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Local governance of SWM

Policy brief 3 and its technical notes





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“

It is not about waste, is about people.

ISWA, 2019

”



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A.

Context

The work of local authorities covers various sectors including planning, infrastructure works, territorial management, economic development, environmental protection, as well as the provision of health, educational, social, cultural, and sports services, etc. Furthermore, by having to fill the gradually increasing discrepancies caused by the incapability of the central authority to meet the needs of citizens and residents, the elected local authorities have become key players in development and service delivery. The period that followed the Lebanese civil war (1975– 1990) is the most indicative of the absence of a serious political will in Lebanon to achieve administrative decentralisation as provided for in the Taef Agreement of 1989¹. The solid waste sector is a prominent example in this regard. Since the early 1990s, the central authority has been promising to empower and fund local authorities to better fulfill their solid waste management duties. Towards the end of 1992, the Council for Development and Reconstruction (CDR), that reports to the Office of the Prime Minister, replaced the Joint Commission for the City of Beirut, which was then entrusted with the tasks of street sweeping and waste collection, in cooperation with the Municipal Department for Public Cleanliness. As a result, the CDR monopolised all loans provided by the state and all donations allocated for the management of this sector, including all financing, contracting, and oversight agreements. The promulgation of the 1977 Municipal Act that regulates the work of local authorities was both a qualitative and quantitative leap towards the promotion of local development and a cornerstone for the application of administrative decentralisation in Lebanon. Four decades later, this initiative remains defective at the legislative level due to the central authority's practices that have weakened the ability of local authorities to assume their role, and also marginalised them by taking over their funds and powers and failing to provide the financial, technical, and human resources needed to improve their performance in more than one sector. Local authorities in Lebanon face many structural challenges: since the 2015 waste crisis, their capacity to collect domestic waste in a systematic manner and carry out a comprehensive waste management plan is limited. The wave of mass protests that started in October 2019 have brought the dire state of Lebanon's infrastructure and public services even more starkly to the public's attention. In a country where local authorities are already chronically underfunded, the ongoing economic, financial, and monetary crisis in Lebanon have further hampered the capabilities to provide services and plan for long-term project development.

¹ The Taef Agreement, paragraph 3 entitled "Administrative Decentralisation" reads as follows: *Expanded administrative decentralisation shall be adopted at the level of the smaller administrative units (district and smaller units) through the election of a council for every district, headed by the district officer to ensure local participation.*



B.

Analysis

The analysis derives from the triangulation between interviews conducted with heads of municipality across the 24 districts in Lebanon (excluding Beirut) and the consultant's experience. The data collection showed that 40% of the local interviewed local authorities use the Independent Municipal Fund (IMF) as a primary source of funding for waste management, while 25% benefit from funds from foreign donors and another 25% rely on donations from citizens and businesses. The rest came from projects implemented by OMSAR.

The analysis shows how the economic sustainability of the service is labile and non-continuous, putting the service chain in serious difficulty. The IMF funds, which were already scarce before the crisis and are often delayed, especially after 2019 with the devaluation of the Lebanese pound, are not even sufficient to pay the minimum necessary expenses. The possibility of accessing external funds also depends both on the ability of public employees to maintain relationships with international donors and on their strategies which can be applied only in certain areas of the country and often come to support serious humanitarian crisis (see civil war in Syria).

As a consequence, the service is implemented by municipalities without a private service provider in approximately 80% of cases, but at the same time only 30% of them have a department that deals with waste management in which professionals and skilled employees are involved. Generally, there are not enough skills to manage the waste locally, neither at the economic-financial level nor at the environmental protection level. Furthermore, in cases where the service is managed by the private sector, the contracts have a duration of less than a year and it therefore becomes impossible to make investments.

Given the limited capacity and resources, local authorities (municipalities and union of municipalities) have their hands tied because: (1) they are not provided the technical, legal and economic implementation tools, such as realistic permitting processes and PPP models and procurement documents, among others; and (2) are bound by rigid (often obsolete) regulations and heavy bureaucracy.

Given the necessity of economies of scale to make waste management solutions affordable and sustainable, municipalities need to form local clusters for collaboration on SWM. This would favor inter-municipal cooperation, capacity building (e.g. HR) and customer inclusivity. One form of formal (legally and administratively binding) clustering is Service



Zones. Those are proposed as part of the National Integrated Solid Waste Management Master Plan of Lebanon² which identifies 17 services zones (see Figure 1).

On top of the above, the municipalities do not have “binding” local action plans – that ensures continuous and progressive efforts toward specific SWM (Solid Waste Management) goals. Instead, there are haphazard decisions and actions that often stop when the municipal council is changed upon elections.

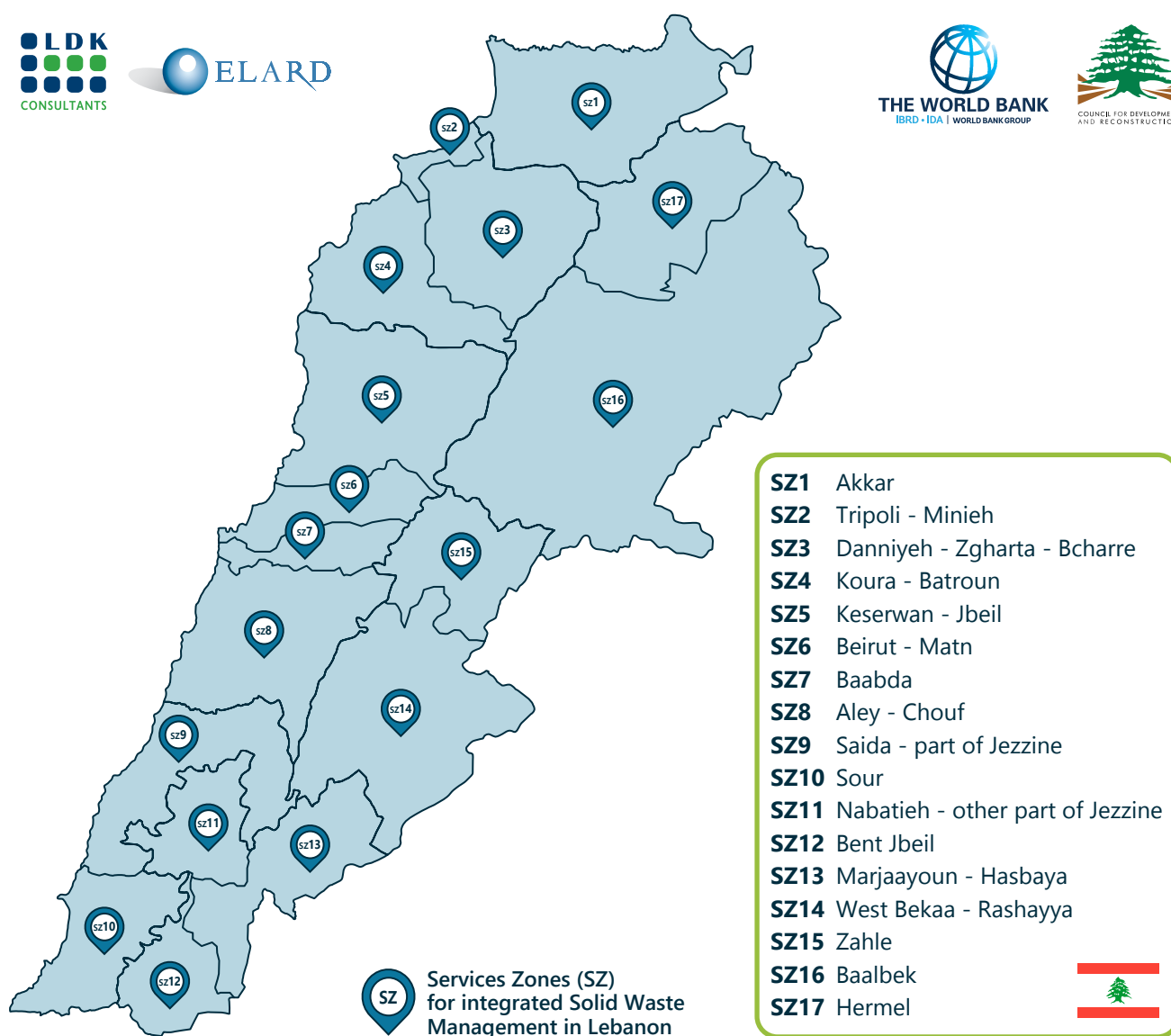


Figure 1. Service zones proposed by the New National Integrated Solid Waste Strategy

² https://www.cdr.gov.lb/getmedia/f2feccb7-466e-4e41-a203-a0056ce7e588/Draft-National-Integrated-Solid-Waste-Management-Master-Plan-of-Lebanon_Executive-Summary_EN.pdf.aspx



C.

Recommendations

Limited financial sustainability, combined with weak institutional set up, appear to be among the main causes of lack of efficiency and resilience of the Lebanese waste management system. Financial reforms and a tax-incentive policy that encourages the waste reduction and the gradual adoption of modern recycling techniques are required in the first place. The resources of local authorities should as well be strengthened through the reform of the IMF revenues' calculation and distribution modality. The Extended Administrative Decentralisation Bill³ proposes to have the IMF replaced by a decentralised entity which, unlike the IMF, possesses legal power and administrative and financial autonomy, is free of any central control, but is subject to ex-post controls by the Court of Audit only. In particular the following aspects are highlighted and detailed:

Citizen consensus: An effective and efficient SWM service chain needs to involve users. In Lebanon, the governance of waste management is mostly the responsibility of local authorities, but cooperation with key stakeholders remains weak. Most municipalities in Lebanon perceive this cooperation as “not easy”, which has led to confrontations with environmental activists. Although some local authorities have involved citizens, most are unable to mainstream citizen participation in their governance of solid waste, due to lack of funds and unavailability of experts within their teams (not only engineers but also facilitators). Central government officials have also expressed a negative view of the prospects for cooperation with citizens in the field of SWM.

To implement an ISWM framework effectively, guided by a national strategy, decentralised regional and local authorities should use participatory policies to gain citizen buy-in and create tangible SWM targets and plans. Participatory processes should be centred on the concepts of inclusivity and pluralism. Involving stakeholders that have opposing views can act as a resource to generate innovation, create equal understanding in a local community and ensure equal access to information and knowledge. Breaking with decades of top-down decisions in Lebanon, the implementation of participatory processes requires political and social consensus, as institutions need to be committed to transparency and dedicate appropriate time and resources. In waste management, when participatory processes are used, it has the power to strongly reduce the “Not In My Backyard” (NIMBY) syndrome, and can result in the development of SWM facilities and infrastructure that are environmentally sound and socially accepted.

³ Endorsed by the Ministry of Interior and Municipalities Ziad Baroud and released by President Michel Sleiman. 2014



Decentralization and Clustering: Effective decentralisation makes solid waste management more flexible, efficient and responsive to local requirements and potentials. At the same time, the devolution of decision-making, financial management, procurement and implementation functions reduces the load on the central authorities, allowing them to focus on their main responsibilities, such as strategy development, legislation, definition of standards, environmental monitoring and support to municipalities, among others. Clustering in waste management can help optimize collection routes, reduce costs, and improve efficiency.

Long-Term Debts: Before the economic crisis, Lebanese local authorities already suffered from a chronic lack of financial resources not only to initiate and implement sustainable development projects but also to provide basic services such as waste management. The municipal finance system is fraught with many shortcomings and gaps. The Independent Municipal Fund (IMF) is based on unfair distributional criteria that lead to an improper allocation of resources. Furthermore, the disbursement of the funds is non-transparent and most often delayed. Two main recommendations are provided:

- the government must reform the disbursement mechanism as well as redefine the distribution criteria of IMF
- Enhance local taxation system and promotes fiscal autonomy of municipalities.

Local Plans and Partnerships: Planning in local institutions is of vital importance especially in cases where there are not enough funds to provide services efficiently and effectively. However, Local Plans must adopt adequate timing, contain governance aspects and have a financing mechanism. The plans must be developed by experts, yet shall follow a participatory process including the community that will be directly affected by the plan. For this reason, planning should be considered a time consuming activity and donors should understand the importance of the time factor. The preparation must involve the institutional actors (who are going to implement the plan). During the various phases, training courses must be conducted for the local staff members to be ready for implementation.

Financial Flexibility: Solid waste management solutions may, in some cases, cost a UoM more than its total budget. Higher financial flexibility and creative alternatives to bypass bottlenecks, can be driven by the following:

- amendment of budget-related regulations (e.g. ceiling for purchases that require central approval, allowing addition of a budget item for SWM services), and law amendments to allow municipalities to recruit – which is currently forbidden by the law.
- “legally approved” template for organizational decisions (arar tenfizeh) that allows collection of waste management fees in the absence of (or while waiting for) a ratified cost-recovery law.
- partnering with NGOs or private companies (consultants) to assist in planning, fund raising and technical implementation, in the presence of a law that forbid any hiring at the municipal level.
- UoMs can overcome this obstacle either by privatising some aspects of the service or by entering partnerships with the private sector and associations, which allows them to cover some of their expenses and use the support of international bodies to secure additional income for staffing and investment. Nevertheless, these additional funding sources are temporary and unreliable.
- Establish technical units that are independent, and they have their own by-law under which the UoMs can hire employees with technical skills.

D.



Technical Note 3.1 – Decentralization and Clustering

D.1. Justification

Local authorities responsible for solid waste management should be granted the authority to manage all related affairs and, in particular, to collect user charges and other revenues for the purpose of MSWM. Clustering in waste management can help optimize collection routes, reduce costs, and improve efficiency. By grouping geographically proximate waste collection points, it allows for more streamlined and targeted collection strategies, ultimately minimizing fuel consumption and environmental impact. Additionally, clustering can aid in identifying patterns and trends in waste generation, contributing to better long-term planning and resource allocation for sustainable waste management practices.

D.2. Description

Decentralisation of authority should be accompanied by a corresponding distribution of financial and administrative powers and capacities for system planning, implementation and operation. This normally requires improved procedures for preparing local solid waste management budgets based on actual costs, and allocating the required funds. Clustering is a process that aims at establishing geographic boundaries for waste management responsibilities. The clustering approach and principles have to be enforced by the national government; but clusters need to be established at governorates level as a co-decision with local authorities. The cluster division should take into consideration the entire country and all villages and rural area with or without municipalities.

D.2.1. Acceptability by citizens & politicians

The term acceptability already represents a way of interpreting waste management incorrectly. Acceptability is not debatable when it comes to a service that mainly aims to protect citizens from health risks and preserve the environment in which communities live, eat and work. Waste management must follow the principles of inclusivity; it must first of all respect the concept of "nothing about me without me". In other words, the need for adequate waste management systems must not be accepted but must be considered a necessity to reduce the impact, following less intrusive methods that are inclusive – thus making waste management simpler, shared and inherent to social life of communities. As such, we should not be looking for acceptance but understanding, sharing, and consciously desired.



D.2.2. Service zones and clustering

The national government should take into consideration four key principles while enforcing the approach to clustering exercise.

1. Overcoming of fragmentation proximity and self-sufficiency of the service chain.

The principle follows the waste law 80/2018. The logic is establishing facilities that are economically sustainable and comply with service chain concept, where the treatment of Municipal Solid Waste is a public service that should be paid by the polluters with an appropriate, balanced, and comprehensive cost recovery system. The goal should be to reach the economies of scale with a sufficient profit margins to service providers, which give the means to meet environmental, social, technical, legal, and institutional requirements. The criteria depend on the type of the collection system, facilities and disposal site management. To consider also the economy of density, which is mainly related to the waste collection system, and assumes that it is more convenient in term of time and costs, to collect in dense urban area than in spread rural environment. Service areas or clusters selection should consider costs and timing for collection in low density areas.

2. Adequate assessment of the road and communication system to optimize the logistic of waste within the cluster. The criteria need to be assessed considering urban and rural areas, logistic barriers, geographic distribution, status of main roads and distance from urbanized areas, among others.

3. Enhancement of common needs and affinities in the economic production and management of waste. It considers the main waste streams or sub-streams within the MSW and potential synergies between them while separated. Waste stream examples include: industrial, agricultural, harbor waste or sub-streams such as e-waste, batteries, bulky items, exhausted oils.

4. Assessment of waste management facilities already built and operational. Clustering approach cannot be established without considering the present situation. Currently operational facilities need to be accounted in cluster selection.

Principles guiding the selection of service areas



Overcoming fragmentation of proximity and self-sufficiency of the service chain



Adequate assessment of roads and communications



Enhancement of common needs and affinities in economic production



Assessment of built and operational waste management facilities

Figure 2. Cluster principles and criteria

The above leads to clustering criteria that may be used to establish Waste Optimal Areas (WOA) within the governorates. Irrespective of the number of established WOA, each should respect the principles above and need to be defined and selected in a co-creation process with the governorate and municipalities (or representatives of the villages without municipality). The following criteria are proposed:

1. Administrative units
2. Waste generation
3. Road accessibility
4. Socio-cultural structure
5. Different waste streams and sub-streams



In clustering exercise GIS layers and tools are recommended to give the possibility to overlap criteria which will be transformed into layers and easily check if the cluster respect principles and criteria.

D.2.3. SWM components to be centralized or localized

The SWM responsibilities may be shared by the central government (national level) and the local authorities. Figure 3 below illustrates a potential distribution of tasks at national and local levels.

Services under national and local responsibility



National government responsibilities

- National strategies
- Standards, regulations and KPIs
- Waste classification (e.g. streams, EWC)
- Environment monitoring
- Technical support to local government
- EPRs, waste reduction and awareness
- Data storage and analysis



Local government responsibilities

- Waste collection service
- Waste treatment
- Waste disposal
- Data collection and technical monitoring
- Implementing waste reduction and awareness
- PFM
- Public-Private Partnerships, procurement
- Implement cost recovery

Figure 3. Local and national responsibilities





D.3. Benchmarking

Germany



Bundesministerium
für Umwelt, Naturschutz, nukleare Sicherheit
und Verbraucherschutz

Federal Ministry for the Environment, Nature Conservation, Nuclear Safety and Consumer Protection

1. Sets priorities,
2. Participates in the enactment of laws, oversees strategic planning, information and public relations
3. Defines requirements for waste facilities



Waste
Management



Local
Government



Sixteen Federal States

1. Each state adopts its own waste management act containing supplementary regulations to the national law, e.g. concerning regional waste management concepts and rules on requirements for disposal.
2. There is no national waste management planning in Germany. Instead, each Federal State develops a waste management plan for its area.

Oman



Oman Environmental Services Holding Company; responsible for the municipal waste management services in all the governorates (Clusters) in Oman.



- Be'ah's headquarters is located in Muscat and operate under the Oman Investment Authority (OIA).
- In the Royal Decree (46/2009), be'ah has been assigned over the waste sector in one cluster after the other.

Italy



Divided into 21 regions



Each region manages waste under National regulations and EU directives

Each region identifies Optimal Territorial Areas (ATOs)

Clustering approach is established and corresponds to the provinces

Regions create entities called EGA (Entity for ATO governance)

Italy is divided into 57 ATOs

Kingdom of Saudi Arabia



In 2021, KSA updated its waste management strategy, focusing on efficient service areas reviewed by professionals from the National Center for Waste Management (MWAN).



To divide the country into 25 clusters, GIS mapping was utilized by superimposing different layers that corresponded to the principles they followed. The principles were as follows:

- 1. Institutional set up:** Defining boundaries based on municipalities, governors, and regional commissions.
- 2. Population:** Integrating governance layers and clustering sparsely populated regions based on governance dimensions..
- 3. Transportation and topography:** Considering topography features like mountains, rivers, etc., and road networks for waste movement in cluster formation.
- 4. Waste generation sources:** Grouping major waste generation sites with nearest cluster if not already part of one.
- 5. Other:** Allocating minimum land for waste facilities in each cluster, with fine-tuning for remaining land.

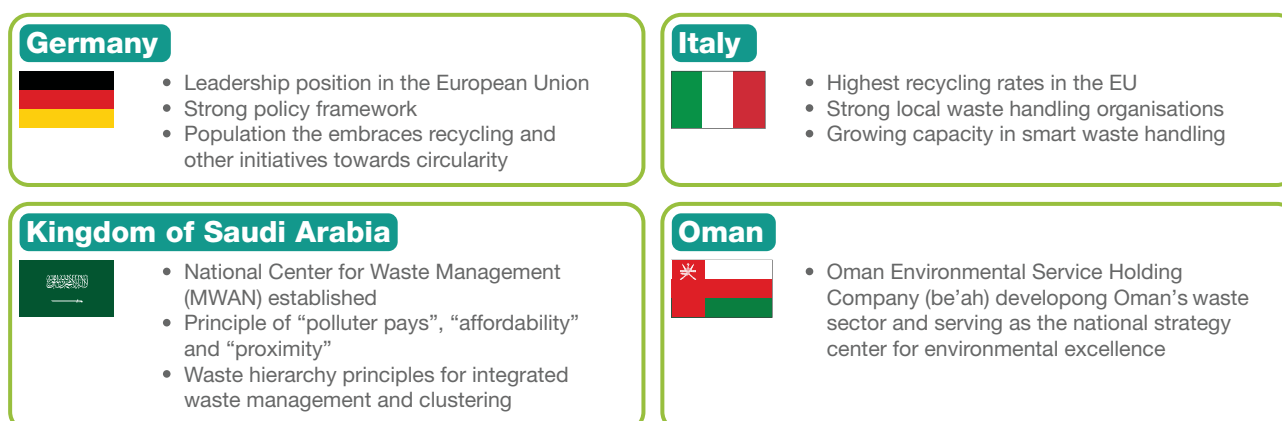


Figure 4. General benchmarking overview



E.



Technical Note 3.2 – Long-Term Debts

E.1. Justification

Financial planning and management is equally precarious. The central government's delays in transferring IMF dues severely affects the yearly financial planning capacity in local authorities. Secondly, local elected leaders rarely go beyond traditional tax systems and take up proactive fundraising strategies, some of which would be allowed by law. Before the economic crisis, Lebanese local authorities already suffered from a chronic lack of financial resources not only to initiate and implement sustainable development projects but also to provide basic services such as waste management. Before 2019, two thirds of the Lebanese municipalities had an average yearly budget under 66,000 USD while 63–70% of local expenditures are allocated to basic infrastructure works. In more extreme cases, local authorities can only cover their running costs. Financially, local authorities are kept on a tight leash by the central government, which uses its discretionary power to control the revenues of the IMF, irrespective of legal deadlines and criteria. This set-up favors central political control over good management and local autonomy. The obstacles are also bureaucratic and legal. Local authorities are subject to heavy administrative and financial oversight, which results in endemic bottlenecks and backlogs. In many cases, reported during the country-wide interviews, the delay in the payment from IMF reaches one year.





E.2. Description

The main tool for securing finances for the provision of services and local development in Lebanese local authorities is the intergovernmental grant system, referred to in Lebanon as the Independent Municipal Fund (IMF). However, there exist many gaps in the implementation of an effective and equitable intergovernmental grant system in Lebanon. Common and shared problems among local authorities are that there is lack of transparency in IMF, municipalities are not aware of how the central government manages their promised funds and on what criteria deductions are made since data on revenue sources of the IMF are not publicly available, furthermore, local authorities are particularly frustrated with the central government regarding deductions from IMF accounts. The central government has been deducting significant funds from the IMF to cover expenditures elsewhere. Another key problem with the IMF is the delay in the disbursement of funds, which prohibits the efficiency of local services.

In contrast, the Extended Administrative Decentralisation Bill⁴ proposes to have the IMF replaced by a decentralised entity which, unlike the IMF, possesses legal power and administrative and financial autonomy, is free of any central control, but is subject to ex-post controls by the Court of Audit only.



Figure 5. Source of waste cost recovery

An interview with 23 municipalities in all Lebanon (as part of this project) showed that the 42% of municipalities rely on IMF as the main source for waste collection. The 24% rely more on the so-called community donations and another 24% rely on external funds (Figure 3). The results show that many municipalities have already started to diversify their cost recovery sources (e.g. NGOs, UN, National Donors or agencies) and rely less on IMF. On one side the municipality should be improve the service fee collection system; but on the other side the IMF should be reformed.

E.2.1. Autonomy of service management

The way to avoid (or at least to reduce) the impact of bureaucracy is to foster local autonomy with respect to management of services, including waste management. Local authorities, mainly Unions of Municipalities (UoM)s can therefore rely on a direct waste management service fee. This would increase financial sustainability and service efficiency; and at the same time provide a guarantee for investors, financing programs, donors and international organizations. Several international financial programs and approaches rely on cost recovery systems to deliver funds and technical assistance⁵.

⁴ Endorsed by the Ministry of Interior and Municipalities Ziad Baroud and released by President Michel Sleiman. 2014

⁵ For instance, is the approach for waste management of the former program R20 now renamed Catalytic Finance Foundation, <https://www.catalyticfinance.org/approach>



E.2.2. Diversification of funding sources

Unpredictable and delayed transfers as well as regular and most often unfair deductions have rendered the municipalities unable to foresee their revenues and as a result accurately plan their budgets. For these reasons, local authorities should have the following options:

E.2.2.1. Reform IMF

The recommendations for reform fall under two sub-components:

- **Transparency and predictability of funds:** it can be achieved by creating an independent institution responsible for publicly disclosing tax collection data, eliminating unrelated deductions from municipal budgets such as “Sukleen bill”, the civil defence and public school registration fees, and streamlining inter-ministerial disbursement processes.
- **Equitable distribution criteria:** (1) closing the gap between poor and rich municipalities, (2) replacing registered population with resident population when counting the number of citizens in a municipality, (3) set up a minimum level of funding to allow all municipalities to cover basic costs, and (4) set up criteria to classify municipalities on the level of development of the SMW system⁶.

E.2.2.2. Alternative source of funds

Even with the IMF reform, local authorities must improve the collection of local taxes to be more efficient and effective. Even if there are around 36 different local taxes and fee, municipalities in Lebanon suffer from low tax collection rates as well as lack a diversified portfolio of revenues.

In this sense, international organizations and cooperation should support local authorities in improving tax revenue through:

- Improving administrative capacity
- Increase human resources and IT systems
- Propose more efficient legal enforcement options, and
- Prepare proper assessment of the fee rates
- Aware local communities on the importance of an efficient fiscal system

At the same time, it is necessary that services, including waste management are improved and modernized. A survey carried out in Lebanon in 2023 (as part of this project) showed that citizens are willing to pay for the waste management service as long as it is efficient. The improvement of the service should be proposed by international cooperation, along with the necessary governance-related reforms.

A second option is creating a specific fee for the waste management “service”, to be charged to the service users and reflecting the cost of the received service. Waste charging schemes may include: (1) a fixed amount, (2) a part that depends on the extent of usage of the service, and (3) a specific fee for potential additional (non-standard) services. The waste charging scheme should in any case ensure full coverage of the waste management related costs (including indirect costs such as awareness, service monitoring, end of life facilities management, etc...) and the fair allocation of these costs to the population as beneficiaries of the services.

⁶ Municipal finance must be reformed to address Lebanon’s socio-economic crisis. LCPS. 2014



E.3. Benchmarking

Italy

Law 147/2013 establishes that the costs of the waste service must be financed entirely through the waste tax (Tari) paid by citizens. The services that must be guaranteed by the local authorities are related to administration, local police, education, roads and territory, social and nursery among them waste management is the most expensive.

Approximately 27% of current spending on fundamental functions is allocated to this essential service.



Germany

Self-funded waste management



Iran

Government's Direct Budget



1. Government's direct budget

2. Taxes

3. Bills



4. Social infrastructure and investments



5. Crude oil and petroleum product sales

6. Banknote printing.



7. In 2022, the government allocated 1 trillion tomans (equivalent to 18.2 million euros) for setting up recycling facilities and equipment.



8. Several collection boxes are placed around the city. Citizens could put their separated solid waste in these boxes and receive currency or discount codes in return.



Budget for Waste Management



Direct Taxes

1. There are a website and mobile application for payment the tax.
2. This money should be paid yearly and if it would not paid by families, it will be increased to a 9% penalty annually.
3. If the building owners provide official certification from the regional electricity department confirming that the house is uninhabited, the cost of waste management services will not be applied to it.

Municipal Fines

Unauthorized changes in building occupancy without permission result in penalties on the owner.





Technical Note 3.3 – Local Plans and Partnerships

F.1. Description

The purpose of this part is to create a more efficient governance system adapted to the Lebanese context in terms of planning and possible options for public-private partnerships. In particular, suggestions are provided on how to address the above-mentioned aspects at local authority level. Below are indications on the possibility of having a plan that has sufficient prerequisites to ensure its implementation and some suggestions on practical partnerships between the public and private sectors, along with main aspects to be taken into consideration.

F.1.1. Binding action-plans

The possibility of legally binding action plans is already included in law 80/2018 and the activation of the National Solid Waste Management Authority. Once the national strategy is complete, local plans will have guidelines on which to start in defining the interventions to be planned. Art. 11 of the waste law states that: “Each local administration shall prepare a draft local solid waste management program”. The main aspects to consider are:

- Developing a local plan that has been agreed and developed together with local communities, as well as proposing tools for the evaluation and selection of sites on which to build plants or landfills, such as: using clustering GIS layers join with a site selection system, such as LCA (Landscape Character Assessment) and developing a site selection methodology which include a MCA (Multi Criteria Analysis).
- Guaranteeing a monitoring and control system for the service and have mechanisms for communication with the end users.
- Having access to the funds needed to implement the action plan, and deciding on the aspects to be financed by the IMF – provided the reforms took place.

F.1.2. Templates for procurement and permitting processes

Quoting TADWIR project (funded by EU): “On the contractual level, contracts have limited validity in terms, in other words, they do not lead to complementary investments and good maintenance. The contracts present several vague terms in their articles and discrepancies arise between the envisaged operation and the actual practice. The monitoring modalities are not well defined, as well as the checking and auditing of the quantities on which the bills issued by the contractors are based. A complete lack of elaborate and realistic system of incentives is shown, in addition to a lack of qualitative technical specifications for the products of SWM facilities.”⁷

⁷ Toward a Decentralised Waste Management Integrated Response in Lebanon (TaDWIR). UNDP. 2023



It is indeed mandatory to identify templates and general rules to run service assignment procedures. The template should be prepared by the National Government mainly by the new foreseen Waste Management Agency. In the present document a (non exhaustive) list of aspects that should be considered while preparing procurement for modern waste management systems. In Table 1 are listed some recommendations for waste management procurements and permitting processes.

Table 1. List of critical issues to be taken into consideration in the contract agreement

No.	Clause	Description
1	Final costs for landfilling should consider end of life closure and functional requalification	In case of contracts that imply infrastructures (MRF, MBT, Sanitary Landfills), it is mandatory to consider the costs for end of life and rehabilitation
2	Final costs for landfilling should be by weight (€/tons)	A standard system based on weight is mandatory to measure and quantify recycled and disposed waste. The use of standard and agreed units is important for data collection, analysis and monitoring and to evaluate waste reduction and recycling. Use of standard units helps on interregional and international cooperation and coordination
3	Street Sweeping vs Primary collection	Procurements and contract must identify a clear division of tasks between street sweeping and waste collection. There are cases in which waste are thrown next to the bins or cases where the waste is scattered around the bins. The procurement for service provision should include both. Ideally the waste collection and street cleaning should be under the same contract and executed by the same company to give the responsibility of waste scattered around bins to the service provider.
4	Use of Standardized systems	The private contractor should have the guarantee that the public will use only standardized bins
5	Follow masterplan national and regional objectives and targets	The service provider should price the service also based on the masterplan targets and check the sustainability using best and worse scenarios. The procurement and contract with service providers should ensure flexibility and incentives in achieving MP targets.
7	Schedule for special conditions	The contract with the service provider should specify a special schedule for specific conditions (e.g seasonality and collection in summer, in touristic areas, Ramadan) and should clarify the type of sub-streams or special waste (commercial, car workshops waste, exhausted oil, tires etc.) to be covered.
8	Workers previously working for Municipalities	Where a new modernized and centralized (at UoM or cluster level) waste management system is established, whether implemented by a private or public service provider, it should prioritize the hiring of the staff previously employed by the former system (e.g. if the system was previously implemented by each single municipality).
9	Use of OSCHE (Operational Safety and Health Equipment	Safety and Health equipment should be mandatory at all steps of the waste management procedures. OSCHE equipment should be decided with the parties and respected by the service providers.
10	Clear definition of the terms of payment	Payments to service providers should be done within the year of service.
11	High bond	Service providers should allow monitoring, visits, anytime from local Government staff and MOE and in general by the monitoring entity.



12 Responsibility of the contracting authority (Public) of the citizens behaviors	Clearly identify the conditions under which the behavior of the citizens increase the costs of the service provider; and how the procedure for the latter to claim additional fees.
13 Contract duration	The contract duration should be long enough to allow the private service provider to secure a profitable investment. At the same time, it should be well structured to allow the authorities to change service providers if they are not satisfied with the service.
14 Annual Work Plan	The service provider should send annual and six monthly Work Plan for collection and disposal

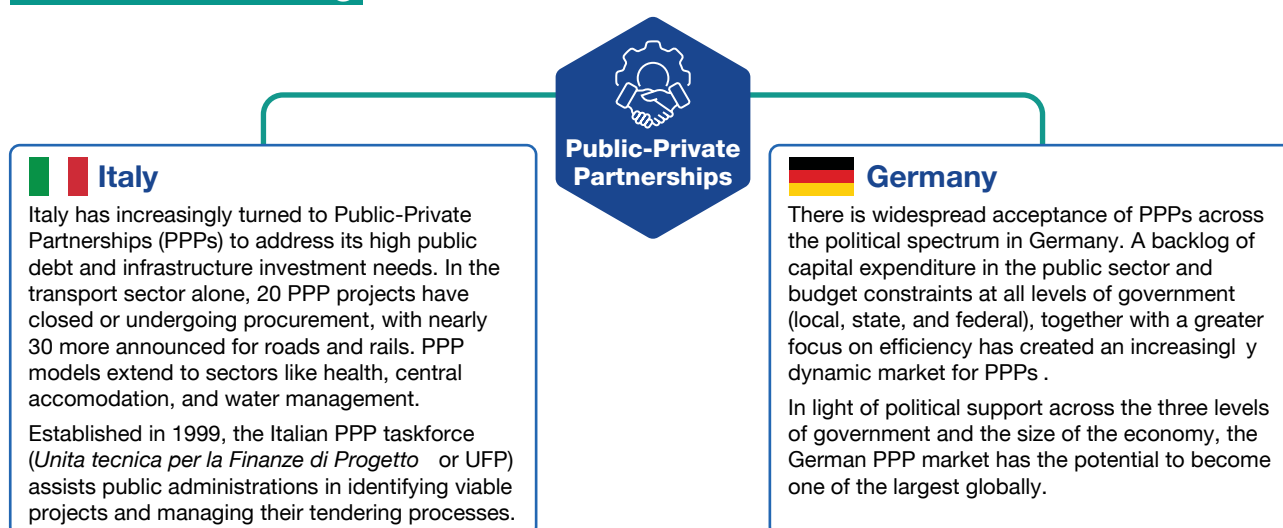
F.1.3. Simplified PPP

PPPs in waste management are contractual arrangements between a public authority and a private company to provide waste collection, treatment, disposal, or recycling services. The public authority usually sets the standards, regulations, and tariffs for the service, while the private company invests in the infrastructure, equipment, and operations. The risks and rewards are shared between the partners according to their roles and responsibilities. In the *Reference Guide from the World Bank*⁸, PPPs are described in terms of three broad parameters: first, the type of asset involved; second, what functions the private party is responsible for; and third, how the private party is paid.

Clustering principles calls for self-sufficiency and sustainability, which means that small municipalities should join the cluster level and participate in consortium or other administrative set up to have waste management system that reach economy of scale. The latter requires partnerships with authorities large enough to guarantee economic sustainability and profit.

At the same time, the National Government should prepare guidelines for the evaluation of the different types of PPP applicable for local authorities, providing the types of PPP feasible in Lebanon and set up an evaluation system, with KPIs that ensure the capacity in terms of governance of every local authority that wants to undertake the public-private partnership path.

F.2. Benchmarking



⁸ PPP Reference Guide Version 3. World Bank. 2021



G.

Technical Note 3.4 – Financial Flexibility

G.1. Description

In Lebanon local authorities are subject to heavy administrative and financial oversight, which results in endemic bottlenecks and backlogs. This is particularly aggravated by excessive paperwork and obsolete procedures, and although local authorities enjoy a great deal of power in this regard, it is the central authority that ultimately has the last say, which considerably delays the process. The problem involves all aspects of the administration, from procurements procedures for rehabilitation of roads and urban public spaces to construction and basic services such as waste management.

In particular the spending limitation become a real barrier when it comes to recruit staff, which is one of the main reasons why local authorities are understaffed and unable to hire enough staff to fulfill all requirements. In fact, 75% of municipalities consider they lack the sufficient funds to hire a sufficient number of workers: 36% of them operate with only one permanent employee; 51% with 2–5; while only 13% count more than 6. As for the federations of municipalities, 21% of them have up to 2 permanent employees while 58% do not have even one. The obstacles to adequate staffing are also bureaucratic and legal. The hiring procedure for municipal employees lengthy (taking up to 1.5–3 years) which negatively affects operations, service provision, and staff workload.

Poor financial resources are a major challenge to service development. In UoMs, the lack of financial resources is a significant structural weakness due to the increasing need for employment and investment (particularly in the waste sector) and the adoption of more modern technical mechanisms (especially in the public outreach sector). Solid waste management solutions may, in some cases, cost a UoM more than its total budget. Higher financial flexibility and creative alternatives to bypass bottlenecks, can be driven by the following:

- amendment of budget-related regulations (e.g. ceiling for purchases that require central approval, allowing addition of a budget item for SWM services), and law amendments to allow municipalities to recruit – which is currently forbidden by the law.
- “legally approved” template for organizational decisions (arar tenfizeh) that allows collection of waste management fees in the absence of (or while waiting for) a ratified cost-recovery law.
- partnering with NGOs or private companies (consultants) to assist in planning, fund raising and technical implementation, in the presence of a law that forbid any hiring at the municipal level.



- UoMs can overcome this obstacle either by privatising some aspects of the service or by entering partnerships with the private sector and associations, which allows them cover some of their expenses and use the support of international bodies to secure additional income for staffing and investment. Nevertheless, these additional funding sources are temporary and unreliable.
- Establish technical units that are independent, and they have their own by-law under which the UoMs can hire employees with technical skills.





H.

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Appendix 1

Field data on...

- About 86% of the studied municipalities dispose of their waste in open dumps, vs. only 14% in sanitary landfills. About 91% did highlight the negative impacts of open dumping.
- Despite the above, 77% of the mayors stated that the citizens won't approve building a sanitary landfill in their town for various reasons, including⁹: fear of propagation of bad odors (17%), potential unsustainability of the project which might turn the landfill into a large dump (14%), lack of confidence in authorities (14%), fear of health problems (12%), among others.

Impacts vs. acceptance of landfills (% Municipalities)

Disposal of waste

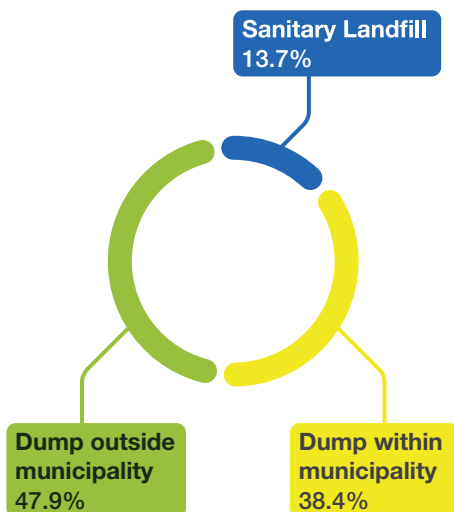


Figure 6. Disposal of Waste

Lifespan of dump/landfill inside municipalities

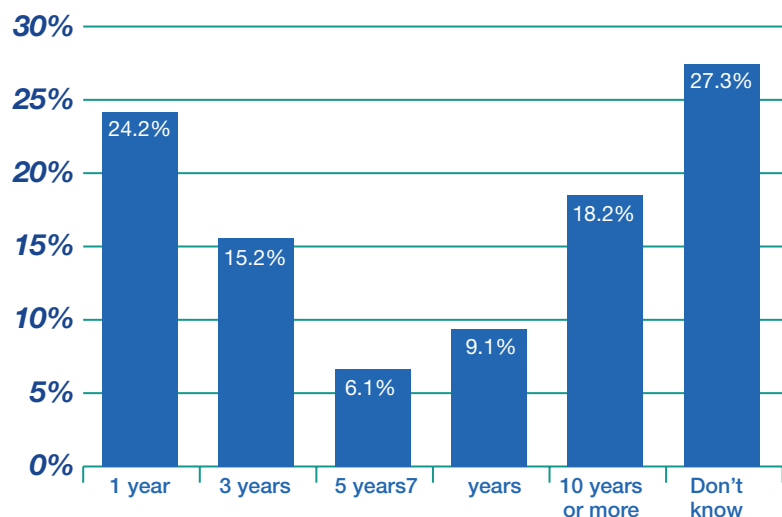


Figure 7. Lifespan of dump/landfill inside municipalities

⁹ The results are not exclusive, i.e. mayors were given the possibility of choosing more than one reason



Citizen acceptance of landfills

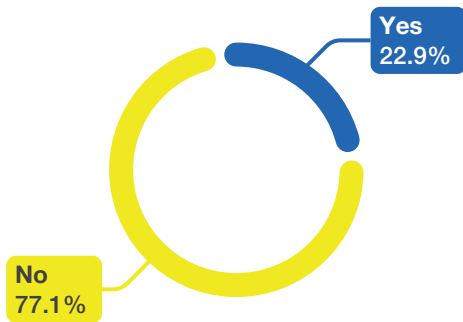


Figure 8. Citizen acceptance of landfills

Reasons for citizens lack of acceptance of landfills

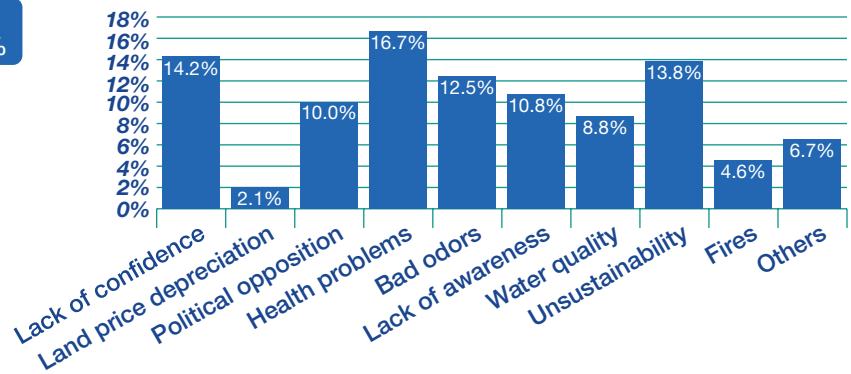


Figure 9. Reasons for citizens lack of acceptance of landfills





Appendix 2

Benchmarking

H.1. Benchmarking on clustering and planning

H.1.1. Germany

Germany is a Federal Republic consisting of sixteen Federal States (Bundesländer). Responsibility for waste management and environmental protection is shared between the national Government, the Federal States and local authorities. The National Ministry of Environment sets priorities, participates in the enactment of laws, oversees strategic planning, information and public relations and defines requirements for waste facilities. Each Federal State adopts its own waste management act containing supplementary regulations to the national law, e.g. concerning regional waste management concepts and rules on requirements for disposal. There is no national waste management planning in Germany. Instead, each Federal State develops a waste management plan for its area.

H.1.2. Oman

Oman Environmental Services Holding Company (be'ah) is responsible for the municipal waste management services in all the **governorates** (Clusters) in Oman. The company has taken over the management of municipal waste services one cluster after the other. In the Royal Decree (46/2009), be'ah has been assigned to over the waste sector. Be'ah is headquarter in Muscat and operating under Oman Investment Authority (OIA).

H.1.3. Italy

Italy is divided into 21 regions. Each one manage waste following National directions and EU directives and regulations. The clustering approach is within each Region. Regions should identify specific ATO (Optimal Territorial Areas), usually the correspond to the Provinces. As soon as an ATO is identified, the Region establish an entity called EGA (Entity for ATO governance). Italy is divided into 57 ATO.

H.1.4. KSA

In 2021 KSA decided to update the national strategy on waste management and to arrange for the implementation of local plans. However, the consultants and professionals at MWAN (National Center for Waste Management) had to review the management of the service areas in order to make the service more efficient. In the preparation that led to the division of the country into 25 clusters, they used GIS mapping by superimposing different layers that corresponded to the principles they followed. The principles were as follows:

Institutional set up: definition of the boundaries based on municipalities, governors, and regional commissions.



Population: will lay over the clustering layers of governance dimension and cluster sparsely population regions with one of the clusters defined by the governance dimension.

Transportation and topography: mountains, rivers, etc. and road networks to ensure topography elements are not divided by clusters and road networks are taken into account for movement of waste.

Waste generation sources: major waste generation sites are grouped with the nearest cluster, if they are not part of an existing cluster.

Other: minimum amount of free land will be considered for waste treatment facilities, transfer stations, etc. to be set up in each cluster, and remaining land will be allocated through fine tuning.

H.2. Benchmarking on cost recovery and alternative funds

H.1.7. Italy and Germany

In Italy, law 147/2013 establishes that the costs of this service must be financed entirely through the waste tax (Tari) paid by citizens. The services that must be guaranteed by the local authorities are related to administration, local police, education, roads and territory, social and nursery among them waste management is the most expensive. According to an estimate, approximately 27% of current spending on fundamental functions is allocated to this essential service. In Germany as well the waste management is self-funded.

H.1.8. Iran

In the Islamic Republic of Iran the the budget for waste management comes from three main sources:

- Direct taxes
- Municipal fines
- Government's direct budget

Direct Tax

There are the website and mobile application for payment the tax.

There is a formula in which the tax is calculated based on several parameters such as average waste generated per person, average waste transportation costs, disposal costs (see Box 1)



BOX 1

Waste tax calculation in Iran Republic

$$C = F \cdot D \cdot R \cdot (C_t + C_d) \cdot E_1 \cdot E_2$$

Where:

C = The amount of tax which should paid by each family for waste management

D = Yearly dars (365)

R = The amount of waste for each day for each person which is average and determined by municipality (0.69 kg/ day)

C_t = Transporting expense (165 Toman/kg, 0.003 Euro/kg)

C_d = disposal expense (78.2 Toman/kg, 0.0014 Euro/kg)

E₁ = Area adjustment factor(0.4 < E₁ < 1.5)

E₂ = Award coefficient (0.7 < E₂ < 1)



This money should be paid yearly and if it would not be paid by families, it will be increased to a 9% penalty each year. If building owners provide official certification from the regional electricity department confirming that the house is uninhabited, the cost of waste management services will not be applied to it.

Municipal fines

Unauthorized changes in building occupancy, where a change in users occurs without obtaining permission, will result in penalties imposed on the owner.

Government's direct budget

which includes taxes, bills, social infrastructure and investments, crude oil and petroleum product sales, and banknote printing. In 2022, the government allocated 1 trillion tomans (equivalent to 18.2 million euros) for setting up recycling facilities and equipment. And also, they placed several collection boxes around the city. People could put their separated solid waste in these boxes and receive currency or discount codes in return.

H.3. Benchmarking on PPP

H.3.1. PPP in Italy

Due to the high levels of public debt and the significant infrastructure investment need in Italy in the past, there has been growing recourse to PPPs. To date, 20 PPP projects in the transport sector have closed or are in procurement and just under 30 further projects in the road and rail sectors have been announced. PPP structures are also being used in the health, central accommodation and water sectors. The Italian PPP taskforce (Unità tecnica per la Finanza di Progetto (UFP)) was established under legislation in 1999 and began operations in July 2000. It provides expertise and assistance to public administrations in identifying projects capable of attracting private sector investment and in tendering those projects.

H.3.2. PPP in Germany

There is widespread acceptance of PPPs across the political spectrum in Germany. A backlog of capital expenditure in the public sector and budget constraints at all levels of government (local, state and federal), together with a greater focus on efficiency has created an increasingly dynamic market for PPPs. In light of political support at all three levels of government and the size of the economy, the German PPP market may become one of the biggest.

