



Waste Management V-NAMA in Indonesia

Development of vertically integrated Nationally Appropriate Mitigation Action (V-NAMA) in the municipal solid waste management sector in Indonesia

Waste management is a sector where local governments have key competencies and is one of five priority areas identified in Indonesia's National Action Plan for reducing Greenhouse Gas Emissions (RAN-GRK). Since 2012, GIZ has been supporting partners in Indonesia to develop "Vertically integrated Nationally Appropriate Mitigation Action" (V-NAMA) focussing on municipal solid waste management (MSWM). The V-NAMA involves municipal stakeholders and helps to establish links between all vertical levels of government, in particular between the national and the municipal level. This program aims to develop a bankable NAMA-proposal that meets MRV requirements, but the process of developing the V-NAMA has gone far beyond simple proposal preparation. It has helped to enable national and sub-national governments to work together more effectively, jointly developing appropriate strategies for investments, operation and management. At the same time, the process has helped to coordinate the various activities undertaken in the sector and to capture their combined impact, strengthening the monitoring of progress towards Indonesia's national climate mitigation target. It has also enabled stronger private sector engagement and leveraged additional public budget for the sector, and provides a blueprint for more ambitious mitigation approaches in other sectors.

Background

Waste Management and Climate Change

Despite post-consumer waste being a relatively small contributor to global greenhouse gas (GHG) emissions with a share of less than 5% worldwide, it is a growing source of emissions especially in emerging economies. Population growth and increased consumption in these economies goes hand-in-hand with increased demand for

Country	Indonesia, in five pilot municipalities
Sector	Municipal Solid Waste Management
Duration	May 2012 – April 2015
Framework	The Indonesian V-NAMA programme forms part of the BMUB-IKI-global project 'V-NAMAs – Vertically integrated NAMAs for the involvement of sub-national actors in national mitigation strategies'. It is funded by the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB).
Implementing agency	Deutsche Gesellschaft für internationale Zusammenarbeit (GIZ)
Partners	National: Ministry of National Development Planning (BAPPENAS), Ministry of Public Works and Housing, Ministry of Environment, Ministry of Home Affairs, Ministry of Energy and Mineral Resources Sub-national: Provincial governments and local governments at the pilot locations Jambi, Malang, Kendari, Pekalongan, Sidoarjo

products and increased production of municipal waste. Organic waste in anaerobic condition will produce methane (CH₄) which has a much higher global warming impact than CO₂ emissions.

On behalf of:

The waste sector provides an interesting focus for mitigation actions due to its large potential for emissions reduction along with other development benefits. However, as municipal solid waste management is rarely a profitable activity, less climate change-friendly and sometimes even hazardous or illegal practices are common.

Indonesia and Climate Change Mitigation

Indonesia is a large country with many land use conversion challenges, a growing population, increasing energy consumption and waste generation. Indonesia plays a significant role in the global climate change landscape and since 2007, when it hosted the 13th Conference of the Parties (COP) of the United Nations Framework Convention on Climate Change (UNFCCC) in Bali, the country has made considerable progress in addressing climate change issues. In 2011, the Indonesian President announced a national voluntary target to combat climate change: reducing national GHG emissions by 26% from the business-as-usual level by 2020 based on unilateral actions, and up to 41% with adequate international support. This commitment was incorporated in the Presidential Decree No 61/2011 and an accompanying National Action Plan on GHG Emission Reduction (RAN-GRK). This document underpins line ministries activities to directly and indirectly reduce GHG emissions and serves as a guideline for provincial governments in formulating regional action plans for reducing emissions (RAD-GRK). Five priority areas of RAN-GRK are Agriculture; Forestry and Peat land; Energy and Transportation; Industry; Waste management.

The waste sector's share of total Indonesian emissions (9-11%) is still much smaller compared to that of other sectors such as forestry and agriculture. However, the MSWM sector is a growing source of GHG emissions. This is largely due to a lack of proper infrastructure and comprehensive approaches to waste minimization. Less than 3% of final disposal sites are operated as sanitary landfills and only a small fraction of waste is prevented through 3R ("reduce-reuse-recycle"). This poor performance is directly reflected in higher GHG emissions.

The strategies described in RAN-GRK for the solid waste management sector in order to minimize uncontrolled emission growth and the severe impacts it can cause include: solid waste reduction through 3R, waste management process at the final disposal, improvement/construction/rehabilitation of the final disposal and waste to energy (WTE). Moreover, all provinces are expected to develop their own local action plan (RAD-GRK) appropriate to their situation and condition.

Description of Activities

To support the delivery of these ambitious targets, the government of Indonesia partnered with GIZ in the project 'V-NAMAs – Vertically integrated NAMAs for the involvement of sub national actors in national mitigation strategies', financed through the International Climate Initiative (IKI) of the German Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety (BMUB). The aim of the partnership is the development of a vertically-integrated municipal solid waste management NAMA, which helps to realise the GHG mitigation potential in the Indonesian MSWM-sector (Details about the NAMA proposal: see box below).

The V-NAMA development process is roughly divided into three phases: *preparation*, *development*, and *search for funding and pre-implementation*.

Preparation phase (May 2012 – May 2013)

The preparation phase started with the recruitment of staff and programme inception activities including the establishment of contacts with stakeholders, an initial stock-take of MSWM and national climate change policies and actions (e.g. regulation analysis, stakeholder analysis, internationally funded MSWM programmes). Stakeholder consultations began at the national level, identifying key stakeholders, and their priorities. This process included:

- An analysis of existing problems and barriers preventing more climate-friendly MSWM.
- Establishment of a Technical Committee including representatives from line ministries involved in the mitigation of GHG emissions in the MSWM sector: the Ministry of National Development Planning (BAPPENAS), Ministry of Environment, Ministry of Public Works and Housing and the Ministry of Home Affairs. Later the Ministry of Energy and Mineral Resources also joined as authority for WTE projects and the related feed-in tariff is located here.
- Selection of pilot project locations and partner municipalities was made by the Technical Committee. The selection was undertaken using a range of criteria to assess prospective pilot municipalities, including a) ongoing local efforts to improve MSWM with evidence of significant investments, capacity development or institutional innovations, e.g. notable waste management underpinned by 'Adipura' (clean city) award or significant private sector involvement. b) participation in an internationally funded SWM programme such

as the German Development Bank (KfW) 'Emissions reduction in cities' programme, GIZ PAKLIM, c) other considerations such as the role of SWM in the RAD-GRK and the variety of geographical areas covered, the size and type of project locations and the institutional arrangements represented. Based on these criteria, the five locations finally selected were:

- Jambi municipality in Jambi province;
- Kendari municipality in South East Sulawesi province;
- Malang municipality in East Java province;
- Pekalongan municipality and regency in Central Java province;
- Sidoarjo district in East Java province.

Four of these municipalities were at the same time participating in a programme implemented by KfW on 'Emissions Reduction in Cities', which has the provision of an interest reduced loan for the construction of sanitary landfills and accompanying measures as core elements (see below).

Various interaction programmes were initiated, starting with field-trips by the V-NAMA team to all five pilot municipalities to introduce the project and the vertically integrated approach. These trips also enabled initial assessment of the current SWM system and identification of priorities for mitigation actions in the waste sector. Planning workshops with the local governments officials and local stakeholder dialogues at each pilot location were undertaken, where sometimes for the first time all relevant stakeholders came together and discussed pressing issues concerning MSWM in their city/regency.

These were then followed by a central stakeholder dialogue, where the representatives of the five pilot municipalities first met, exchanged ideas and further developed their mitigation strategies in the MSWM sector in consultation with the national government.

The stakeholder dialogues formed an important part of the preparation phase to identify the appropriate actions at each location to mitigate their GHG emission from the municipal solid waste sector. Some stakeholders, especially public authorities, received direct feedback on their actions for the first time and were given the opportunity to reply. This enabled effective clarification and problem solving to take place in a collaborative way.

The main objective for developing a V-NAMA in the MSWM sector was to overcome barriers to GHG mitigation in that sector. These barriers were identified as:

Economic/financial barriers:

- Lack of local government funding for managing MSW;
- Lack of incentive/disincentive instruments for climate friendly improvements in the MSW sector;
- Lack of successful business models to enable local governments to effectively use available resources and ensure sustainability of the system;
- Low willingness of citizens to pay fees for waste management services;
- National government provides funds for the construction of MSW facilities such as sanitary landfill and 3R facilities. The municipality is responsible for the operation and maintenance, but the municipalities often lack the capacity (financially and staff-wise) and commitment for adequate operation and maintenance;
- In some cases, there are bio-digesters or composting plants installed, but these lack operational capacity and there is no sustainable market for the compost or biogas;
- Lack of private sector participation.

Institutional barriers:

- Lack of horizontal and vertical coordination between different line ministries, departments and other governance entities;
- Lack of climate change policy knowledge-transfer from national to sub-national level;
- Relatively new decentralization processes with weak bottom-up participation;
- Lack of institutional capacity for addressing climate change in MSW;
- Dispersed responsibility and unclear allocation of tasks between different line ministries and local government departments and between national and sub-national level;
- Inadequate data and poor knowledge management;
- Inadequate technical and administrative capacity at the local level;
- Some municipalities carry out GHG reducing activities in the waste sector, but the lack of an effective MRV-system prevents national government from including these emissions reductions in national GHG accounting.
- National line ministries have to meet certain quantitative targets with regard to GHG mitigation, Millennium Development Goals, pollution and other social aspects. This includes a GHG mitigation target broken down to the waste sector and a '100-0-100' work programme (100% access to safe water, 0% slum areas, 100% access to sanitation). However, there is no system or guidelines established for how the municipalities and provinces should collect, assemble and forward the data or how data should be analysed and verified after.

- Municipalities are often unable to operate infrastructure and their MSWM-system in accordance with national laws and regulations.

Political barriers:

- Lack of political will to introduce regulation and tipping fees.
- Low enforcement of existing laws, due to lack of punitive measures;
- Low priority of SWM in local governments' budget allocation.

Social barriers:

- MSWM is a highly sensitive issue, in particular around public acceptance from local communities located close to landfill sites;
- Lack of education and awareness of MSWM;
- Threat to the activities of existing informal recycling businesses and landfill scavenger settlements;
- Lack of community involvement in MSWM.

To overcome these barriers across the diverse and varied SWM systems operating across the five pilots areas, a focus on implementation of specific measures in each of the municipalities was favoured instead of a more general approach. The information to develop these 'locally appropriate mitigation actions' was gathered from the planning workshops and local stakeholder dialogues undertaken in each pilot area. While in one city, the establishment of a waste bank might be considered the most effective measure to reduce GHG emissions, generating energy from landfill gas might be more appropriate in another. Different measures have different implications for national funding, support and oversight arrangements and successful implementation is therefore heavily dependent on national government's ability and willingness to accommodate such changes.

The results of these field-visits, dialogues and planning workshops in the preparation phase were then integrated into a step-wise work plan with clear distribution of roles and responsibilities as well as timelines. This 'Concept Note' then formed the basis for an implementation agreement.

V-NAMA development phase (June 2013 – Nov. 2014)

The V-NAMA development phase included elaboration of a number of individual elements, building upon each other. These elements form the basis of a concept that addresses the aforementioned barriers and leads to transfor-

mational change and enhanced private-sector engagement. In the case of Indonesia, the core elements consisted of:

- *Local SWM and GHG baseline studies:* These studies helped to assess the present situation in the five pilot locations in regard to the MSWM and GHG emissions in general. A detailed understanding of the status quo in each area is important to guide the development of effective tailor-made solutions. In these studies, workshops were undertaken, where local stakeholders together with national experts analysed the composition of waste to provide a baseline. In other workshops the role of local communities, the informal sector and gender aspects were roughly assessed. The financial features of the local MSWM-system were another aspect: Where does the money come from and how much? What is it being used for? Which investments and operations are well financed and where is there a lack of funding and why? The capacity building needs in different groups of stakeholders were also assessed and existing good-practice (such as the Waste Bank in Malang or pilots in regard to WTE in Kendari) were documented.
- *Business as usual (BAU) scenario analysis:* Based on the data gathered, consultants developed BAU scenarios for each city, taking into account the different population and economic growth rates, the local MSWM-infrastructure and the capacity to operate the MSWM-system.
- *GHG mitigation options analysis:* The analysis of mitigation options was divided into two parts: The first part included the analysis of concrete areas of intervention, which in the case of Indonesia included:
 - waste reduction at the source based on 3R activities and composting;
 - solid waste as alternative fuels and raw materials, such as RDF (refuse derived fuel) for cement industry;
 - landfill gas (LFG) usage as alternative energy source;
 - anaerobic digestion;
 - landfill mining;
 - reduction of open burning and open dumping to the vacant land and water body;
 The GHG emissions reduction potential of these measures was then assessed for each of the pilot municipalities.

The second part of the options analysis included a cost estimation which also incorporated analysis of co-benefits and risks of the different options.

- *Incentives system development:* When it comes to finances in the Indonesian MSWM-sector, there are two major gaps: a lack of funding for infrastructure and equipment, and a lack of funding for operation and maintenance of the local MSWM-system. In relation to infrastructure and equipment, the national level supports the municipalities with the construction of MSWM facilities, such as sanitary landfills (downstream) and 3R-facilities. While operation and maintenance should remain the full responsibility of the local governments, additional support for infrastructure and equipment from national, private and/or international sources is needed to establish a well-functioning MSWM-system, which uses its full potential for GHG emissions reduction. The incentives system developed therefore consists of a national programme for infrastructure and equipment and a capacity building programme to enable the municipalities to increase fees etc. to finance the operation and maintenance of the infrastructure provided. Non-financial incentives should also be considered, such as the Adipura award that has already proven as a reputational incentive that could improve the MSWM in a city/regency.
- *MRV-system design:* The MRV system developed for the V-NAMA on MSWM had to follow two main principles: it should be integrated into the MRV-system of the RAN-GRK and RAD-GRK-processes and other GHG emission reduction interventions should also be able to make use of it. In other words, the system should be in line with the MER (Monitoring, Evaluation and Reporting) system developed by BAPPENAS and the MRV system developed by the Ministry of Environment. In that way it aims to have a transformational impact beyond the NAMA and helps the Indonesian government to integrate the impact of a broad range of mitigation actions into national GHG accounting. It was also important that the MRV-system should be designed and implemented in a way that the local government could directly make use of.
- *Capacity Building and institutional strengthening strategy:* Capacity building in the V-NAMA in MSWM should enable the national and the local governments to more effectively fulfil their tasks. On local level, the most urgent issue is to enable local governments to increase their MSWM budget, reduce costs and spend money in the most efficient way (with particular focus on GHG emission reductions) as well as the human capacity of the local governments. This includes institutional development and strengthening of operating entities, technical

operations, monitoring and planning as well as development of strategies for how best to involve informal and formal private sector actors.

At the national level, horizontal cooperation and coordination between the line ministries and knowledge exchange and coordination mechanism for communication with the sub-national level should be strengthened. Support should also be given for the development of incentive and support programmes which fit the needs of the local governments and are prioritized for GHG emission mitigation.

Together with project partners, the V-NAMA team prepared a capacity building roadmap and a detailed implementation plan. Training materials for the national and local level on the role of cities in climate change, climate finance for cities and MSWM under climate change aspects were also developed and were piloted with participants from national and local government.

These NAMA elements were jointly developed with the various V-NAMA stakeholders and were discussed in a number of workshops between June 2013 and October 2014. They form the basis of the VIMSWa-NAMA proposal (Vertically integrated Municipal Solid Waste Management-NAMA) which is to be presented to the international (donor) community for support.

Pre-implementation and search for funding phase (ongoing)

In Indonesia, NAMAs are currently under preparation in various sectors including transport, energy, forestry and the cement industry. The national government under the coordination of BAPPENAS and supported by the Indonesian Climate Change Trust Fund (ICCTF) decided to promote these NAMAs in a coordinated way, using publications and events together with one-on-one promotion activities to draw attention in the international donor community. The VIMSWa-NAMA proposal has been presented at the ICCTF Climate and Development Investment Forum, Jakarta in September 2014 and at the UNFCCC-COP20 in Lima, Peru in December 2014.

Additionally the Indonesian V-NAMA approach concept has been presented at various international events in India, Poland, Thailand, Vietnam, Austria, Brazil and Ethiopia. Some of these events and presentations have been held not only by partners from national governments, but also municipal level including the mayors of Kendari and Jambi.

The overlap of four out of five pilot municipalities of the V-NAMA project with KfW's solid waste programme 'Emissions Reduction in Cities – Solid Waste Management' lead to constant cooperation between the GIZ V-NAMA team and the KfW, being intensified during the 'search for funding and pre-implementation phase'. Purpose was the alignment of the two projects and to make best use of synergies since several of the identified gaps for an effective MSWM-system in the pilot municipalities are being addressed by KfW.

Lessons Learnt

The Indonesian government and its development partners are currently preparing many NAMA concepts in a structured and coordinated way, which paves ways to compare success factors and differences of the V-NAMA approach to other NAMA developments.

Success factors

1. The V-NAMA started with a bottom up-process and analysed in a first phase the needs of local governments e.g. during the planning workshops, local stakeholder dialogues and field trips. The result in the V-NAMA approach was a comparatively high ownership and motivation at municipal level also enabling municipalities to benefit from capacity building and knowledge exchange during the V-NAMA development phase.
2. Support and involvement from national government is critical for successful development of NAMAs which involve sub-nationals, e.g. for the development of well-fitting financial support mechanisms, MRV or capacity building.
3. Vertical coordination goes hand-in-hand with improved horizontal coordination between ministries involved in MSWM: BAPPENAS, Ministry of Public Works and Housing, Ministry of Environment and Ministry of Energy and Mineral Resources. The establishment of the Technical Committee was beneficial for the cooperation between ministries, particularly for coordinating roles, authorities and responsibilities. The Technical Committee structure is now also used for waste sector-related issues beyond the V-NAMA and has helped to improve horizontal coordination.
4. Building trust in local government is a key factor influencing private sector investment. During the development of the V-NAMA, Unilever signed a Memorandum of Understanding on further collaboration to replicate best-practice in other municipalities. This demonstrates that V-NAMA as a nationally coordinated approach for local climate action could help to build

The VIMSWa-NAMA proposal

Framework

The V-NAMA proposal contributes to the RAN-GRK and RAD-GRK (national and local action plans for GHG emissions reduction). The proposal is closely aligned with the solid waste programme 'Emissions Reduction in Cities – Solid Waste Management', currently under implementation financed by the Government of the Republic of Indonesia, KfW and the Swiss State Secretariat of Economic Affairs (SECO). The programme comprises of the construction of sanitary landfills in five municipalities (four of which overlap with the five V-NAMA pilot municipalities) including sorting and composting facilities, landfill gas extraction and flaring and leachate collection and treatment facilities. Out of the overall investment budget of approximately €100m EUR, KfW provides on behalf of the German government an interest reduced loan of €75m EUR; SECO finances accompanying measures including capacity building for municipalities in the amount of €7.6m EUR.

Objective

The project aims at developing a vertically integrated approach to mitigate the GHG emission in the MSWM sector in Indonesia by applying financing mechanisms for infrastructure investments and operations (including reduction of slum-areas).

Concept and methodical approach

The VIMSWa-NAMA proposal comprises financial and technical components. Together with the KfW activities, it aims at addressing financial and operational gaps preventing effective MSWM (and subsequent GHG emission reductions) in five pilot municipalities:

The financial components: With the above mentioned interest reduced loan from KfW, the Indonesian government supports the construction of five sanitary landfills, including composting and sorting facilities, of which are four being located in VIMSWa-NAMA pilot municipalities. As core element of the VIMSWa-NAMA, the Indonesian national government in cooperation with local governments develops and pilot-tests a

trust and deliver benefits for multiple stakeholders. In this case, Unilever would gain CSR (Corporate Social Responsibility) and EPR (extended producer responsibility) benefits and better access to secondary raw materials; Municipalities improve their MSWM-system and realise investments or even generate income; and national government has a privately financed mitigation action which contributes to the national mitigation target.

performance based funding mechanism for climate-friendly upstream and downstream MSWM-infrastructure and equipment. This new financing mechanism focuses on financing local government investments in upstream infrastructure and equipment. Five municipalities (Jambi, Malang, Kendari, Pekalongan, Sidoarjo) will pilot and test the mechanism by investing in defined and custom-made infrastructure projects which include: Increasing service coverage including provision of MSWM collection and transportation vehicles; 3R activities and composting, including home-recycling and home-composting and solid-waste-bank; anaerobic digestion; sanitary landfill with LFG capture, including flaring, direct use of LFG and LFG to electricity conversion (WTE); reduction of open burning and open dumping. Interventions particularly contribute to the national programme of Ministry of Public Works and Housing to provide MSWM services for slum areas. In an additional phase, the financing mechanism could be rolled out and replicated in other municipalities.

The technical components: Accompanying measures on municipal level will be carried out by KfW in four out of five VIMSWa-NAMA pilot municipalities, with the aim of reducing financing needs for operation and maintenance and at the same time supporting the municipalities to increase their MSWM-budget (from retribution, fees and other incomes). Similar measures will be carried out in Kendari, not being part of the "Emissions reductions in cities program" of KfW.

At national level, the VIMSWa-NAMA proposal concentrates on accompanying measures such as review and update of existing laws and regulations and the improvement of horizontal cooperation between different line-ministries involved. The technical component also comprises the establishment of a MRV-system for the MSWM-sector. Firstly, the MRV-system will be developed, then it will be piloted and tested with the activities carried out in the five pilot municipalities. Finally the system will be applied to other interventions in the MSWM-sector across Indonesia. This MRV system should be in line with the MER (Monitoring, Evaluation and Reporting) system

developed by BAPPENAS and the MRV system developed by the Ministry of Environment.

Financial and Mitigation ambition

The overall budget of VIMSWa-NAMA accounts for around €20m EUR (not including the activities carried out under the 'Emissions Reduction in Cities'-programme of KfW). The project aims at allocating significant contributions from Indonesian public sources, especially the national budget, user contributions (fees) and private funds (income generation from waste).

The potential GHG emission reduction from the proposed mitigation actions of the five pilot municipalities is expected around 52,000 t CO₂eq per year after all investment measures are implemented (not including the mitigation effects from the KfW-activities).

Transformational change

All these measures will lead to transformational changes mainly by promoting a paradigm shift from "collect-transport-dispose" to the 3R ("reduce-reuse-recycle") concept that focuses on waste minimization. Other transformational changes include performance based finance transfer mechanisms from national to local level, and development of GHG reducing investment and capacity building projects in national and sub-national government. Applying vertically integrated approaches will also provide an entry point to address climate change issues related to the MSWM and provide a blueprint for the involvement of sub-national stakeholders into national mitigation strategies in other sectors.

Sustainable development co-benefits

Besides strengthening local institutions and improving vertical integration and coordination between different levels of government, the proposed activities are expected to have significant development co-benefits (environmental, economic and social co-benefits) and are strongly aligned with national development priorities such as a 100% access to sanitation (including SWM) by 2019.

Lessons learnt

1. Initially, to take account of the anticipated variation in engagement and support that would be required working with the different municipalities, the V-NAMA project planned to separate the pilot areas into two groups based on the level of advancement in their MSWM-system. Over time, it became clear this was not necessary as the areas initially assessed as less advanced

became the more motivated partners in the project. The V-NAMA approach allowed enough flexibility to change plans and to work together with all five municipalities at the same time.

2. The NAMA development team had to exercise several changes of priorities addressed by stakeholders. For example, subsequent to commencing the design of the V-NAMA a 5-year development plan 2014-2019 intro-

duced an objective for the Ministry of Public Works and Housing to reduce urban slum areas to 0% by 2019.

The ministry as a key partner in the project on national level therefore searched for opportunities to use the V-NAMA to support this objective. For concept development, it is advisable to allow integrating and addressing new priorities as they emerge, without losing the overarching aim to reduce GHG emissions.

3. The V-NAMA development process can be rather lengthy and it is important to keep local partners motivated. This can be achieved by ensuring the process itself delivers value for local partners. For example, local partners benefitted especially from the planning workshops and local stakeholder dialogues, which provided a platform for constructive discussions and mutual improvement of the local MSWM-system. The V-NAMA development process also helped provide data, e.g. in regard to the estimation of GHG emissions or waste composition, which the municipalities could also use for other purposes.
4. The example of Unilever and other companies that approached the V-NAMA project demonstrates that the V-NAMA process draws attention to and can potentially lead to private sector involvement. However, much work remains to be undertaken in the process to ensure the needs of both municipalities and companies are satisfied.
5. It was very important to conduct local stakeholder dialogues for stakeholders at the local level to agree on a way forward at municipal level. In this process the partners in local government were the ones to identify and invite the relevant stakeholders. The events involved

a lot of conflict around previously unaddressed topics as this was, in most cases, the first time local government had received feedback from their communities and other stakeholders on MSWM. Effective facilitation enabled the conversations to be channeled into a constructive dialogue to jointly develop solutions.

6. In a similar way, the initial dialogue between sub-national and national government involved conflict for similar reasons, and also here the process enabled the issues to be effectively channeled into a constructive dialogue that benefits all related parties.
7. The development of a NAMA with so many stakeholders involved requires an iterative process and inevitable changes of the concept over time. This makes it more challenging to approach potential funding institutions at an early stage as bankable actions and clear budget demands cannot be presented. It would help in the future to begin discussions with input from potential funders to improve the probability of finding suitable funding opportunities during the NAMA preparation process.

Recommendations

1. Try to involve the private sector but also make clear that there are certain obstacles and barriers to overcome before viable business cases can be developed.
2. Partner with other international and bilateral development organizations to avoid uncoordinated overlaps
3. Start early enough to get in contact with possible donors and do not hesitate to present unfinished project proposals to them for feedback.



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