for Battambang during the upcoming activities.

### The inception workshop had the following main purposes:

- Introduction of all stakeholders
- Introduction and discussion of the need of a Deika
- Overview waste situation and regional best practice
- Participatory validate the main problems, and
- Defining next steps and Working Groups



## Participants and members of working groups had been:

- Governor of Battambang
- Deputy of governor of Battambang
- Admin director
- Department of Environment
- Department of Economic and Finance
- Department of Tourism
- Department of Health
- Department of education youth and sport
- Office of city beautification and waste management
- Provincial association of MD and CS council
- Chief of Sangkat
- Private companies Cintri and Leap Lim
- National League of Communes and Sangkats
- Konrad-Adenauer-Stiftung Cambodia
- LotusConsulting
- COMPED



## 2.2 Drafting the Deika

Once the problems were validated through the consultation with relevant stakeholders during the inception workshop and different strategies have been discussed, the WGs started drafting the Deika by following the steps below:

## 1. Kick-off the drafting of the Deika in the Working Groups

As each of the TWG members had different interests, experiences and ideas, the TWG was divided into sub-working groups (SWG). These groups just focused on specific aspects of the legal text and discussed realistic scenarios on how to improve them.

**SWG 1 – General outline, management, local council (technical experts):** (Cintri, Sangkat governors or representatives, Office of City Beautification and Waste Management, City council, others)



- General Outline of Deika
- Legal requirements
- Technical improvements
- Recycling
- Resource recovery
- Hazardous waste
- Hospital waste
- Further steps and implementation

### SWG 2 - Fee setting and collection service:

(Regulations, Economy and Finance: Financial Dpt, Environmental Dpt, Cintri, Leap Lim, Office of Municipal Administration and Waste Management, Representatives of Sangkats)

- Improvement of collection and transport system
- Improvement of curbside collection system
- Planning of collection tours, frequency
- Analysis of financial needs
- Adaption of regulations
- Re-financing
- Adaption of fee system

## SWG 3 - Promotion and awareness raising:

(Deputy governor, Office of Municipal Administration and Waste Management, Sangkat representatives, Department of Environment, Representatives of Committee of Children's and Women's Affairs, others)

- Problem identification
- Suggestions for improvement
- Awareness raising for health, urban hygiene, environment
- Contact to citizens and communication with citizens
- Education in schools, pagodas, universities
- Enhance willingness to pay

## SWG 4 - Waste separation, recycling, dumpsite management

(Office of Municipal Administration and Waste Management, Sangkat representatives, Leap Lim, Sangkat council members, others)

- Special requirements for businesses and public institutions, big consumers
- Implementation of separation system
- Curbside collection and decentralised bring system in remote areas
- Inclusion of informal recycling sector (wastepickers)
- Minimum standards for management of dumpsite

## 2. Mid-term Workshop

In order to monitor the results of the sub working groups a mid-term workshop was organized. The local institutional framework, the socio-economic conditions as well as technical requirements of the waste management system in Battambang were already discussed intensively by the stakeholders.



### The main purposes of the mid-term workshop were:

- The discussion of the implementation of the Deika
- The evaluation of realistic possibilities to introduce a system for waste separation and a better landfill management
- The discussion of the achieved results (the draft version of the Deika)
- The definition of further steps for fine-tuning and finalization of the Deika until end of March 2017

## 3. Revision and finalization of the Deika

After discussing open questions, legal terms and additional ideas at the midterm workshop, the work of the SWG 1 continued. The focus laid on the revision and finalization of the Deika text in order to release the Deika into the enacting process.

The board of the municipal governor, which consists of key staff of the different municipal departments, and the Office of City Beautification and Waste Management has been closely involved in this process.

# 4. Main results of the Deika for the institutional level – Responsibilities of the TWG

One of the main results formulated in the Deika, is the formation of a TWG, whose main responsibility would be the continuous development of the SWM system for BTB in the next decade and beyond:

- Determine the waste separation system at the source in the economic and social strategy, especially organic waste and plastic waste.
- Inform people who live in the target area about the importance of waste separation
- Promote the benefit of waste separation to people to encourage them to participate with high responsibility
- Coordinate and give advice to people about how to separate their waste
- Inform waste collectors and people who live near a landfill about the impact of burning at the landfill
- Create a pilot project and determine the appropriate solution for extinguishing a fire at the landfill and improve the landfill
- Promote the benefit of emission, keeping, separation, collection and waste treatment to people in heritage site to encourage them to participate with high responsibility
- Enforce the activities of waste separation at the source in heritage site.
- Coordinate and provide technical advice on law enforcement strategies in waste management to the people in heritage site
- Collect and record data about waste which is generated in Battambang City for monitoring and reporting on Short-Life Climate Pollution (SLCP) reduction
- Accounting on Short-Life Climate Pollution (SLCP) emission according to the amount of waste that had been recorded
- Analyse and evaluate on Short-Life Climate Pollution (SLCP) emission reduction



- Save the calculated data to compare them before and after the project
- Report on the results from each stage

### 2.3 Submit Deika for Review and Consultation

In order to become and effective law for BTB, the Deika had to be submitted to the legal bodies on municipal and provincial level. The process of submission, review, consultation, and final approval is specified in the national law of Cambodia. Please refer to sub-decree No. 286 for further legal details.

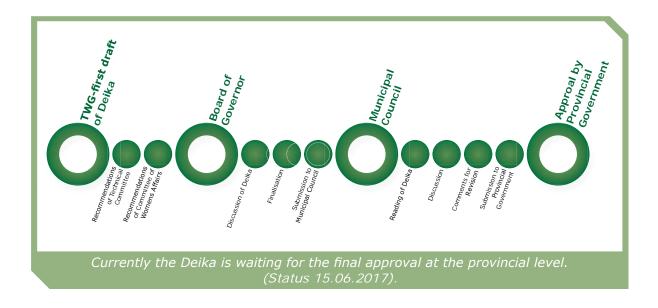
In Battambang the process of submission, reviews, consultations and final approval practically followed the below described steps:

After revising and editing the drafted Deika, the TWG submitted the drafted Deika to the Technical Facilitation Committee and the Committee for Women's and Children's Affairs for consultation. This step was required before submission of the Deika to the Board of Governors (BoG).

Then the BoG prepared a further checking and consultation meeting on the drafted Deika. The WG adopted the Deika according to the recommendations of the BoG and both committees before submitting the Deika to the Municipal Council for revision and approval.

After reception of the drafted Deika, the Municipal Council President prepared a final revision and approval meeting, which was the last step before the BoG had the approval to initiate with the further steps on the provincial level. In this case the revised and approved Deika was submitted to the Provincial Administration to get advice and check the legality of the Deika.

When receiving recommendations from the Provincial Administration, the BoG needs to revise the first approved version of the Deika and then re-submit it to the Municipal Council again for the last approval step, before the Deika can eventually become effective law in BTB.







Tip: Each project has its own distinguishing characteristics and has to be in line with the project environment. We recommend reflecting different scenarios in a focal group, including the main drivers, the possible project steps. Each step contains its own challenges, risks, problems, stakeholder settings and objectives. The better you prepare each step, the smoother it will be to pass through successfully. In short, success has to be organized!



The picture shows participants of the dissemination workshop on the Deika Development (June 30, 2017). The dissemination workshop focused on the Deika development for solid waste management on commune level and functioned as a platform to inform about the recent drafting process in the Municipality of Battambang and to share experiences among other Communes, Districts and Sangkats.



### 3 OUTLOOK - NEXT STEPS

According to sub-decree 113, the Municipality is by law responsible for SWM. Beside the need for a strong implementation and capacity building, this responsibility comes with a significant freedom to create its own most appropriate system for SWM.



The municipality is entitled to organise SWM

- a. completely self-dependent or
- b. in partnership with the private sector public private partnerships (PPP) or
- c. fully subcontract SWM to the private sector, including the possibility to international tendering. All possibilities should be evaluated.

The following steps are recommendations for the future development of SWM in BTB. They are all directly derived from the Deika. This means, the implementation of these steps will be possible without legal problems, as they are legally supported by the Deika.

The steps describe a timeframe from now on until 2030, depending on the available resources (staff and budget) and capacities of the administrative bodies.

### **Gain Control over SWM**

- Fee collection in hand of Municipality
- Creation of own budget
- Strongly reinforce the municipal capacity
- Short-term contract with service provider (PPP) or International tendering
- Monitoring mechanisms
- Complete data collection and analysis

## Strong implementation

- Sweet: Awareness raising and education
- Sweet: Incentives for best practice activities
- Sour: Law enfocrcement
- Sour: Punishment of violations against the Deika

## Awareness Rasing and Public Management

- Communication strategy
- AIDA and KISS
- Green CityAmbassadors
- Plastic-free public sector
- Clean city awards
- Cooperation with NGOs
- Cambodia Cleanup Website (available upon 24.08.2017)

### 3.1 Gain full control over SWM in BTB

To effectively and efficiently work on the improvements related to solid waste management, it is important to (re-)gain full control over solid waste management.





### That means that **the Municipality needs:**

- qualified data,
- control mechanisms to monitor the service provider,
- a strategy what to do next,
- clear communication tools and
- clear responsibilities.

In other words, use all the tools and legal possibilities to implement the Deika step-by-step, even if most of the legal aspects will require new administrative processes and new clear responsibilities.

This also applies for the collection of fees. Only when the municipality controls the revenues, it can control, distribute and sanction according to the steps described in the sub-decree 113 and the Deika.

### Recommendations

## Fee Collection through Municipality and Creation of Municipal Budget

The transparent collection of fees for solid waste management is the most critical point. A solid budget is absolutely vital to innovate and create a comprehensive system.

At the moment, the money is collected by Cintri and it is not known how much money is available to improve the system. Detailed information about how Cintri uses the money for innovations, investments or improvements is not available.

If the Municipality of Battambang intends to set up a proper waste management system, then the fee collection must be in the hand of the Municipality. The future development of SWM is only possible with full knowledge of all financial data.

This requires extensive data collection and analysis in BTB. After the analysis of financial data and realistic costs for the current system, further negotiations, for instance with the electricity provider, water provider, or others, must be led by the Municipality and possibilities for a new fee collection system need to be discussed.

**All** the costs for the collection and disposal must be analysed. A full, very detailed financial report of the service provider is necessary.



## Ideas for the practical implementation in the near future:

Development of a smartphone application for the collection of fees. The app should be suitable for different forms of the fee collection such as household-to-household, real-time online payment, banc-tranfer and others in order to suit to different conditions of the population.

The app can be used to control the fee collection. It can be connected in real-time to a central data-bank for the management of the SWM system. For instance, all users can be displayed on a map, as well as their status of payment.

Equally complaints, violations, penalties and many other topics can be managed with such an app.

A real-time display on a map can allow immediate access to important data. Parts of the data can be made accessible to the public, which would be an excellent tool to show transparency.

### Recommendation:

The data basis for such an app must be extensive and solid. It is recommended to set up such an app and the required data-bank on the basis of as modern geographic information system (GIS). A GIS is a powerful management tool for all infrastructure systems and can profoundly improve the local administration.

# 2. New Short-term Contracts with Public Service Provider - International Tendering - Public Private Partnership

According to the Sub-decree 113 a renegotiation of all contracts with service providers are required. Only transitional contracts should be made with max. 3 years runtime. Fees for the service must be based on realistic calculations.

In order to do such calculations, the data must be gained and analysed throughout such a 3-year period. In the meantime, the old fee system can be followed and improved until a new fee setting is developed based on realistic values.

### The data collection must include:

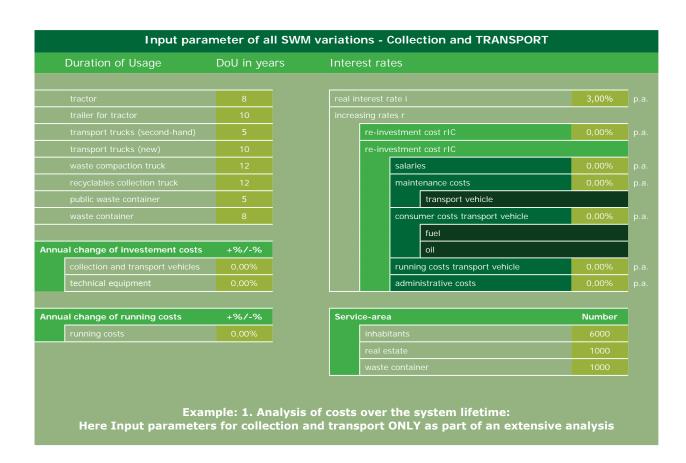
- collection and analysis of demographic data, such as population development, population density, age and gender, economic situation, employment rates, etc
- collection and analysis of technical data, such as coverage rates (area), connection rates and collection frequency, collection points, actual service rate, fee collection rate
- collection and analysis of technical equipment (number of trucks, workshop,





- buildings, material, waste bins and collection points, tools etc) including needs for material and consumption of gasoline and other consumer goods
- collection and analysis of data about the available staff: (drivers, skilled and unskilled workers, technicians, administration, management)
- collection and analysis of financial data, including all income (e.g. fees, penalties, grants and loans) and all expenses (salaries, running costs, fixed costs, such as capital costs, interest, etc)

After the data collection and analysis different variations of the system can be examined and the costs for the future development of the SWM system can be calculated. Such an analysis is extensive and requires qualified staff and possibly the support from experienced experts. Please refer to the examples given in the following screenshots.





	:		Unit	Number/		Running	evaluated timeframe	40 years
9	POSITION	кетагк	Price	amount	Investment	costs	investment costs (riel)	ND
100	Planning and education							
101	planning, evaluation, studies etc.	10% of investment costs						
102	costs Capacity Development	for user						
200	Waste bins private households							
201	waste bins - preparation of public area							
202	foundations (if applicable)							
203	maintenance cost	10% of investment cost CGr. 201						
300	Collection points							
301	container (mixed)	100 Liter						
302	container (different waste stream)	60 Liter						
303	container (reserve)	60 Liter, 15% of complete amount						
400	Collection and Transport							
410	Costs for transport vehicles							
411	KIA - Bongo small truck, second-hand							
412	annual taxes	CGr. 411						
413	compaction truck, 30m³, new	incl. delivery costs						
414	VAT (10%) + Import (5%)	15% of investment cost CGr. 313						
415	comsumer tax (if applicable)	uner 1500 cm³						
416	other tax (if applicable)	CGr. 413						
420	Maintenance costs							
421	annual maintenance costs vehicles, new	10% of investment costs CGr. 413						
422	annual maintenance costs vehicles, second-hand	15% of investment costs CGr. 411						
430	staff cost of transport							
431	annual salary of driver							
432	annual salary of service worker	incl. additional labour (due to vacation, illness)	iess)					
433	voluntary incidential labour costs driver	4 monthly salary CGr. 431						
434	voluntary incidential labour costs service worker	4 monthly salary CGr. 432						
440	Running costs for vehicles							
441	fuel (per liter)	consumption 13,0 Liter/100 km						
442	engine oil (per liter)	2 Liter / 1000 km						
200	Administrative costs	20% of vehicle costs, running costs and salary	ılary					
009	Costs Capacity Development	for user, service company, municipality						
	SUM							
	Annual values (cost persent values, accumulated) for collection and transport	d transport						

Example: 2. Screenshot of a spreadsheet suitable for a complete financial analysis of SWM (dynamic cost comparison) of one possible variation:

"Curbside collection with compactor truck and transport to dumpsite"



## Important note:



Such an analysis is needed to be able to make decisions regarding the further development of the SWM system. Decisions should always be made on the basis of an evaluation of financial, environmental and socio-economic influences.

It is therefore very important for Cambodia, that the local administration will be capable to undertake complex analysis in order to manage any sustainable progress in the field of infrastructure development. Without such capacity within the administration and without the (urgently needed) improvement of public infrastructure systems, the further development of contemporary solid waste management in Cambodia will be very difficult.

The evaluation will be an important part of contractual negotiation between the municipality and potential service providers, but equally an important source of information for any political decision-making.

### Contract negotiations with potential service providers

All related stakeholders, especially commune councillors, should be informed about contract details. They should be equally about the further necessities for the adaption of the current Deika and related laws as well as detailed information about the current functioning of the SWM system.

Key issues regarding the contract:

- Transitional period of 3 years: In these 3 years, the service provider must clearly prove, that he is capable to manage the system.
- The service provider must provide an investment plan for the future. A vision for innovation! This includes:
  - Detailed business plan
  - Detailed financial plan, including all investments, running costs, depreciation, other capital costs such as. Loans, grants, interest and others
  - Activities needed to fulfil the needs of the Municipality of BTB
  - Long-term financial and technical planning steps



Only if the service provider is capable to deliver the abovedescribed steps, the Municipality should consider an extension of the contract!

Otherwise an international tendering for SWM in BTB should be prepared.



## 3. Proper Preparation and Facilitation of Meetings

During the project time, the stakeholders met regularly to discuss the content of the Deika. It is important to keep this spirit alive and use the existing working groups to work on the implementation. The meetings should follow a clear schedule, agenda and guide. Each member should be aware of his/her duties and rights.

In this sense, tasks, duties and rights must be clearly communicated. They are outlined in the Deika Chapter 2. The guide should include resolution mechanisms as well as accountability obligations.

The agendas should be distributed at least two weeks before the meetings:

- Roles and duties must be clearly defined and communicated (organigram, one pager)
- Set up communication guidelines in accordance with key principles like participation, transparency, effectiveness and efficiency (guideline)
- Determine meetings for the first year
- Determine report frequency for the first year

## 4. Set-up Monitoring Mechanisms

Violations of the Deika must be documented properly and transparently. In order to do so, it is necessary to set up documentation guidelines. Further on a data bank for the recording of violations against the Deika and related problems with its implementation should be established.

Reporting obligations (e.g. by the service providers or other stakeholders) should be enforced as well. Each stakeholder must be obliged to inform other stakeholders about activities, challenges and further steps with regard to the implementation of the Deika and the improvement of the SWM system in BTB.

## 5. Collection of data about Solid Waste Management

The service provider should be obliged to provide data to the Municipality and Working Groups about the daily collected waste amount, the composition of the waste, coverage of service areas, routing of collection and collection times.

This data is needed to compare figures and interpret trends concerning the development and functioning of the system. Universities and experts can be included in the data collection, interpretation and the management of the process.

## 3.2 Strong implementation - Sweet and Sour

#### Sweet

Start with an intensive awareness raising campaign, which shows the benefits of a good working SWM. The intention of the Deika must be made clear to the citizens, but equally to all other stakeholders as well. If people follow the Deika they will get the benefit of a significantly improved public health, a clean environment and possibly direct personal incentives as described in the Deika.



Use green ambassadors, motivated young people, and interfaces to spread the content of the Deika. Green ambassadors can explain the negative consequences of illegal open dumping and illegal burning of waste to people / companies / organisations. Communication with anyone, who is not following the Deika should be established in the first place.

#### Sour

Enforce the law, without any exception. If people understand that the Deika is not just some paper, but that the enforcement will hurt (penalties, etc.). Only then the citizens will change their behaviour.



### For example:

- If a market does not provide separated waste, the market has to be punished (repeatedly if necessary).
- If the dumpsite operator does not stop the burning of the dumpsite, it has to be punished (repeatedly if necessary).

## 3.3 Awareness Campaigns

Local authorities and working group members are obliged to raise the awareness of the citizens. The intention hereby is to inform the citizens about the three R (reduce, reuse, recycle) approach and the implementation of the new Deika.

### Recommendations

Develop a communication plan according to key marketing principles:

**AIDA** (Attention > Interest > Desire > Action) and KISS (keep it short and simple).

Beforehand it is recommended to analyse the specific situations in Commune / Sangkats, schools, markets, households, the related problems and experiences. All stakeholders should be actively involved.

### **Possible Strategies:**

- Recruit *Green City Ambassadors* to raise awareness in schools, universities, pagodas, Sangkats, markets etc):
  - 1. Define tasks like awareness raising, documentation, assistance, material, schedule, target group and trainings
  - 2. Set up a recruitment strategy
  - 3. Set up trainings for the Green City Ambassadors (one day workshop)
- Plastic-free restaurants etc promoted by a Best Practice Award (Green City



- Ambassadors can promote this endeavours)
- Plastic-free public sector (Green City Ambassadors can promote this endeavours)
- School (Green City Ambassadors can promote this endeavours): e.g. Zero Emission Competition
- Sangkat Competition: Clean Sangkat Award
- Best Practice Sharing
- Provide more bins on public places and inform the citizens about how to use them (posters)
- Work closely with local NGOs, such as Plastic-Free Cambodia and other active organisations in SWM



## 4 CONCLUSION

The Deika is a first step towards common drafting of regulations on the commune level as well as a first step towards regulatory measures to tackle the issue of solid waste. Based on the project experience, it can be concluded that there is a high level of interest among the stakeholders to cooperate in a more participatory manner.

The Deika is an important guideline for the Municipality of Battambang and includes requirement for short-term measures and equally provides the basis for the long-term development of the SWM sector in the city.

It describes and defines the roles of all involved stakeholders. At the same time it offers a legal framework for all citizens, including their legal rights and obligations.

In order to achieve a realistic implementation of the Deika, permanent and regular communication mechanisms have to be established and administrative reforms need to be conducted. The Deika has been drafted in a way, which will allow the City of Battambang to gradually evolve to a modern SWM within its own capacity and without the need for external support.

It is therefore recommended to go small but well controlled steps, instead of aiming for great leaps, which leave stakeholders behind. All stakeholders can make valuable contributions and contribute to the common vision, provided that they are included, informed and heard.



## **5 REFERENCES AND FURTHER INFORMATION**

### Sources of Local Data on SWM

Prior to the drafting process of the Deika, an assessment of the current situation of SWM in Battambang has been carried out by COMPED on behalf of KAS Cambodia. The local NGPO COMPED more than 15 years of experience on the SWM sector in Cambodia and has been involved in many research activities in this field: www.comped-cam.org.

The report title is: "Waste Management Situation in the City of Battambang" to Support in the Development of a Waste Statute for the City of Battambang.

The report has been submitted to KAS in January 2017 and is available upon request.

## **Bibliography and Legal Documents**

Inter-ministry circular on implementation sub-decree on urban waste management, No 1070 SorChoNor BS, dated on 12 November 2015 of Ministry of Interior and Ministry of Environment;

Inter-Ministerial Proclamation No. 1411 SorChorNor B.S. dated on 16 December 2016 on Functional Implementation of Garbage and Urban Solid Waste Management

Sub-decree No. 113 RNKr.BK dated on 27 August 2015 On Urban Waste Management;

Sub-decree No. 286 RNKr.BK dated on 18 November 2014 On Procedures for the Preparation, the Modification and Cancellation of Deika Capital Council, Provincial Council, Municipal Council and District Councils;

Technical Guideline on Garbage and Urban Solid Waste Management of Ministry of Environment 2016



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