



**SOLID WASTE MANAGEMENT IN CROSS-BORDER
RURAL AND COASTAL AREAS OF SOUTH EASTERN
EUROPEAN REGION**

Process Paper No. 2

Development and dissemination of models for integrated solid waste management in the pilot regions of Adriatic Coast, Sharra Mountain and river catchment of Tara - Drina - Sava

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1. BACKGROUND

The sub-project “Solid Waste Management in cross-border rural and coastal areas of South Eastern European region (SWMRCA)” was initiated with the aim to improve the conceptual and organisational framework conditions for integrated solid waste management in the rural and coastal areas. Its specific goals are to assess the cross-border adverse environmental and economic impacts and to develop models for integrated solid waste management that are environmentally effective and economically affordable.

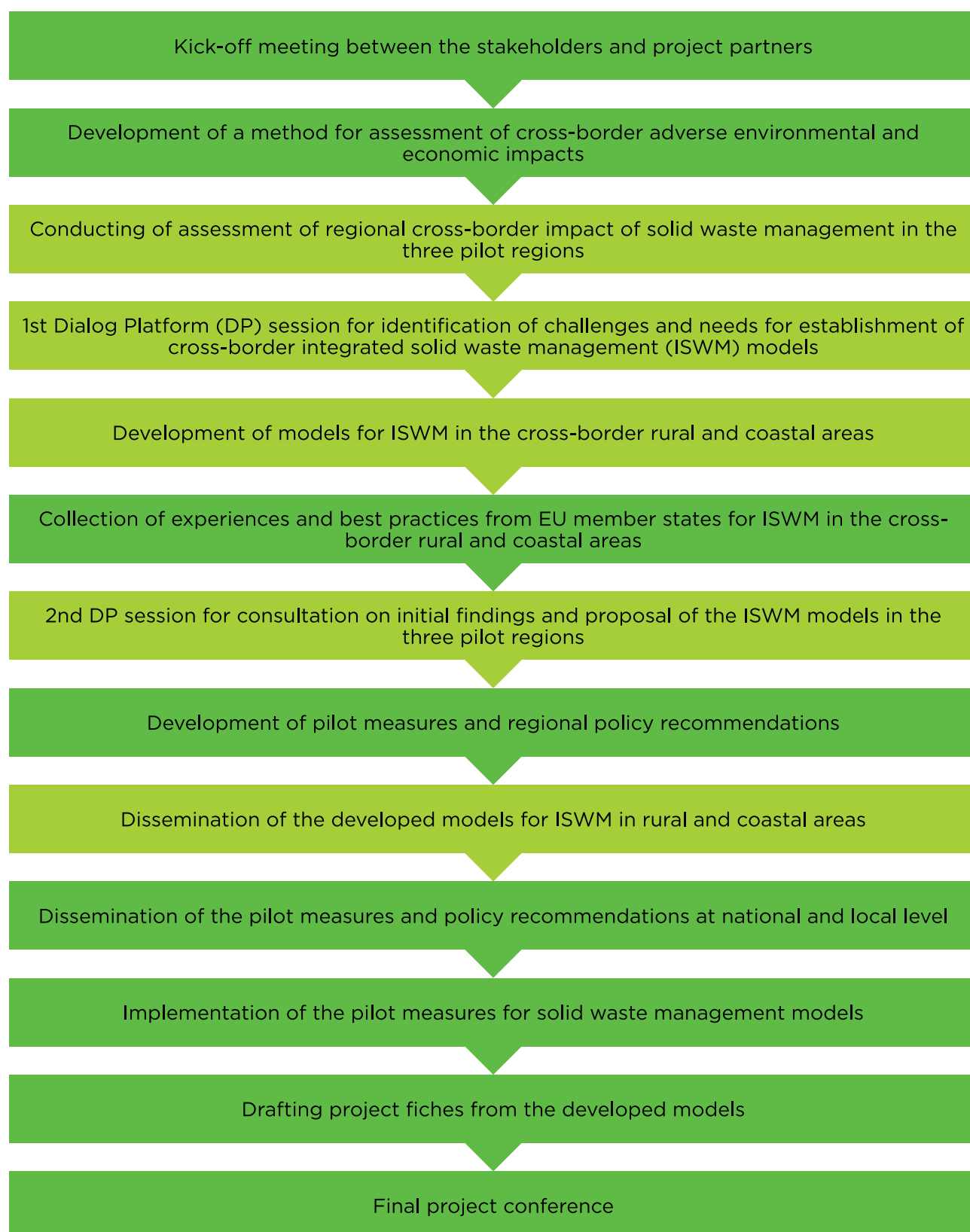
The SWMRCA sub-project is supported by the German Federal Ministry for Economic Cooperation and Development (BMZ) and the Government of Switzerland through the GIZ Open Regional Fund for South East Europe - Modernisation of Municipal Services (ORF MMS). The implementation partners are the Regional Rural Development Standing Working Group (SWG) and the Network of Associations of Local Authorities of South-East Europe (NALAS).

The sub-project covers three cross-border pilot regions: the Adriatic Sea coastal region (Albania, Montenegro, Bosnia and Herzegovina, and Croatia); the mountainous region of Sharra Mountain (Albania, Kosovo and Macedonia); and the region of the river catchment Tara - Drina - Sava which consists of two sub-regions Tara - Drina (Montenegro, Bosnia and Herzegovina, and Serbia) and Drina - Sava (Bosnia and Herzegovina, Serbia, and Croatia). The NALAS region covers the Adriatic Sea coastal area while the Sharra and Tara-Drina-Sava represent SWG regions.

The project partner network includes Local Government Associations (LGAs) - members of NALAS from 4 countries: Albanian Association of Municipalities; Union of Municipalities of Montenegro; Association of Municipalities and Cities of the Federation of Bosnia and Herzegovina, and Association of Municipalities of the Republic of Croatia. Other stakeholders are: Ministries of Agriculture and Rural Development; Ministries of Environment; Area Based Development Approach stakeholder groups within the SWG structure in the targeted areas (consisted of municipalities, civil society organisations (CSOs) and the private sector)); 41 Municipalities in pilot areas (32 in SWG pilot areas (6 in Sharra region; 26 in Tara - Drina - Sava) and 9 in NALAS coastal area)); other CSOs, private sector, donor agencies, experts, academia, media and general population in the pilot areas.

The major sub-project activities and process flow leading to the achievement of the above mentioned objectives are presented in Figure 1.

Figure 1: Major activities and process flow of SWMRCA sub-project



The process of development and dissemination of the models for integrated solid waste management (ISWM) in the three pilot regions consisted of several activities which are highlighted in light green colour in the above Figure. The main characteristics of these activities are presented further in this Paper.

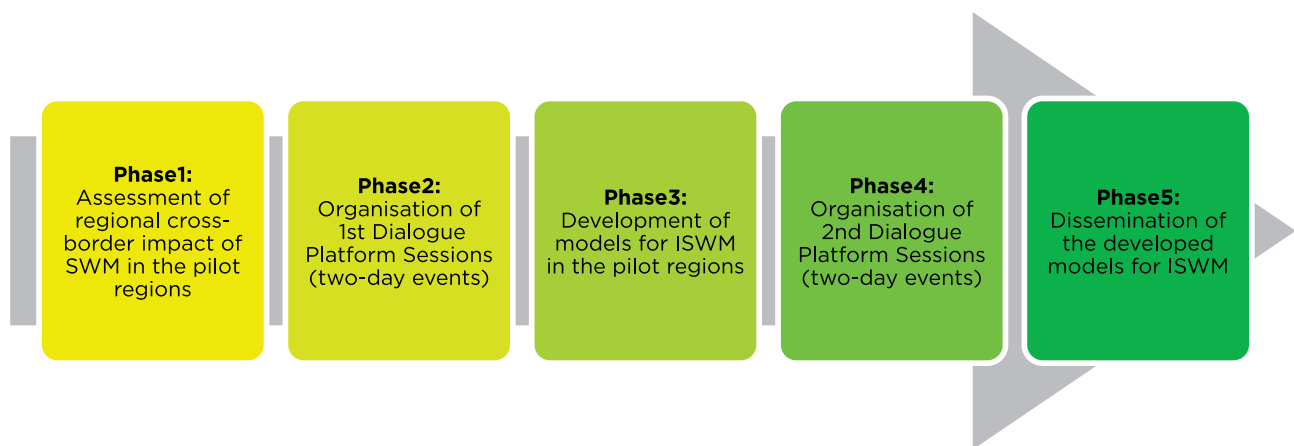
2. METHODOLOGY

2.1 PROCESS OF DEVELOPING AND DISSEMINATING THE MODELS FOR INTEGRATED SOLID WASTE MANAGEMENT FOR THE THREE PILOT REGIONS

The ultimate goal of the models for integrated solid waste management (ISWM) in the pilot rural and coastal regions is to effectively address the transboundary adverse environmental and economic impacts arising from the current mismanagement of the municipal solid waste. A necessary precondition in reaching this goal is to develop ISWM models that are tailored to the specifics of the pilot regions. Therefore, the ISWM model for each region was based on the assessment of the cross border adverse impacts in that particular region.

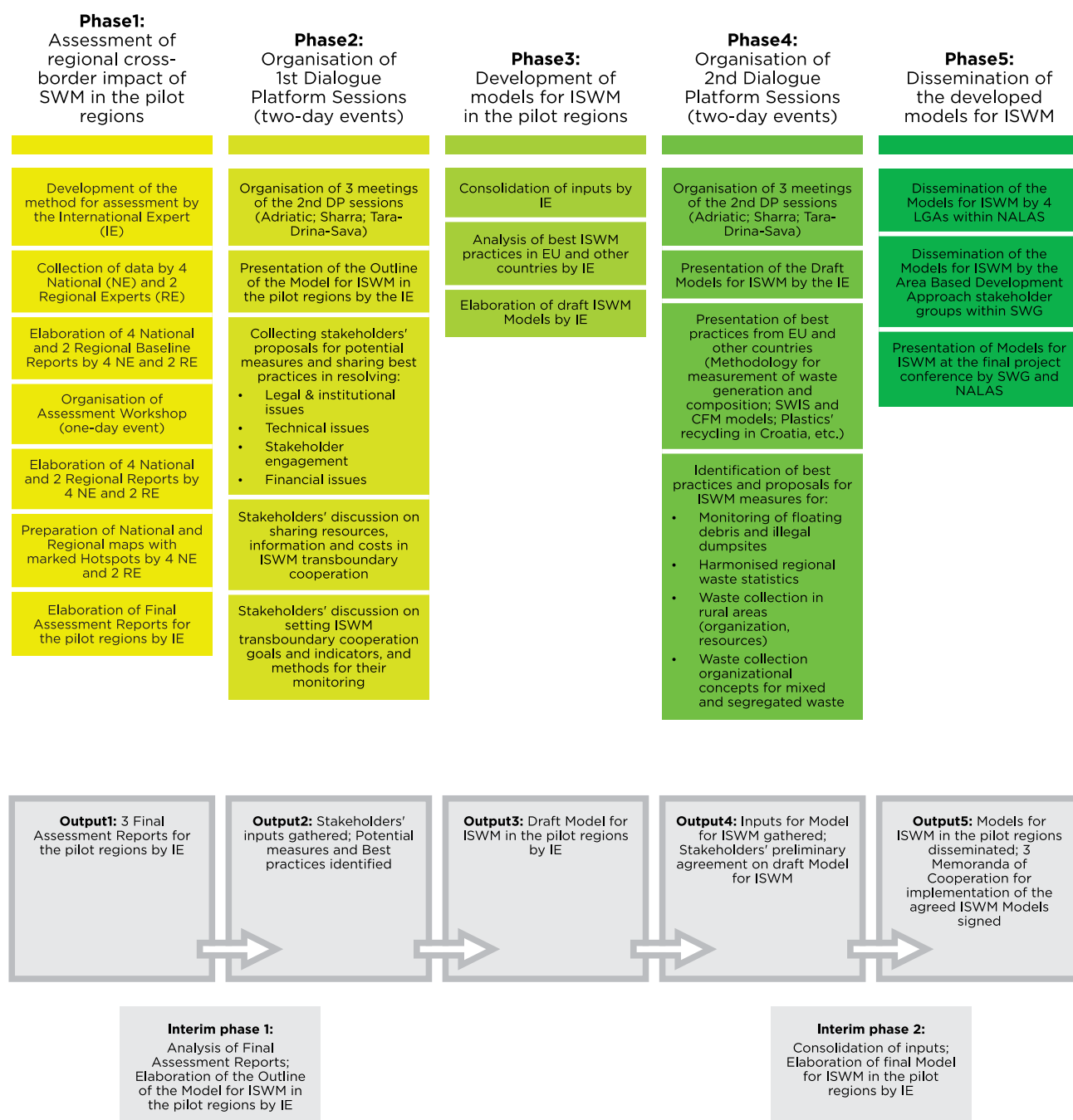
The process for development and dissemination of the models for ISWM consisted of five main phases which are presented in Figure 2.

Figure 2: Process of developing and disseminating pilot measures and policy recommendations



A more detailed snapshot of the key phases is displayed in Figure 3, and it is followed by a brief presentation of their aims and contents.

Figure 3: Development and dissemination of models for integrated solid waste management in the pilot regions of Adriatic Coast, Sharra Mountain and river catchment of Tara-Drina-Sava



2.2 KEY PHASES OF THE PROCESS FOR DEVELOPING AND DISSEMINATING ISWM MODELS FOR THE PILOT REGIONS

Main feature of the process for development of Models for ISWM was its strong emphasis on a multi-level and multi-stakeholder participatory approach, in particular within the 1st and the 2nd Dialogue Platform. This approach enabled active involvement of the stakeholders - as the most competent experts on the actual situation, needs and constraints - and intensive gathering of their experiences, best practices and proposals for solutions as core inputs in the design of the Models. In that way, the achievement of several important goals was facilitated. Some of these goals include clear identification of the root causes of the pollution problems, and designing of applicable solutions that both take into account the actual SWM capabilities of the pilot regions and are able to address the causes and the adverse effects of the waste mismanagement in an effective and efficient way.

2.2.1 Phase 1: Assessment of regional cross-border impacts of SWM in the pilot regions

The initial phase of the assessment process focused on developing a method for identification and assessment of the adverse environmental and economic impacts and it was led by an International Expert (IE). The main method components included determination of the scope and elaboration of the questionnaires for collecting data from the pilot municipalities and the Public Utility Companies (PUCs).

The data collection process consisted of desk research of a wide range of documents including Local Environmental Action Plans (LEAPs) and strategies, and a survey of the pilot municipalities and the PUCs. The collection process was conducted in parallel by the 4 NE and 2 RE and included among others activities such as e-mail correspondence, exchange with the stakeholders at the assessment workshops, project events, and visits to the pilot municipalities.

Further research activities were conducted to capture other relevant information. These included among others research of the magnitude of the mismanaged waste and its ultimate destinations (e.g. mapping of the illegal dumpsites, and analysis of the sea currents and river flows), and the extent of the adverse impacts (e.g. analysis of the negative feedback from tourist as an indicator of the lost tourist visits and the resulting economic losses).

The data gathered were processed and integrated in the Baseline Report which was produced in six separate versions: four national reports which referred to the four countries within NALAS Adriatic region, and two regional reports which targeted the SWG Sharra and Tara-Drina-Sava regions.

4 National Assessment Workshops in the NALAS Adriatic coast region and 3 Regional Assessment Workshops in the SWG regions (Sharra, Tara-Drina and Drina-Sava) were organised with the aim to validate the data gathered and to collect the outstanding data. For that purpose, the corresponding Baseline Report was presented in each pilot region and discussed in a multi-stakeholder environment. The presented data were reviewed and complementing inputs were solicited. This exchange has provided essential contributions to the Baseline Reports as preliminary input documents to the 3 Impact Assessment Reports.

The 7 assessment workshops were attended by a total of 199 participants (thereof approximately 60% from public institutions / organisations) representing the key parties involved in solid waste

management and other stakeholders such as CSOs, companies and media concerned with the current SWM practices.

Further validation process was conducted at the 1st Dialogue Platform sessions where the Draft Assessment Reports, which incorporated the outcomes of the Baseline Reports and the further research conducted after the Assessment Workshops, were presented. This was followed by plenary discussions of the stakeholders who have commented / validated the presented findings and have contributed further inputs to the content of the reports.

Based on the outcomes of the 1st Dialogue Platform sessions, upgraded versions of the Assessment Reports for the three pilot regions were elaborated by the International Expert. These reports were further reviewed by NALAS, SWG, and the National and Regional Experts. The feedback was collected and incorporated in the final versions of the Assessment Reports which were presented at the 2nd Dialogue Platform sessions.

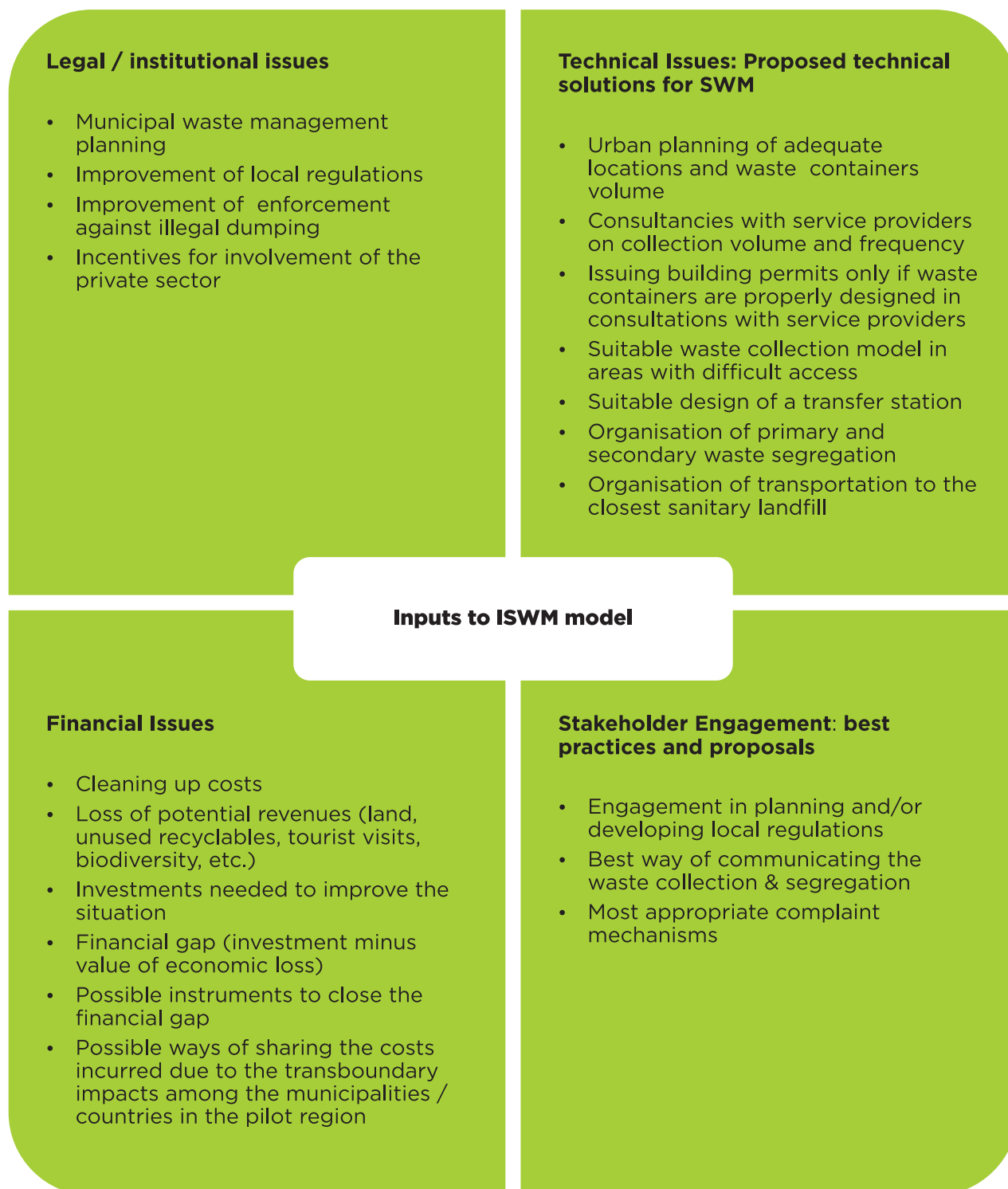
Within the Interim phase 1 which followed the Assessment of regional cross-border impacts of SWM in the pilot regions, the Final Assessment Reports were analysed and the Outline of the Model for ISWM in the pilot regions was elaborated by the International Expert.

2.2.2 Phase 2: Organisation of 1st Dialogue Platform (DP) Sessions (two-day events)

A two-day session of the 1st Dialogue Platform was held in each pilot region: the NALAS Adriatic Coast region, the SWG Sharra region, and the SWG Tara-Drina-Sava region. Each of these platforms brought together several countries and municipalities - involved in a joint cycle of generating and/or receiving adverse environmental impacts - with the aim to share experiences, search for common solutions and discuss the ways for future cooperation in installing proper ISWM. In total, 108 participants (62 persons representing public institutions / organisations, thereof 7 persons delegated from national ministries), took part in the sessions.

The second day of the 1st Dialogue Platform sessions was dedicated to the development of the Model for ISWM in the pilot regions which simultaneously yielded initial proposals for potential measures and identification of best practices. The presentation of the Outline of the Model was followed by the discussions of four focus groups on possible solutions for improving the legal / institutional, technical, and stakeholder engagement aspects of the existing SWM practices, and on estimating the financial implications and options. The key topics in each of these areas are displayed in Figure 4.

Figure 4: Key ISWM topics discussed in focus groups at the 1st Dialogue Platform sessions



The concluding part of the sessions brought a presentation on the transboundary movement of waste and provided for two more focus group discussions. The topics included methods towards preventing the occurrence of floating waste; stakeholders' discussion on sharing resources, information and costs in ISWM transboundary cooperation; and discussions on setting ISWM transboundary cooperation goals for the Memorandum of Cooperation to be signed by the involved pilot municipalities and ways of measuring the achievement of these targets.

2.2.3 Phase 3: Development of models for ISWM in the pilot regions

Within the Phase 3, the outcomes from the discussions were analysed and consolidated by the International Expert. Along with the findings from the analysis of best ISWM practices in EU and other countries, they were incorporated into the draft ISWM Models for the pilot regions.

2.2.4 Phase 4: Organisation of 2nd Dialogue Platform Sessions (two-day events)

Each pilot region hosted a two-day session of the 2nd Dialogue Platform as a further step in the processes of eliciting and collecting stakeholders' inputs for the development of both the ISWM Model and the ISWM potential measures and best practices. The 2nd Dialogue Platform sessions were attended by 103 participants, representing local and national governments (thereof 3 representatives of national ministries), public and private waste management operators, CSOs, companies and media.

The introductory part delivered a presentation on the Draft Models for ISWM by the International Expert. Further presentations focused on the best practices from EU and other countries to acquaint the participants with proven approaches that might be deployed in a genuine or tailored form in the pilot regions as well. These practices included among others the Methodology for measurement of waste generation and composition, which was developed in 2008 with GTZ support (GIZ since January 2011) in order to define the strategy of secondary raw materials in the sustainable development of the Republic of Serbia; Municipal Solid Waste Information System (SWIS) and Cost and Finance Model (CFM) which were developed with support of the GIZ ORF MMS Project "Solid Waste Data Collection in South-East Europe"; and Plastics' recycling in Croatia.

Focus groups were organized to define the best practices and generate proposals for pilot measures in the areas of critical importance: monitoring of marine litter / floating debris and illegal dumpsites; harmonised regional waste statistics; waste collection in rural areas (organization, resources); waste collection organizational concepts for mixed and segregated waste; and plastics' recycling. For instance, for the monitoring of illegal dumpsites the methodology for organizing, implementing and reporting the monitoring activities was discussed and specified. Similar approach was applied in the other areas of concern, taking into account the features of the analysed problems and the applicability of the proposed measures.

The Interim phase 2 brought consolidation of the newly collected participants' inputs and elaboration of final Model for ISWM in the pilot regions by the International Expert.

2.2.5 Phase 5: Dissemination of the Models for ISWM in the pilot regions

Both implementing partners were involved in disseminating the Models for ISWM in the pilot regions. Each of the four NALAS Local Government Associations from Albania, Montenegro, Bosnia and Herzegovina, and Croatia has organised 2 dedicated events in its domicile country to present the Models along with the other project results to the other municipalities. On the other hand, SWG has conducted dissemination activities through the Area Based Development Approach stakeholder groups in the targeted areas.

The final project conference that was jointly organised by SWG and NALAS in June 2016 actually marked the concluding dissemination event within the project life cycle. The conference gathered high officials of the central and the local governments of the seven participating countries, experts, representatives of the donor community, NGOs, media and other stakeholders. On this occasion, the

principal project results, experiences and messages were presented to the wider public.

At the same time, the conference gave impetus to further efforts for broad and intensive cross-border cooperation in implementing sound ISWM practices. Most important events in this sense included the identification of the follow-up measures and the official signing of the Memoranda for Cooperation between pilot municipalities as a sign of commitment for implementation of developed models. This was complemented by a presentation of three developed Project Fiches, one for each of the pilot regions, for follow-up projects that would focus on implementing the ISWM Models. The Project Fiches will be used to raise funding and to find partners and will thereby contribute further to ensuring the sustainability of the project results.

3. KEY MESSAGES

Key message 1: Multi-level and multi-stakeholder participatory approach

The development of the ISWM Models was remarkably characterized by the active involvement of the stakeholders from various levels and with distinct roles in all key segments of the process. In total, 211 participants took part in the 1st and 2nd Dialogue Platform sessions. The accuracy, the effectiveness and the applicability of the defined Models is largely due to stakeholders' genuine commitment in providing information, sharing experiences and best practices, and proposing realistic solutions in the area of solid waste management.

Key message 2: Joint development of models by promoting dialogue between impacting and impacted municipalities

The assessment of the cross-border adverse environmental and economic impacts has clearly shown that the pollution pathways form robust although not always easily visible bonds among the pilot municipalities from various regions and countries. Therefore, the search for sensible and sustainable solution must rely on common ground that will align both the impacting municipalities as sources of the waste/pollution and the impacted municipalities as its receivers. This principle was fully adhered to in the entire process of developing the ISWM models by providing a platform for and stimulating the dialogue between the impacting and the impacted municipalities.

Key message 3: Define a priority focus in order to devise a realistic ISWM solution

The extent and the variety of the current mismanagement practices require dealing with multiple and various types of deficiencies. However, in view of the limited resources and considering that the project activities encompass 3 pilot regions and involve 7 countries, a clear focus of the ISWM Models had to be defined in order to provide realistic solution. The pilot regions have pointed out the marine litter / floating waste as priority problems which particularly affect the pilot municipalities in the coastal area as well as those with rivers as pollution/waste pathways.

Key message 4: The development/revision of local waste management plans and regulation is a fundamental precondition for implementing ISWM operation

In most of the pilot municipalities, the local plans/regulation for managing solid waste operations are either outdated or non-existing. This practice has significantly hampered the implementation of effective SWM operations in particular in the pilot municipalities located in the coastal areas and those exposed to waste/pollution brought by the river flows. The setting of a regionally harmonised outline of the local plans and the definition/improvement of the local regulation will help to overcome these gaps and will enable integrated approach in dealing with sources and impacts of waste/pollution.

Key message 5: Potential for bigger involvement of private and civil society sector in the implementation of ISWM Models

The ultimate effects of the solid waste mismanagement are felt in many segments of the citizens' life and the business operations. The environmental concerns of the private and civil society sector have been clearly shown in their active participation in the key phases of developing the ISWM Models. Their contribution in defining the Models has simultaneously opened venues for their greater

involvement in the implementation of the related actions. More specifically, the role of the private sector is mainly seen in recycling operations while the civil society sector can play a vital role in awareness raising activities and in mobilising funds from EU and other sources of financing.

Key message 6: Potential for replication of the ISWM Models

The pilot regions share many common features in managing the municipal solid waste with other regions in South-East Europe (SEE). This opens broad perspectives for deploying the ISWM Models in the cross-border areas of other SEE regions and countries.

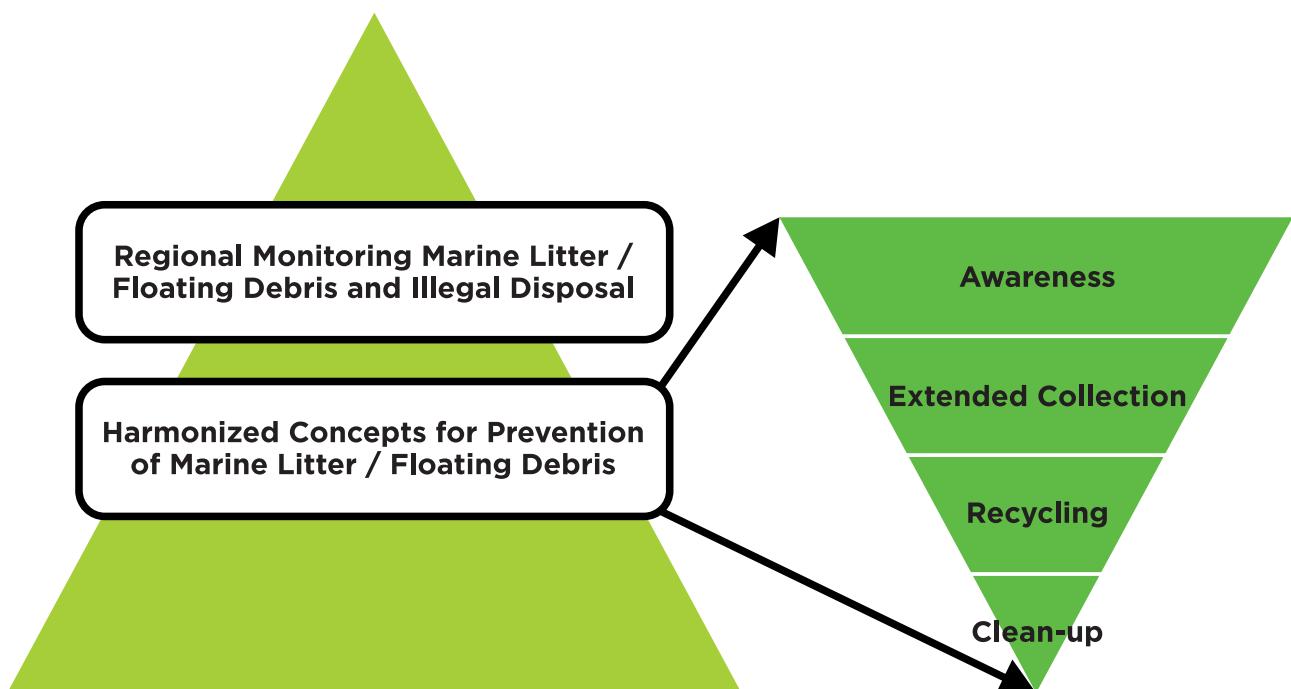
4. KEY FINDINGS

The Integrated Solid Waste Management Models propose concepts and tools to address the root problems of the floating debris / marine litter generation. They aim to improve the situation in three main areas:

- Regional monitoring system of marine litter and illegal disposal
- Mechanism for improved and shared waste management information / statistics
- Harmonised concepts for prevention of marine litter

The essence of the ISWM Models is presented in Figure 5:

Figure 5: Three focal areas of the ISWM Models



The monitoring plays a vital dual role in the functioning of the ISWM Models as it is the only source of data on both the origin of marine litter/floating debris and the effectiveness of the actions for mitigating the adverse impacts derived from solid waste mismanagement.

In view of the cross-border nature of the pollution/waste flows, the setting of a functional monitoring programme requires establishing of waste statistics' related (benchmark) indicators and designing of regionally harmonized methodologies for collecting and evaluating data on waste generation & composition and waste collection rate (service coverage).

The efforts for lessening the adverse impacts of the solid waste mismanagement can be fully effective only if the root causes of these impacts are addressed as well. Therefore, the Models emphasise the importance of harmonised preventive activities as one of the primary ISWM instruments in reducing/eliminating illegal dumping practices.

The concept for prevention rests on four basic pillars: increasing public awareness which aims to create environmentally sensitive citizens' behaviour that would support the ISWM actions in a long

run; extension of collection services to rural and remote settlements which are currently not covered in order to reduce/eliminate the sources of waste/pollution in these areas; recycling that would particularly focus on plastics as dominant waste ingredient in order to reduce the quantity of waste discharged into the environment; and clean-up activities that would primarily target the illegal dumpsites being previously used in areas not covered by the regular waste collection service.



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