Unlocking Financing for Organic Waste Management: Insights from the Financial Readiness Framework

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Sandra Mazo-Nix, Abt Global:

My name is Sandra Mazo-Nix. You have joined Unlocking Financing for Organic Waste Management: Insights from the Financial Readiness Framework. We welcome everybody for joining. Thank you so much. This webinar is hosted by the Global Methane Initiative (GMI). First of all, some instructions about the webinar. The webinar will be recorded for future posting, and all the participants will be muted. We will have a question-and-answer session at the end of the presentations, but we encourage you to please submit your questions during the webinar. It is on the panel, and I'll show you how to do that. We'll also have an exit poll and a feedback form so you can give us some information about the webinar, what you think about it, so please ask your colleague to fill out the exit poll when the webinar ends. And lastly, the final materials will be posted to the GMI website. We'll also share that with you at the end of the webinar. In order to ask questions, you will use a panel, a button that is located on the right-hand side of the screen. Also, you can find it on top. It says Q&A and you press that and then you will get a little box, and then you will have another box within that that says ask a question and then you can type your questions there as well. All the questions will be moderated and then we will pose the questions to the presenters at the end of the webinar. We have a very exciting panel with us today. We have Klara Zimmerman who is with the Environmental Protection Agency of the United States and will be moderating our panel today. Then we also have Jiao Tang who is Chief Operating Officer from the Catalytic Finance Foundation and Cristina Clopatofsky, who is Program Coordinator with the Catalytic Finance Foundation. We also will have Magda Correal, who's a Senior Specialist with the Inter-American Development Bank, and lastly, we will have Gerardo Canales who is the Director of ImplementaSur. The agenda today will have an introduction to GMI, the Financial Readiness Framework with Klara who will give us that, and then we'll turn it over to our two representatives from the Catalytic Finance Foundation, Jiao and Cristina, who will be talking about financing organic waste management, what are some of the challenges and opportunities, and then we'll turn to Magda Correal, who will talk about what it is like how to go from policy to action for the improvement of organic management and mitigation of emissions, and she will highlight a case study in Uruguay. Lastly, we will hear from Gerardo Canales who will give us some case studies from the recycle organics program that is basically working now around the world. And then lastly, like I said, we'll have our questions and answers as part of the webinar. And with that, I'm going to hand it over to Klara.

Klara Zimmerman, U.S. EPA:

Thank you, Sandra, and welcome everyone. I'm Klara Zimmerman and I'm a program manager at the U.S. Environmental Protection Agency's Climate Change Division. I work on reducing methane emissions from the municipal solid waste sector within the U.S. and internationally. I'm really excited that you've all joined us today, and I'm going to start with just a brief introduction to the Global Methane Initiative known as GMI and the importance of methane mitigation in the waste sector, and then we'll move on to one of our newest resources, the Financial Readiness Framework. First, I'd like to start with a brief introduction on methane and its importance to slowing climate change. So, like carbon dioxide,

methane is a greenhouse gas that traps heat in our atmosphere rather than letting it escape, leading to an overall rise in temperature. Methane is considered a short-lived climate pollutant that only remains in the atmosphere for 12 years, a much shorter timeframe than carbon dioxide, which can linger for a century. This means cutting methane now is an opportunity to immediately slow the rate of climate change, and furthermore, capturing this methane and converting it into clean energy has many energy security and public health co-benefits. The Global Methane Initiative was formed in response to this opportunity of methane reduction and slowing climate change, and we celebrated its 20th anniversary in 2024. GMI is an international public-private partnership that's focused on advancing cost-effective, methane mitigation projects and reducing barriers to the recovery and use of methane as an energy source. We accomplish that mission by providing technical support to deploy methane-to-energy projects around the world. GMI works in three key methane emitting sectors: biogas, which includes municipal solid waste, agriculture, and wastewater, as well as coal mines and oil and gas, and GMI also works with partners to advance the Global Methane Pledge, which is an agreement by over 150 countries to collectively cut global methane emissions by at least 30% from 2020 levels by 2030. The EPA as a founding member, provides in-kind support to develop tools and resources for GMI. So, why focus on the municipal solid waste sector? Municipal solid waste is the 3rd largest source of global methane emissions caused by human activity, contributing roughly to 12% of all emissions in the municipal solid waste sector. Methane is primarily generated through the decomposition of organic waste, for example, food waste and green waste, in anaerobic or oxygen-free environments, such as dump sites and landfills. According to the World Bank, food and green waste make up about 44% of the global waste stream, and that total waste generation is predicted to rise significantly and increase more than 3 times by 2050; therefore, reducing waste sector methane emissions is a key opportunity to mitigate climate change and also deliver these co-benefits like better air quality, improved human health by improving solid waste management systems. In the biogas sector, GMI helps partners and stakeholders overcome challenges to project development by identifying opportunities for emissions reductions, fostering best practices and policies, building capacity and skills to address methane emissions, and developing and sharing technical resources and strategies, which brings us to our newest resource. One of the main obstacles for implementing organic waste management projects that we've seen in our time working on this issue, projects like building anaerobic digesters, composting facilities, and landfill gas capture systems, is securing financing for capital and operation costs. So, to address this, GMI released a new resource in 2024. It's the Financial Readiness Framework for Organic Waste Management developed by the U.S. Environmental Protection Agency. This provides high-level guidance, practical guidance to help stakeholders understand the process for financing organic waste management projects, mitigate potential investment risks, and improve the bankability of projects. You can find the framework now at globalmethane.org and I'll discuss a little bit more about what you can find on the site. So, EPA built this framework with extensive research, consulting with finance experts, and integrating existing resources, and the framework explores measures to improve project bankability and reducing risks. Since it is a general overview, there's always going to be regional factors like national, local policies, available financial instruments, and risk factors that need to be considered when it comes down to individual projects, but this framework is a great way to develop that basic understanding of organic waste project financing through high-level best practices, resources, and case studies, and we built the framework with an intended audience of national and subnational governments, but the information may also be useful for private sector project developers and other stakeholders. Going back to the case studies, we're still building those out, but we do have some new case studies to be presented today from our speakers. Before I hand it over to them, the framework walks you through the steps of project financing,

but the numbers here are more for organizational purposes than a firm sequence. The steps on the left may occur concurrently and often iteratively when it comes to seeking finance. So, the steps we organize the framework into are developing a project plan, assess feasibility, identify and select financing, mitigate risks, secure permits and approvals, seek project funding and finance, and then structure and close financing. Each of those steps includes best practice activities stakeholders can consider, general and sector specific resource links that can provide additional guidance and support, for example, we've included many GMI resources but also existing resources from other organizations such as the UN Climate and Clean Air Coalition, Development Banks, and more. And the case study examples of policies and programs from around the world can help countries learn from others' experiences and like I mentioned, we're excited to feature some additional case studies from our speakers today. So, before I hand it to our presenters, I just want to also mention that the Global Methane Initiative has a wide variety of tools and resources that support methane reduction in the biogas sector, which you can find at globalmethane.org. Please feel free to post questions in the Q&A panel throughout the discussion, and I will turn it over to the Catalytic Finance Foundation, Jiao and Cristina.

Jiao Tang, Catalytic Finance Foundation:

Thank you, Klara. Hi everyone, my name is Jiao. I'm working for the Catalytic Finance Foundation. I'm the chief operating officer overseeing the programs. Personally, also, I've been working in the waste sector for almost 15 years, having focused on my study on it and having worked on technical cooperation projects with cities on capacity building and infrastructure feasibility assessments. We are really keen to share and learn together. Now, I will quickly talk about our foundation. We are a Swiss-based nonprofit foundation. Our mandate and our goal is really to help multiply the amount of capital going into climate projects that are typically deemed by the capital market as too risky in geographies and sectors that are indeed risky and are having a lot of perceived risks and with the waste sector is typically a sector that has indeed a lot of risks and perceived by investors to have risks. So, how we do that, we typically incubate, design, set up blended finance vehicles in different forms. This helps to de-risk at a fund level and therefore being able to attract commercial investors into a fund and that fund will be then used to invest. In two projects that we aim to tackle and secondly at the project level we provide advisory services through technical assistance at project preparation or post-investment. Here, we really help projects to improve their bankability and impacts through such technical assistance. Next slide please. My presentation will focus on, since we don't have that much time, I really want to be focused on a few things. One is really looking from the perspective of private investors, especially in terms of fund investors as you know, investing into projects that owns the project that's why we call them equity investors. From that perspective, I'd like to show you what are the typical challenges that those investors see and also what are the opportunities, but before I start, I would like to just make sure that we are on the same understanding of some of the terminologies. Organic waste is the target of the framework that Klara mentioned and because the financing framework is targeting national and local government, we are talking about municipal solid waste here. Organic waste from municipal solid waste includes kitchen waste, food residuals, and garden waste from private houses or public gardens. Next, and then, in terms of treatment processes, I categorize the processes into two categories. One on top is the proven technologies that can be run at various scales, from small to large, industrial scale. In this category we're talking about biogas production, technically we call it AD, anaerobic digestion. Basically, it's a fermentation process that produces biogas, which can then be purified into biomethane. Composting is another process where we can treat organic waste, organic material, speeding up the

process of biodegradation, and therefore, producing compost and potentially liquid fertilizer as well. The third proven technology is landfill gas capture. I put it as gray because it's not really a treatment process, but kind of the end of the pipeline technology when a city doesn't yet have a diversion program like AD and composting and are currently putting their organic waste into landfills, then at a minimum you can still capture the landfill gas by closing the full landfill and utilizing the gas. Then the second category of solutions is the emerging ones like black soldier fly and biochar. There, there are a lot of projects running on a smaller scale, the community or smaller scale, but we haven't seen really large industrial scale profitable success yet. That's why we put it as emergent solutions, and all of these are mentioned in the Financial Readiness Framework. Next, I would like to set also the way of thinking. So, when we look at ways where we're talking about materials and it's very useful to look at this whole operation from material flow point of view and look at it from mass balance point of view. What that means is that we're really looking at what comes into the process as feedstock. What is going through the process and then what comes out of the process as outputs because that will help us structure the thinking and the design of a project and this was mentioned by the Framework as well in in Step 1: Develop project plan. In terms of feed stock, you could have mixed ways, you could have source separated organic waste, and they will have implications on the business model and on the outputs. We've talked about the processes. I'm going to focus on the mainstream processes, touching a bit upon black soldier flies and outputs are typically things that you can sell biogas, biomethane compost, fertilizers in the case of black soldier flies, potentially insect protein as animal feed. Now, based on this material flow, let's look at the basic financial implications of the operation. On the feed stock, we typically have costs involved in terms of collection, transportation, and administration. You could have some potential revenue by treating the waste from commercial or industrial producers who are obliged to treat their waste by law in certain jurisdictions. Very often that's the case, so that can be a potential revenue source, and this was also mentioned by the Framework as one of the strategies of improving bankability, so you have extra revenue. Treatment processes typically imply costs of operation, maintenance, and administration. And the typical revenue that can be earned here is the so-called gate fee, which is in the case of municipal solid waste, a contract with the municipality that the municipality will pay per ton of waste, how much gate fee, which is the fee that is paid for the service provided. Then on the outputs, generally you have revenue generated, but do not forget there's costs involved in generating this revenue as well, which are marketing, sales, and administration. You can potentially have to cover the cost of transportation of the products and also transportation of final of some of the residual waste that comes out of the treatment processes that are not usable, not sellable. There's always a residual part that you have to send it to the final disposal site typically that's a landfill. If you look at the cost and revenue income expenses in, this way the goal of a bankable project will be from the project level of course there's other costs involved beyond this process level cost but at the core we want to have at least enough revenue to cover the cost and if you want to attract investors there should be more revenue than costs so that's the basics of building a plan. And then, I think this step was also mentioned in the Framework, especially project cash flow as one of the strategies to ensure and improve bankability. Now I would talk based on this Framework, what are the typical challenges that we have seen in the projects that came into our pipeline of work that are for investment consideration that are often considered too risky for investment. From the feedstock point of view, there's very often, and I'm talking primarily in the case of the developing countries context, there's very often a lack of certainty in the quantity and quality for the estimated operational life of the infrastructure. Typically, the life of the infrastructure is 15 to 20 years and extendable. And the investor will look at such a time frame and want to at least secure the feed stock for a minimum quantity guarantee and quality, especially when we talk about source separated

organic waste. Very often that's lacking we very often see fiscal contract at 5 years or maximum 7 years and quite difficult to get a longer-term fiscal contracts. On the treatment operation, there is very often, again in the context of the developing regions, a lack of operational competence because biogas plants and composting plants at the industrial level there isn't enough operational experience, so very often you will have to import such experience and train local staff and there's not enough funding to ensure that there's a sustainable long-term training available. Then secondly, there is a lack of sufficient level of gate fee guaranteed for the infrastructure. So again, in the context of developing countries, the gate fee is very often very low, and we have been looking at the gate level of between $5 US dollars per ton to $10, maximum $20, which is quite low for operating properly managed any waste treatment plants, that's not a landfill. Even a properly managed landfill will cost more than that. That's one of the major challenges. That's also linked to the contract with municipality the length of contract, the quality quantity, and the fee that the municipality can pay. Then on the outputs. As the products coming out of these processes are commodities and products that's depending on market pricing. It's hard to really predict. You can have a range of the price range, looking at the history, but there's always a price fluctuation. It's preferred by infrastructure investors that there's a long-term offtake contract for one main product that secures your majority of the revenue, but very often it's hard to come by, in the context of developing countries. Biogas, biomethane, it's traded on the spot price, compost, you can secure contracts probably for up to one year, but usually not more than that. Those are typically the type of lack of certainty where we're seeing on the revenue side. Then also there's some products there's a lack of market demand for like biomethane. Biogas at a favorable price level if there is not enough enabling environment. So, for example there was a case study that was very well referenced by the Framework of the GMI in India there was a policy to guarantee the offtake of biomethane at a premium price, and this is typically a very good measure to ensure there is an offtake contract for at a premium price. But very often, in many countries, they don't exist yet. At the EU level, there is also premium pricing for biogas, but there are many countries that are on that. And lastly, there are also a lack of products scale, production scale to achieve off-tech contracts, and here, I can use the example of black soldier flies. It's a very interesting technology or method to treat and utilize organic waste values. But currently, because the production scale is not big enough, we are kind of in the chicken and egg situation, at least in the projects we come across that there is significant interest from, for example, pet food suppliers who want to offtake the insect protein to replace their pet food raw material. But the scale is not there, so we shall see once those productions achieve scale there could be an opportunity there and, in the framework, GMI's framework there are mentioned a few strategies to mitigate those risks. I will mention a few. You can try to secure vital guarantee. It's a good strategy. It's often difficult to secure, so you still have to look into the local context on how you can negotiate with your feed stock provider to have such guarantee. Market guarantee, the example of biogas, premium tariff is a good one. Staff training is also very important. We just have to look into where you secure the funding for long term staff training so that the operation is managed also for the long term. There are financial assistance instruments to improve bankability. We are providing, for example, at Catalytic, we're providing financial assistance at project preparation stage to cities or project developers that their projects are designed with less risks. Those are typically grant funded and you can really reach out to certain grant funding to de-risk your project before you bring this to financiers. The previous slides really summarize some of the key challenges and also difficulty to secure the mitigation measures in the context of developing regions that we have seen. There are also some other major risks that are not always necessarily linked to the process level operation. When investors look at projects we typically would need to see if there's PPP law, private public partnership law existing in a country if it doesn't

exist it's really difficult for investors because it's too much risk. There's no legal certainty on ensuring the rights and payments. And then there's also the payment risk from local government, in terms of, paying the service, the so-called gate fee. If the local government has the balance sheet or cash flow managed sufficiently to pay on time and pay as obliged in the contract, this is something that typically will be assessed by investors. Technological risk investors, I would say market investors typically want to use technology that's proven, so composting, AD, landfill gas capture, are lower risks than black soldier fly and other emerging technologies and then there's currency risk if the investor is investing with US dollars or euro or whatever currency that's different from a local currency. This poses a major risk actually, especially in countries where the currency fluctuates a lot. And considering that a private equity investor is a long-term investor for the period of 10, 15, 20 years. The currency depreciation can affect the return very significantly and that's one factor where already is at the beginning of the project financiers say, OK, that is too high, of course, the Framework also mentioned mitigation measures like hedging. Hedging is expensive, so investors will also look at the cost benefit of using hedging, which brings me to the last challenge I want to mention is the political risk, especially due to change of government. What are controllable, what are not controllable, how would it influence the contracts and very often in developing regions it's perceived in certain countries quite high. There is also political risk insurance out there available, I think typically from the World Bank. But again, your project has to be quite big to be eligible, and it's expensive. So again, all the mitigation measures come not free, so there's always a need to see whether it's actually worth it to take the insurance or other measures. Those are the main points in terms of risks that we have seen in the projects. Now, in terms of opportunities, next slide please. Overall, we are seeing there's increasing climate finance and because waste, organic waste especially, has a very high potential to reduce climate emissions, especially methane being a very strong greenhouse gas emission. There's opportunity really to secure more climate finance for waste projects and, as mentioned by Klara earlier, there's also a huge momentum on methane reduction as a result of GMI, which has played a very important role in coming up towards at Glasgow, the Global Methane Pledge. So far there are more than 150 countries being member of it, committing to methane reduction, and the waste sector is one of the biggest contributors to methane emissions, so we see funding opportunities at a high-level big picture out there. And more specifically, I think everywhere in every market, there's increasing market demand for organic products, for agriculture and horticulture, for example, compost, fertilizers. So that's a good opportunity. We also see increasing market demand for sustainable replacement of animal feed from, for example, black soldier flies. They are typically viewed as more sustainable, but this technology or methodology has to still prove itself and scale up potential to reach and meet such market demand. Thirdly, we are seeing more and more governments trying to set up price premium for bio-based energy such as the case mentioned in the Framework of the Indian government. Potentially there will be more willing governments to set up price premium for bio-sourced energy and that will really boost the bankability of waste infrastructure. Then finally, we have not touched upon this, but there can be opportunities from carbon credit markets as well as a potential additional revenue into waste management projects. And with that, I will hand on to my colleague Cristina, who will dive a bit deeper into the carbon credit opportunity.

Cristina Clopatofsky, Catalytic Finance Foundation:

Hi everyone, and thank you, Jiao. I'm Cristina Clopatofsky, program coordinator with Catalytic. I'm just conscious of time. I'll talk briefly through what carbon credits are, what are some of the opportunities

and limitations, and a bit of a practical guide on how to access them as project developers. Next slide please. In terms of what carbon credits are, we have to think of carbon credits as a tangible product, meaning that one verified emission reduction is equivalent to 1 ton of CO2 equivalent emission reduction. Within the space of organic waste, we calculated, roughly that around approximately 1,000 tons of municipal solid waste are estimated to emit, 1,600 tons of CO2 equivalent from methane and, upon verification of this, meet the reductions by a third party, this could potentially be translated into carbon credits, and has the potential to generate additional revenue for projects in the sector. In order to do this, projects need to demonstrate additionality, which means that, the project needs to demonstrate that the project would not have gone ahead had revenue from carbon credits not been available, so that's something that is very important to consider as we move forward. Then, there's different mechanisms through which credits can be traded, including within the compliance and voluntary mechanisms, which I'll touch on in more detail in the next slides. Focusing on the main kind of three main mechanisms that exist, we have the voluntary markets and the compliance markets, which can split into domestic and international. When we speak about voluntary markets, we refer to markets which are unregulated, and which are driven by the need or the desire to offset emissions for sustainability outcomes both by individuals and corporations. Typically, within this market, there are organizations, such as Verra and Gold Standard, which set up overarching frameworks on how this mechanism works, and though there's not a centralized framework, and this means that it offers opportunities such as flexible entry to projects from different sites and lower transaction costs. However, accessing the credit market through this mechanism tends to more price volatility and we've seen a lot of price change over the last few years and so it doesn't really offer a stable pricing. Then, moving on to compliance markets, when we mean compliance markets, these are all that are regulated and whereby entities must meet legally mandated emission reduction targets. Domestically that's either within a country or a region and to meet the country's own NDC targets and so overall this framework, this mechanism offers better regulatory alignment at government driven demands. However, it has limited sectoral coverage because it is not in every country. You can have waste, within some of the eligible sectors. So, some examples of this includes the EU emissions trading system. We also have similar ones in Brazil, in Turkey, and in other places. Thirdly, we have the international compliance markets which is whereby the UNFCCC parties reduce emissions by buying credits from projects in other countries to meet their own NDC. This is what we understand by the Article 6.2 and 6.4, and typically this offers more stable pricing and standardization. However, they do have, it's a much more complex mechanism, which cost more unequal access whereby not every type of project can access this type of support through international compliance markets. We've also seen some regulatory uncertainty. We're still waiting for 6.4 negotiations to finalize and methodologies to be approved. As you see, the existing mechanisms to offer some sizable opportunities, but there's still limitations that mean that not every project can embed these revenues from carbon credits within their business models either because the price is too volatile or because the project cannot register the credits officially. On my next and last slide, I'll take you through some practical steps on how to tap into these carbon credits on a high level. This applies to the voluntary and the compliance markets, and these are really steps that are mostly relevant for the initial steps within the GMI Financial Readiness Framework. As you're thinking through the project plan, the feasibility, thinking about the different finance sources, these are very important to take in mind. First, there's like three main sections within the first step, and there'll be the preparation of documentation. There will typically be stakeholder consultations with local and global players and the preparation of documents for a preliminary review. Then, the project is typically listed in some of the registries, especially in the voluntary markets. And then the project enters a second phase, which is a

phase of verification whereby a validation and verification entity is appointed, and this entity would go through all the documentation, would do a site visit and would make sure that the project is compliant with the registries and methodologies and principles and frameworks. There is then a validation report and documentation which is set for review and once that's approved, it's officially registered within one of these organizations. And it enters the last phase, which is the monitoring. In this phase, it's quite important for projects to follow the monitoring and operations which are described in the different methodologies. Depending on the technology that is being used, there's going to be a different frequency at which the monitoring takes place and from this there comes a verification report which leads to then potential credit issuance which essentially gives the project developer the right to sell the credits either in the market or through one of the mechanisms that I've already mentioned. As you've seen, it's a relatively straightforward process. However, there's a lot of nuances within these different mechanisms, and so we see really carbon credits as being a potential revenue for the sector. However, there's still a lot of gaps and limitations that need to be addressed as well to complement. That's the end of our presentation now. I'd like to give it over to Magda from the IDB.

Magda Correal, Inter American Development Bank:

OK, thank you. Good morning and good afternoon everyone, depending on where you're based. My name is Magda Correal. I work as a solid waste management and circular economy specialist in the water and sanitation division at IDB in the Inter-American Development Bank. It's a pleasure joining today this webinar. I want to share with you a specific case study, the case in Uruguay where we have been financing different measures and programs in the country related to how to improve organic waste management and how to mitigate emissions from this sector. I'm going to explain three of the main activities that, as IDB we have been doing in Uruguay in this specific sector. The first one is related to a policy-based loan that was approved in 2023 and implemented in the last year. And also, the preparation of the food loss and waste reduction strategy that we support to the Ministry of Environment through our initiative called Sin Desperdicio. We are starting the preparation of a project to expand the capacity of the composting plant in Montevideo that we will finance under the initiative, Too Good to Waste. OK, just a brief introduction about the IDB. We are a multilateral development bank that we work in Latin America and the Caribbean countries in 26 countries of the region. And in 2023, the main figure is that we provided almost $13 billion in financing. The main sector that we finance is the infrastructure and the environment, where the water and sanitation division belong, and currently the portfolio is around $24 billion US Dollars. A brief description of the portfolio of the water and sanitation division. Currently we have around 90 loan operations under execution. It totals around $9 billion US Dollars. Most of the operations are related to investment loans. But others are policy-based loans. The example that I will explain today and also we permanently provide technical assistance and technical cooperation to the member countries. I'm going to explain the program, the policy reform loan approved in Uruguay as you may remember that in 2022 and 2023, Uruguay experienced the longest drought for almost 17 months. Many people didn't have access to drinking water during those months. This operation was prepared to contribute to the water security and environmental sustainability in the country with an approach based on circularity and climate change adaptation and mitigation. The operation had two main specific objectives, one related to the water sector to improve the water resource management and water service quality, increasing the resilience to extreme events such as this drought. And the other component or the other specific objective was to strengthen solid waste management and moving to a circular economy approach. OK, so this was the context, the situation that

we had in mind during the preparation of the program. The main challenges that were considered were the lack of operational instruments to mitigate the impact of extreme events, the vulnerability of the drinking water system for human consumption. As I mentioned, almost 2 million people were without drinking water for many months. They had to desalinate water at the time. The impact of this extreme event is totalized around $2 billion in that moment. In terms of solid waste management, still in Uruguay there are inadequate disposal places. Around 35% of waste are disposed inadequate places. The waste management is still based on a linear model where only 3% of waste are recycled and 10% of waste of food is wasted. This was the context that we had in mind for the preparation of the operation. Next, please. What are the indicators of the outcomes that are expected with those reforms that were considered as part of the program, where we are, we are expecting is having cities that can adopt a flood and early warning systems, a project with action for sustainable development that the systems can be more resilient to droughts. The production chains include plans to reduce food losses to introduce in the departments in the regions in Uruguay, more waste recovery plans and to execute investments in solid waste projects. In terms of the indicators, we are expecting to increase the population protected from floodings and droughts to reduce the pollutant load in the surface water bodies to reduce the water losses and to avoid emissions from improving the solid waste management to increase the waste recovery rate. To reduce the inadequate solid waste disposal and to help into the formalization of informal waste pickers, these are the main results expected from this from the introduction and implementation of these policy reforms in Uruguay. Next one please. The component three of the loan operation is specifically related to solid waste and circular economy. It includes seven reforms of policy. One is related to specifically, for example, in publication and adoption and implementation of the national food laws and waste prevention and reduction strategy among other policy reforms that you can see in the slide. I want to move a little bit quick to talk about this strategy through Sin Desperdicio. Through the IDB initiative, Sin Desperdicio, we supported the preparation of this national strategy. This is based in the National Waste Management plan that was also adopted recently in Uruguay. That national plan includes, in the objectives, some related to the food loss and waste management in terms of improving the data and promoting solutions to prevent, minimize, and managing food losses and waste and to introduce a more innovation and entrepreneurship activities. The current situation I mentioned at the beginning of the presentation, and right now the, the food that is lost and wasted is around 10%. It is equivalent to 1 million tons and 66% of that volume is lost during the harvest and post-production process and it represents around $600 US Millions. Next one, please. The strategy adopted for main approaches based on strengthening the public policies to support a more sustainable and responsible value chain and to introduce a vision of food safety in the recovery, distribution, and circularity of food, and also to promote a change of behavior in terms of the food waste. This is just a specific project that we are developing right now in Montevideo. It's a program where we are financing a campaign to promote a change of behavior in the separation of waste at source. We are using and applying behavioral sciences. We are right now developing that campaign expecting to improve the quality of the materials and that the people can learn how to separate and how to take the waste according with the alternative available in Montevideo. We hope to have the results soon. OK, and the last part of the presentation is related to moving from the policies to the action. I mentioned that we launch call for proposals as part of the initiative Too Good To Waste. I don't know if all of you know this initiative. The Bank approved this initiative in at the end of the 2023, and we started the implementation at the execution of this initiative last year and as part of the initiative we launched this call for proposal, which was very successful in my opinion. We received 230 proposals from 20 countries in Latin America and the Caribbean. Around 100 proposals came from national and subnational governments. Around 70

proposals came from operators of solid waste management systems and others, and many proposals came from big cities, such as Buenos Aires, Bogota, Mexico, Montevideo, Brasilia, among other large cities. It was also interesting to see that most of the of the proposals are related to increase or to introduce valorization practices in solid waste management around 200 proposals and the others were related to the prevention and reduction of the generation of waste and others to the biogas capture and closure of current dump sites. Specifically related to Montevideo. We selected the proposal that is to increase or to expand the capacity of TRESOR. TRESOR is a composting plant in Montevideo. They, based on the policy reforms, they anticipated that they need to expand the capacity to double the capacity of the composting plant to be able to manage more waste that they are expecting as a result of this policy reform. With the initiative, we are going to finance the preparation, the structuring of this, of this expansion, a project of TRESOR. Next one, please. So, just a brief context of TRESOR. TRESOR is based in Puntas de Manga. The plant has been in operation for 25 years. They treated organic waste primarily from large generators last year to recover 16,000 tons of organic waste and also, it's very interesting that the plant belongs to the municipality of Montevideo. But in 2017, they created a trust, the municipality with the National Corporation for Development. They created a trust to the operation of the of the plant. Next one, please. You can see a picture of the facility. The land is around 20 hectares. The system is an open-air window composting. They are interested, for example, in moving to a better technology to include a new technology. This is part of the purpose of the project that we will structure this year. Some pictures that you can have an idea of the current project. As you can see, most of the waste comes from the industrial sector and one third are vegetables, crops, and other mowing activities. Next one. They also carry out some quality control activities of the compost with an external lab. For example, they measure the organic matter, nitrogen, phosphorus, potassium, pH, bacteria, and the product. The compost is mainly used directly by the intendencia, but also one portion is sold, and the other one is donated for the other activities. Next one. As I mentioned, the purpose of our project or the project that we will finance this year is how to double the capacity and what is the business plan that they need to implement that expansion to implement that project and to be able to receive more organic waste to be treated. Next one. I think that the financial readiness framework that is presented today during this webinar is very useful. We are adopting this tool as part of the preparation of the TORs and the preparation of the projects we think that the steps and the clarity in terms of the requirements of the projects to make those bankable is very useful just an example of how to we can use this framework in in the project of TRESOR. For example, we are including as part of the preparation of the project, is to run and to develop a pre-feasibility study to analyze different alternative technologies. Biological treatment technologies will be considered to double the organic treatment capacity. If the feasibility study shows that break is feasible, we will move to an assessment of the feasibility of the selected alternative and to identify the possible finance sources via IDB group or other co-investors or other financing institutions. Also, we will analyze the funding and the finance of the project, considering that there is a trust, considering the private involvement, how the private sector could participate as part of the project, considering options of climate financing will be evaluated during the preparation of the project. And also, I want to highlight the analysis of risk that is included in the framework. I think this is very useful. This is a key part of the project to analyze, to identify what are the risks and how to mitigate those risks, not only in terms of operational or environmental risk but mainly in terms of financial and commercial risks that are very well described in this framework. Next one, please. Just to conclude. Thank you. I hope that you have identified how this experience is very comprehensive. We can see how we can finance the policy reforms in a country and how these policy reforms help to make feasible on how to promote the implementation of investment projects. In that sense, we say that we

move from policy to action. And of course, we are always ready to support the region not only Uruguay but all the region of the Latin America and the Caribbean region to improve the solid waste management among other activities in the region. I just want to say thank you and I'll be here to solve any questions that you may have. Thank you.

Gerardo Canales, ImplementaSur:

OK, hello everyone. I'm Gerardo Canales from ImplementaSur, and I will be discussing with you the experience of the Recycle Organics program. The main objective of the Recycle Organics program is to accelerate the implementation of methane mitigation projects in the waste sector and interacts with the other objective which is to create and enable conditions for the expansion of this type of technology. Basically, we aim to accelerate action in the waste sector to reduce emissions as soon as possible to help countries comply with the commitments they have in terms of mitigation, and we know that in order for that to happen in the speed that we need, of course, we need to improve policy frameworks and enabling conditions. For so many years in developing countries in particular, we've been using landfills as our main solution for waste management. And I think in order to speed up the change to a new paradigm, of course, we need to look at the policy framework. These two objectives really reinforce each other. On one hand, we need projects that are pioneers that are the first ones to come, so we can learn from experience. And because we cannot wait until the policy frameworks are completely changed, I think we need to advance on both fronts at the same time. Basically, our approach in order to accelerate action and improve policy frameworks is based on three areas of work. We are working on public policy, most of the countries already have goals in terms of mitigation in the waste sector, also in terms of circular economy. They want to improve their waste management systems, so we help them improve those policy frameworks with better regulation, incentives, looking at tariff schemes which are one of the most classic barriers in developing countries is that the tariff schemes can be improved. Today, the polluter does not always pay and that's one of the main weaknesses of our frameworks for waste management. We look at that type of issues accelerating projects to create portfolios is another of the lines of work that we try to promote. As I said, we cannot wait for a regulation or policy frameworks to be adjusted in order to get into action. In fact, there are already many organic waste valorization projects in the region in the Global South in general at different scales. We want to take those projects and try to expand them, multiply them, and try to get some results in the short term and raising awareness and information sharing is a key aspect of the work. In order to meet the other two objectives, we need to improve capacities. We need to put people in touch with each other. As I mentioned, there are already many successful experiences in the Global South. And that knowledge needs to be spread around and have this multiplying effect. I mean, we share a lot of barriers. I think that we are all starting from the same base, the same situation. The way we overcome those barriers also can be common. Of course, each country has its own particularities, but I think most of the solutions are shared. That's the information that we want to put on the table for all the stakeholders that work with us. The next one, please. Very quickly, the story of recycled organics basically started in Chile in 2017 with support from the Canadian government and now we have expanded collaborating with different stakeholders that have common objectives. I think that the main topic to highlight is that today we have a nice a very strong community of stakeholders that are trying to advance the waste sector in the same direction. I think that is good news and something that we didn't have a few years back. Next one, please. Up to until today, we have been working in around 23 countries in Latin America, mainly the Caribbean, but also a few countries in Asia, Africa, and Oceania, and, and I think,

maybe the key takeaway, as I mentioned earlier, is that we share a lot of common barriers and also that's why I think we need to share lessons and ways to overcome those barriers. This is an example of the approach that we take. We've been working with Saint Lucia for the past couple of years with support from the Canadian Government. Basically, we come in, we do a baseline analysis of what's the situation in the country in terms of waste management, and then look at what's been done in terms of the relationship between waste management and climate change. And then, we develop an action plan based on the needs and the priorities identified by the local government. We run a lot of capacity building activities at all stages. We share with them the work that we have done in our countries, bring examples and in that way, we come up with an action plan to be executed in the 2 or 3 years that the program is working in the country. We also develop an important activity of the action plan is to identify a project portfolio. From that project portfolio, identify those projects that are more likely to be implemented in the short term. We support the search for financing sources for financial support for the projects. After or during the process of developing the portfolio and doing the pre-feasibility analysis, we can identify which are the financial needs for the projects to be attractive. And we get in contact with different financial institutions. Some of them are multilateral development banks, and but also with commercial financing institutions to see what they can offer for this type of projects. Of course, most of the countries already have relationships with certain development banks and we try to see how these projects can fit within the existing financing program. As you can see here, has an example in Saint Lucia, we are working also at the same time in drafting this organic waste management regulation that can also create more positive conditions for investments in this sector. Next one, please. We'll, these are the three main technologies that we work on. Next one. It was composting, biogas, and landfill gas to energy projects. Nevertheless, there are other technologies that could be also implemented in countries like black soldier fly, biochar, thermal drying. There are a lot of technologies available for treating organic waste, and we are not biased to any of those. What matters is that it can really meet the objectives of treating a large amount of organic waste and be economically feasible. So, some of the criteria that we use in order to select the projects to receive technical assistance, and I think a lot of these dimensions are touched upon within the framework of that GMI is promoting, for example, looking at emission reduction potential. Our main objective is to reduce emissions and move to a more advanced waste management scheme, but emission reductions are very important for us. Land availability is also a central aspect. To have a space where the project can be executed. I mean this can seem very basic, but it's a big barrier in many of the cases. So, we look at that. The strategic priority to look if advancing this type of projects is a priority for the government, for the local government, if there are like social needs related to that, etc. The technical capacity, what's the technical capacity existing in the country. Where is it located? Is it in the public sector, in the private sector, if there is not enough technical capacity to implement more complex projects, where can we find the adequate support for the projects? I think all of that is important. Many times, we work with projects that are already existing maybe at small scale and that's I think very positive in the way that we can understand that there are already some capacities in the country and then we can basically strengthen those and scale up. Compliance with deadlines has to do with the interest, the motivation, the speed from the counterpart in terms of keeping up with the activities of the technical assistance. Replicability: we will be only able to support one or two projects along the way, but we want them to be examples that can be replicated or scale up around the country. Even when we do an analysis of a single project, we try to shape projects that can be replicated and expanded within the country. We look at the business model and the maturity level. The business model has to be economically feasible, right? Even if it's a public project, the government it's already spending money, paying a certain amount per ton. We try to make these projects interesting. Hopefully that the

cost per ton is lower or even generate revenues that didn't exist before the project. Next one, please. Just big picture of how many projects we have supported, the different technologies, how many tons of CO2 could be reduced. I think the amount of funding that has been leveraged by the technical support, I think it's very interesting to look at. The program in the case of Recycle Organics Chile was able to provide some financial support that leveraged additional investments from government and the private sector that to say that sometimes it takes a little bit of investment in order to trigger other investors and other interest to come into promoting these types of projects. Right now, this is the, the portfolio that we have developed in Latin America. Also in SIDS, so you can see that well we can identify a large number of projects, but then the number starts to get smaller as we look into those that are more interesting or more impactful and that are really ready to move to the next phase. The next one, please. This is just a table to share with you some numbers on the portfolio that we have identified in SIDS and the key information that we provide for each of them, right? I mean, the treatment capacity, what's the area that it's needed, the emission reduction potential, the CAPEX, the OPEX, maybe to add here that sometimes the CAPEX is not the main barrier, but the OPEX really. I mean, sometimes normally governments count with funding to do a first investment, but then the maintenance, the operation costs of the facilities could be a big barrier, and I think we should pay attention in that aspect. Adjusting the policy frameworks, adjusting the tariffs framework, it helps a lot. But how, what can we do in the meantime while those policy frameworks are adjusted? I mean, we cannot wait. So maybe some financial instruments should be focused on trying to cover this short-term barrier and support local governments to have enough funding to cover for the operational costs. The abatement costs, it's also interesting to have, how much, what's the cost per ton of CO2 equivalent that should go into a project in order to achieve the climate goals and then the classic indicators of, of financial performance. I'm not going to go into details, but just to show that there are several risks. I think most of them are very aligned with what the GMI framework also identified, and their mitigation strategies and I think the main message here is that most of these risks can be found in the projects that we identified, and the mitigation strategies can be common to many cases. It's good to know that already some mitigation strategies have been implemented. There are already successful examples in the Global South that can be taken into consideration when mitigating the risk in the projects that you might face. The next one, please. So, a couple of examples in, for example, in Talca. I think this is a very interesting example of a project that receives some technical assistance and today is becoming an example in Chile is this is the case of a municipality that has their own landfill. They are the largest municipal composting plant in Chile at the moment. We provided support for the technical analysis for the economic analysis. Also, the program was able to provide some technologies, forced aeration membranes as a donation to the program, to the project to get started. And I think one of the main learnings from this project is the collaboration with the private sector. Basically, the municipality will be doing the investment. It's doing the investment in the infrastructure, but then the operation of the plant is going to be handed to the same private company that operates the landfill. That company also will need to cover some of the operational costs for the facility and, of course, it's receiving the tipping fee from the municipality. In that way, we can have an efficient, treatment of the facility. The cost of operation can be shared and properly covered. There is a co-benefit for the private company because they will be forced to learn how to operate a composting plant. They will also expand their own capacities, and they will be able to replicate the project around the country. The other example is related to home composting very quickly. This is a fast way to get people involved. We know that waste management behavior is the key factor. We need to change the minds of the generators and, of course, home composting programs may not

have a huge impact in terms of emission reductions, but they can be a contribution in terms of paradigm shift.

Klara Zimmerman, U.S. EPA:

If the speakers could come back on camera, we could get to a few of the questions and thank you so much. We'll definitely post the slides which have some of the rest of Gerardo's great content. One of the ones I wanted to touch on from the chat: one of the things that we struggle with from a long-term perspective is how to ensure a transition towards a more circular economy. So how do you integrate some of those more like long-term project risks that even get to the point of upstream technologies and policies that are reducing the amount of organic waste? Did anyone want to touch on that? I know it's a big question.

Jiao Tang, Catalytic Finance Foundation:

I can go first. I think is a question we can spend another one day to discuss, because it's very often raised. The locking effect of having a guaranteed amount of waste feeding to infrastructure. I think the concern is very valid in the world we are in. I would also continue with Gerardo's kind of example while we wait for policies and long-term planning to be put into place and in many cases, they take quite a while, quite a few years, in every country while at the same time wastes are being generated every day. So, I think there is a trade-off to be made. What we can and should achieve now, especially in terms of the climate emergency, the organic waste is creating daily methane emissions into the atmosphere. I think one point is that we need to make a trade-off at some point for not only investors, even if the infrastructure plan is funded by government bodies, it's taxpayers' money. You want to use that money sufficiently if you build a plant and that plant is not going to be fully utilized, and then in 5, 3, 4 years it's changed ideally into another plant. It's not sufficient use of capital and in the case of investment, you know, you don't, if investors don't get the certainty that breakeven will happen, there's no infrastructure to be built. Then secondly, I do think that this kind of vision needs to be in place by governments. We need long term planning on envisioning after this operation of an infrastructure, let's say 15 years in 15 years, in 10 years, after the concession, what will be the new reality? What will be the mandate for a new kind of system to be in place and I think there are a lot of things one local government can do. However, I think in a lot of local governments, the change of government very often means change of direction, so there's a bit of uncertainty on ensuring long-term vision being held up towards a more sustainable, more circular, and reduced waste world. And thirdly, and this is my last point, I think we also have to look at the context of the locality. If we look at Africa, for example, the population is growing and it continues to grow by 2050, so naturally with the growth of population waste amount will grow whereas if we look at Europe, there's a lot of potential to reduce the total amount of waste being produced.

Klara Zimmerman, U.S. EPA:

Thanks, Jiao. Would others want to weigh in on that question?

Gerardo Canales, ImplementaSur:

I could add something very quickly. I think we are just scratching the surface of the issue. I think in our countries probably we are, I don't know, 1% of the organic waste, which is, we know, that it's 50% of the total amount of waste, at least urban waste that we produce every day. The challenge is huge, but long-term signals are important, so that's why having a strategy, having goals can inform the private sector and the financial institutions. If a country says OK, we have a goal of 30% organic waste diversion by 2030 and 60% by 2040, for instance, now Chile recently announced that there will be a ban on disposal of organic waste into landfills. That's already a very strong signal for the private sector for them to prepare for the next phase. There will be landfills that they have landfill gas to energy projects. They can already be informed that less organic waste is going to go into the landfill, but valorization projects are going to be prioritized. So, they might start thinking actually we are seeing it landfills that use that today they use the gas to produce energy. They are building composting plants on the site. Also, because they are receiving not only municipal waste but also industrial waste, they have more than enough organic waste and they cannot put sludge, for instance, into a landfill because of the structure issues that could happen. I think the sooner that countries can agree on their policy frameworks and the future regulation, I think that's the best way to reduce risk and provide good information for investors, I mean to make decisions for the future.

Klara Zimmerman, U.S. EPA:

Thank you, Gerardo. Magda, I'll give you a chance to also weigh in if you'd like.

Magda Correal, Inter American Development Bank:

I think that we need to work in parallel with a prevention initiative and also as Gerardo explained how these projects, in terms of change of behavior in the population. Also, working directly or sooner with large generators of organic waste I think it can help to make feasible the projects in the short term. All of these measures are part of, for example, the projects that we are working on, and I think the message is very important. The message of the question is very important. We can think and work in terms of prevention and reduction, and how to improve valorization. I think in the region, we are moving to our valorization, but we need to also include prevention as part of the solutions. And, of course, I think that Gerardo already mentioned the relevance of the policies in terms of restrictions in the disposal of waste. Chile is a very good example of the law that they have been working to restrict the amount of organic waste that can be disposed. Just quick ideas. Thank you.

Klara Zimmerman, U.S. EPA:

Thank you. Sandra, if you could go to the last slide, I just want to thank our speakers so much for the awesome presentations today and really great introduction on finance. I hope you will all check out the framework. Thank you also to the audience for great participation. I'm glad we had time for at least one question, and yes, the slides and materials will be posted. Thank you.