



Report Number : ICRR0021274

## 1. Project Data

**Project ID**  
P114515

**Project Name**  
INTG SOLID WASTE MGT

**Country**  
Belarus

**Practice Area(Lead)**  
Social, Urban, Rural and Resilience Global Practice

**L/C/TF Number(s)**  
IBRD-79320

**Closing Date (Original)**  
30-Dec-2016

**Total Project Cost (USD)**  
46,371,026.35

**Bank Approval Date**  
17-Jun-2010

**Closing Date (Actual)**  
30-Jun-2017

	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>
Original Commitment	42,506,000.00	0.00
Revised Commitment	40,876,398.87	0.00
Actual	40,876,398.87	0.00

**Prepared by**  
Victoria Alexeeva

**Reviewed by**  
Ridley Nelson

**ICR Review Coordinator**  
Christopher David Nelson

**Group**  
IEGSD (Unit 4)

**Project ID**  
P111110

**Project Name**  
Belarus POPs Stockpile Management Projec ( P111110 )

**Country**  
Belarus

**Practice Area(Lead)**  
Environment & Natural Resources

**L/C/TF Number(s)**  
TF-96993

**Closing Date (Original)**  
30-Sep-2013

**Total Project Cost (USD)**  
5,494,627.48



<b>Bank Approval Date</b>	<b>Closing Date (Actual)</b>	
17-Jun-2010	30-Sep-2013	
	<b>IBRD/IDA (USD)</b>	<b>Grants (USD)</b>
Original Commitment	0.00	5,500,000.00
Revised Commitment	0.00	5,494,627.48
Actual	0.00	5,494,627.48

## 2. Project Objectives and Components

### a. Objectives

The project development objectives as stated in the Loan Agreement (p. 5) and the Project Appraisal Document (PAD, p.3) were “to: (i) increase environmental benefits of integrated solid waste management in the City of Grodno through recovery and reuse of recyclable materials; and (ii) strengthen national capacities to manage hazardous wastes associated with Persistent Organic Pollutants (POPs)”.

The Global Environment Facility's (GEF) development objective was identical (GEF Grant Agreement, p.5). A global environmental objective was to reduce environmental and health risks associated with the presence and release of POPs in global and local environments (PAD, p.ii).

IEG assesses the achievement of the project development objective as stated in the IBRD legal agreement.

### b. Were the project objectives/key associated outcome targets revised during implementation?

No

### c. Will a split evaluation be undertaken?

No

### d. Components

**Component 1: Construction of Mechanical Waste Separation Treatment Facility in the City of Grodno** [subsequently, Materials Recovery Facility (MRF)] (original estimated cost: US\$37 million, to be financed from IBRD loan; actual cost: US\$32.5 million) aimed to reduce amounts of deposited waste; recycle, extract, and reuse valuable materials (e.g., plastics, waste paper, metals, glass), and increase landfill service life. The component included the design and installation of a 120,000 ton/year modern mechanical separation plant, to be constructed adjacent to the existing municipal landfill, to recover recyclable materials from household and commercial waste.



**Component 2: Waste Separation Management Improvements** (original estimated cost: US\$4 million, to be financed by Government; actual cost: US\$8.3 million financed through cost savings achieved under the IBRD-financed portion of the project) aimed to sequence improvements to source waste separation so the mechanical solid waste separation facility receives higher quality dry input materials to process. The component included provision of goods and consultants' services to improve the collection of separated waste in the City of Grodno, including carrying out of public information and awareness raising activities. It was anticipated that this component would be implemented in the first two years, in time to provide improved source-separated materials for the mechanical waste separation treatment facility under component 1.

**Component 3 (GEF): Persistent Organic Pollutants (POPs) Stockpile Management** (original estimated cost: US\$26.7 million, of which US\$5.5 million financed by GEF Grant and US\$20.6 million financed by Government and other resources; Actual cost: US\$36 million). The component was designed to align national environmentally sound management (ESM) of POPs with Belarus' obligations under the Stockholm Convention and to implement priority actions under the National Implementation Plan (NIP). This component financed (1) Risk reduction of POPs Stockpiles and Wastes; (2) Technical Support for Capacity Development; (3) Institutional and Regulatory Strengthening; (4) Management of the POPs component. POPs stockpile management activities included: capturing and securing storage of POPs stockpiles and waste; removal of priority POPs (i.e., DDT) from a major burial site; environmentally sound management of disposal of priority POPs; and support to development of institutional, technical, and infrastructure capacity to manage POPs.

**Component 4: Project Management and Support Activities for Components 1 and 2** (original estimated cost: US\$2.65 million, actual cost US\$2.61 million). The World Bank would finance US\$0.4 million for Project Coordination Team (PCT) staff and equipment, office incremental operating costs, audits, and training. Government would finance monitoring and evaluation, including surveys, and other in-kind, operations and maintenance costs.

**e. Comments on Project Cost, Financing, Borrower Contribution, and Dates**

**Project cost.** The total project cost was US\$69.75 million as compared to the appraisal estimate of US\$75.44 million, according to the PAD (pp. i; 37) [The original total cost estimate indicated above in Project Data does not reflect the cost indicated in the PAD at appraisal].

**Financing.** The project was financed through an IBRD loan of US\$42.506 million and a GEF grant in the amount of US\$5.5 million. The loan was disbursed at US\$40.88 million, and the GEF grant was US\$6.28 million at closure. Under GEF component 3, international sources (UNDP, SIDA, NATO) provided parallel complimentary finance for POPs management in Belarus.

**Borrower contribution.** The Borrower committed US\$27.43 million. US\$4 million under component 1. Under component 3, US\$20.6 million financed from the Government and enterprise resources, of which US\$5.5 million was financed by GEF and the remaining US\$30.5 million by the Government and in-kind contributions from enterprises and beneficiaries



**Dates.** The original closing date was extended by six months from December 30, 2016 to June 30, 2017 at the time of project restructuring in 2016 to provide additional time for installation and testing of the MRF (by design, the project envisaged that the plant would operate for about one and a half years before the project closure). The project was also restructured in 2015 to change the financing plan and finance Component 2 out of the IBRD loan proceeds instead of the Government contribution, due to savings under the IBRD-financed portion.

### 3. Relevance of Objectives

#### Rationale

The project development objectives were relevant to the government priorities for environmental protection, including through improved solid waste management. At the time of project conceptualization, Belarusian cities were facing increasing quantities of solid waste generated from residential, commercial and industrial sources. Belarus prioritized the management of chemicals and movement of trans-boundary pollutants, in particular those that caused potential harm to local and global human health and the environment. In 2004, Belarus ratified the Stockholm Convention on Persistent Organic Pollutants (POPs) and in 2007 undertook the required development of a National Implementation Plan (NIP) with the support of the Global Environmental Fund (GEF) and the World Bank. In 2017, the government approved National Solid Waste Management Strategy (2017-2025).

The PDO remained relevant to the World Bank Group's Country Partnership Strategy (CPS) for Belarus FY14-17, which stressed low recycling rates, large amount of waste disposed at landfills, and non-sanitary disposal practices and specifically aimed at reducing amount of waste disposed at landfill and higher rates of material recovery from solid waste. The World Bank Group's Country Partnership Strategy for Belarus FY18-22 informs that the government continues to focus on environmental protection, including through improved solid waste management. The Municipal Waste Management Program sets to minimize landfill disposal with recycling of at least 25 percent of municipal solid waste by 2020. No technical or operational support was identified in this area of the WBG (CPS FY18-22).

#### Rating

High

### 4. Achievement of Objectives (Efficacy)



## **Objective 1**

### **Objective**

Increase environmental benefits of integrated solid waste management in the City of Grodno through recovery and reuse of recyclable materials.

### **Rationale**

The key assumption underpinning the project was that the construction of a new mechanical solid waste processing plant would help reduce waste volumes for landfill disposal and recycle valuable materials efficiently, thus increasing environmental benefits of SWM.

### Outputs

- A new recycling plant (MRF) was constructed in Grodno. The plant was commissioned in 2017. Operations were handed over to Unitary Enterprise ‘Grodno Facility for Recycling and Mechanical Separation of Waste,’ which was established as a separate legal entity responsible for waste treatment and disposal.
- 9,000 source separation (recycling) containers and 54 waste trucks were purchased (ICR, p. 50). Equipment was upgraded to improve waste separation at source (ICR p.44).
- A public information campaign was carried out by the Government of Grodno to increase citizen’s awareness and understanding of the need for proper recycling of materials at the household and building levels. It included more than 400 community meetings, TV and other media information programs, theater performances in all schools and children’s summer camps (ICR, p.28).

### Outcomes

- 23,632 tons of industrial and/or municipal solid waste were not buried in landfill, surpassing the target of 20,000 tons. This number incorporates recyclable materials extracted by the MRF, including plastic, paper, glass, wood, bulky items, C&D waste, glass collected by individuals from glass containers, and paper collected by individuals from paper recycling containers.
- 3,585 tons of valuable material were sold by the new facility. This was significantly below the targeted 10,000 tons, as reported, due to scavenging of recyclables directly from source separation containers and depositing them (glass and paper) for payment at recycling centers. The ICR (p.14) notes, from 2016 to 2017, when the waste separation system was rolled out, there was an 86% increase of volume of paper and 117% increase in glass deposited by individuals. If this glass and paper are added, the sold recyclables would amount to 9,500 tons. Also, an Extended Producer Responsibility (EPR) scheme not envisaged at project design, contributed to a decrease in volume of waste flowing to the MRF. The EPR



system incentivized commercial businesses to direct their pre-sorted waste towards recycling companies, so that the recyclables can be 'counted' against businesses' EPR mandated targets.

- The coverage of recycling within the city of Grodno was expanded from 40% at inception to 100%, as targeted.
- Grodno residents aware of Grodno's solid waste separation program reached 85% by June 2017, according to the research conducted by Grodno University (target was 80%).
- 84.4% of residents and 92% of commercial entities are reported to participate in the source separation program, as compared to the target of 80%, according to the information received from the project team (E-mail to IEG 09/10/2018).
- The operating ratio was 1.4, which was calculated as revenues over costs, including government subsidies, in line with the target of above 1. The ICR (p.23) however adds that this ratio proved difficult to calculate, due to the institutional structure and general business operating environment.

### **Rating**

Substantial

## **Objective 2**

### **Objective**

Strengthen national capacities to manage hazardous wastes associated with Persistent Organic Pollutants.

### **Rationale**

Technical assistance and training were planned to help the Government to strengthen the GOB capacity to manage hazardous wastes associated with Persistent Organic Pollutants, as measured through increase in the amount of POPs and PCBs (polychlorinated biphenyls) destroyed or disposed in an environmentally sound manner.

### **Outputs**

- A long-term PCB phase-out plan was developed and approved by the Government.
- Technical assistance activities included update of PCB inventories; training of local experts in POPs monitoring, assessment of 21 contaminated sites were assessed (versus 5 planned); update of methodologies.
- 10 educational events were held (workshops, round table discussions and public hearings).
- Source specific inventory of unintended releases was partially done for 39 largest enterprises; investment options for mitigation of unintended POPs releases were not defined.



## Outcomes

- Belarus maintained its obligations under the Stockholm Convention on Persistent Organic Pollutants (POPs), as targeted under the project.
- 8,340 tons of POPs and POPs waste were destroyed, disposed or contained in an environmentally sound manner, as compared to the targeted 5,757 tons.
- 2,926 priority POP stockpiles were disposed in an environmentally sound manner, as compared to the targeted 1,800.
- 7,068 POPs pesticides were recovered, packaged in storage or destroyed (target 4,486). Baseline was equivalent to 3,472 tons of POPs pesticides in unsecured storage or burial sites and 892 tons of priority obsolete pesticides in Slonim and 43 tons in Lida, and including 450 tons of DDT. Due to the substantially larger quantity of POPs pesticide wastes extracted from Slonim landfill (and 7 tons more at Lida), the end target was exceeded by 37%.
- 823 priority PCBs were destroyed. The ICR reports that no disposal had been undertaken at baseline. An additional 7 tons of PCB waste were destroyed slightly exceeding the target. Final 823 tons destroyed represents 17% of the total amount of PCBs in Belarus eliminated including that remaining in service.
- 127,260 people avoided exposure to POPs, above the target value of 100,000 people.

## **Rating**

Substantial

## **Rationale**

The achievement of both project objectives is rated substantial. The overall efficacy rating is substantial.

## **Overall Efficacy Rating**

Substantial

## **5. Efficiency**

### *Economic analysis*

The ex-post economic internal rate of return (EIRR) for construction of the MRF and the purchase of containers and trucks (60% of the total project cost) was estimated at 10%, with a net present value (NPV) of about US\$11.8 million, as compared to the ex-ante EIRR of 15%, with a NPV of about US\$ 8,086 using the PAD exchange rate. The cost-benefit analyses followed the same methodology, with project benefits assumed to include: estimated revenues from sale of recyclables, social benefits of reduced CO2 through



recycling and avoided costs of landfilling. The EIRR calculation took into account the costs to construct and install the MRF, purchase source separation containers, and purchase waste transport trucks. Sensitivity analysis was undertaken at completion to show the impact on economic return of (i) revenues equaling operating costs each year; (ii) adjustments in costs and tariffs; and (iii) costs increases. If the revenues are adjusted annually by the government with the goal of cost recovery only, the only benefits to be calculated are the positive environmental externalities of avoided GHG and landfilling. The NPV in this scenario is small and the IRR is close to the social rate of return. Other scenarios suggest that the NPV estimates are very sensitive to the price of recyclables and the efficiency of the operation. Significant economic gains disappear if costs increase by 5% per year. Similarly, if the recycling rate (the diverted recyclables as percent of the total waste) does not continue to improve, even with some reasonable expectations of tariff and subsidy increases, the IRR is very close to the social discount rate of 6% and results in a small negative net present value (ICR, p.18).

#### *Financial analysis*

The financial analysis showed that over the next 20 years, the MRF will cover its operating costs and estimated that the discounted flow of future revenues and costs amounts to US\$ 23.2 million. However, this will not be sufficient to cover the initial investment for the plant of US\$ 32.5 million. Thus, the financial IRR is about 2% and the financial NPV is negative.

#### *Cost effectiveness*

The Persistent Organic Pollutants (POP) component (38% of the total project cost) was evaluated using two approaches – an incremental reasoning at baseline and completion, and a cost-effectiveness analysis. The incremental cost method takes the difference between "business-as-usual" scenario outcomes without project and the incremental benefits and costs with project. The POP component was found to be efficient because it leveraged a substantially higher amount of co-financing than anticipated at appraisal (US\$9.29 million more in counterpart funding) and because the cost per ton of POP destroyed at completion was lower than the cost estimate at appraisal. The average cost-effectiveness value of collecting, transporting and destroying the material was \$1,545/ton instead of the estimated value of \$2,201/ton at appraisal (ICR, pp.50-51). The ICR (p.19) adds that significant variations in the cost estimates of up to \$3,023/ton - \$5,525/ton are possible if factoring in the costs of excavation of obsolete POPs pesticide wastes or of equipment replacement.

#### *Operational efficiency*

The ICR reports that there were no cost overruns but there was a delay of six months due to a combination of factors, including low readiness at appraisal, a failed tender process for the supply and installation contract to construct the MRF in Grodno, requests for revisions of technical design, frequent changes in authorities, and procedural difficulties related to the issuance of a Letter of Credit (Restructuring Paper 2016; ICR p.25).

Efficiency is assessed as modest, due to lower returns than anticipated at appraisal, and as the ICR adds, lower than other recent projects in Belarus and Argentina, as well as operational inefficiencies.

## **Efficiency Rating**



Modest

a. If available, enter the Economic Rate of Return (ERR) and/or Financial Rate of Return (FRR) at appraisal and the re-estimated value at evaluation:

	Rate Available?	Point value (%)	*Coverage/Scope (%)
Appraisal	✓	15.00	60.00 <input type="checkbox"/> Not Applicable
ICR Estimate	✓	10.00	54.00 <input type="checkbox"/> Not Applicable

\* Refers to percent of total project cost for which ERR/FRR was calculated.

## 6. Outcome

Relevance of the objectives is rated high. In terms of achievement of objectives, the project helped substantially increase environmental benefits of integrated solid waste management in the City of Grodno through recovery and reuse of recyclable materials; and strengthen national capacities to manage hazardous wastes associated with Persistent Organic Pollutants (POPs)". Efficiency is rated modest for lower returns than expected and some operational inefficiencies. The overall outcome is moderately satisfactory.

### a. Outcome Rating

Moderately Satisfactory

## 7. Risk to Development Outcome

*Financial.* The plant's financial viability is at risk from potential changes in prices for recyclables as well as from tariffs set at below cost recovery levels. A decrease in market prices paid for recycled glass, paper and other recycled materials would affect the financial viability of the MRF. To help mitigate potential impact on financial sustainability, the MRF would need to get more efficient in terms of lowering its cost of operations and raising the volume of recycled material its able to capture and sell per ton.

*Government commitment.* Sustainability is impacted mostly by governmental policy efforts to encourage recycling and reduce landfilling. The National Solid Waste Strategy of Belarus adopted in 2017 envisages gradual reduction in landfilling along with corresponding measures to encourage recycling, reuse and recovery of waste. The Grodno authorities have indicated that their public communication campaign will continue, with a special focus on schools and educational facilities.



## 8. Assessment of Bank Performance

### a. Quality-at-Entry

Project design incorporated lessons learned from international experience, particularly in Europe and Central Asia, other Bank SWM operations, and the Global Environmental Fund (GEF)-financed hazardous waste management. The design included information campaigns and targets for awareness and participation by the population in the recycling program. The POPs Component greatly benefitted from the Belarus process of developing and approving the NIP and subsequently from a GEF project preparation grant (PPG), amounting to approximately six years of upstream study and analysis.

The fiduciary, safeguards and M&E arrangements were adequate. A few shortcomings at appraisal included:

- The project team underestimated international investors' and contractors' problems including: lack of awareness and perceptions of country and sector-specific risks; lack of comfort and awareness about institutional capacity; regulatory framework; and local dynamics in a market relatively closed to international investors. This led to a failed initial procurement and contributed to delays in implementation (ICR, p.1).
- The project restructuring paper 2016 refers to low readiness at appraisal, as one of the factors that contributed to delays.
- The design did not directly address regulatory reforms in the sector, as described by the ICR (p.30)

### Quality-at-Entry Rating

Moderately Satisfactory

### b. Quality of supervision

Supervision missions were carried out biannually. The ICR (p.30) states that performance reporting was candid, as problems and issues were identified and recorded in the ISRs and Aide Memoires, which were shared with the Government. In the context of low disbursement ratio almost three years after effectiveness, the Bank supervision team downgraded the rating of progress toward achievement of PDO to Moderately Unsatisfactory. The Bank put a strong emphasis on responsiveness, monitoring indicators and expeditious project implementation to meet POPs critical disposal milestones. The project team paid special attention to encouraging Grodno officials on importance of investing in the public awareness and more proactive about communications.

The ICR recognizes that the project team should have been more proactive on supporting the government with regulatory reforms in the sector, and efforts were not sufficient to avoid procurement delays in the MTF.

### Quality of Supervision Rating

Moderately Satisfactory

### Overall Bank Performance Rating



Moderately Satisfactory

## 9. M&E Design, Implementation, & Utilization

### a. M&E Design

The M&E design was adequate with proper linkages between outputs, outcomes, and the objectives. At appraisal, two results frameworks were separately developed for the IBRD activities and the GEF-financed POPs Stockpile Management Component (PAD, Annex 3, 3a). There were two outcome indicators defined to measure the first environmental objective and three outcomes under the second objective of strengthening capacity. Baselines and targets were defined at appraisal.

The ICR mentions that the intermediate indicator of working ratio proved difficult to calculate, given the particulars of the institutional structure and general business operating environment.

### b. M&E Implementation

Results under the POPs Component were monitored regularly by the Ministry of Nature Resources and Environmental Protection (MNREP), as reported by the ICR.

### c. M&E Utilization

The M&E system was utilized for monitoring implementation progress. Tools such as the Mid-term review and Implementation and Status Results (ISRs) reports were useful to track implementation issues and progress.

## M&E Quality Rating

Substantial

## 10. Other Issues

### a. Safeguards

The project has a Category A classification for Environmental Assessment (EA), because it involved: (i) management of hazardous materials and POPs contaminated soils during the proposed POPs activities (Component III), and (ii) civil works related to construction as well as further operation of a sorting facility that will mechanically treat mixed solid waste in Grodno oblast (Component I) (PAD, Annex 10).

Environmental Assessment (EA) was carried out. An Environmental Management Plan (EMP) detailed the mitigation plans during construction of the MRF, and highlighted personnel safety during operations. The EA detailed risks and mitigation plans. MNREP, the agency responsible for national environmental issues,



served as the focal point for POPs handling under this Project and the Stockholm convention. The ICR (p.29) reports that the project remained compliant with the OP/BP 4.01 throughout implementation.

**b. Fiduciary Compliance**

*Procurement.* The ICR reports that procurement was carried out in accordance with the Bank policy, and is rated *moderately satisfactory* due to the challenges in bidding process for the MRF. The MRF contract was tendered twice due to a lack of bid response. According to the additional information provided by the project team, the analysis was conducted by the Borrower for reasons of the tender failure, which were attributed to a presumed legacy of uncertainties for businesses working in Belarus. Based on the analysis, bidding documents were revised and a broader outreach to potential bidders was conducted, with more information about the country. The second tender was launched 9 months after the first tender, with four companies submitting bids (E-mail to IEG 09/09/2018). Overall, there was a lengthy process for subcontracting of a local design company due to outstanding approvals from local authorities; lengthy process of site investigations to accommodate national regulatory requirements regarding POPs stockpiles, and government requests for re-designs of the specifications for the recycling plant. Due to changes to key government positions in 2013, there were requests to re-consider the selected technical option for the MRF that had been approved by the Grodno authorities in February 2012 – i.e., to reassess whether the MRF should eliminate manual waste separation and whether it should be designed to produce refuse derived fuel (RDF), changes that would have required significant revisions to the bidding documents. The analysis determined that the proposed changes wouldn't be economically viable – and the proposal was dropped.

*Financial management.* The ICR (p.29) reports that quarterly interim unaudited financial reports were submitted to the Bank for review within the agreed time frame and there were no inconsistencies for follow up. Interim unaudited Financial Reports (IFRs) were submitted on time. The audit company, FBK-Bel, issued unqualified audit opinions on the project financial statements.

**c. Unintended impacts (Positive or Negative)**

---

**d. Other**

---

**11. Ratings**

Ratings	ICR	IEG	Reason for Disagreements/Comment
Outcome	Moderately Satisfactory	Moderately Satisfactory	---



Bank Performance	Moderately Satisfactory	Moderately Satisfactory	---
Quality of M&E	Substantial	Substantial	---
Quality of ICR		Substantial	---

## 12. Lessons

Four lessons were selected from the ICR, with some modification of the language:

- The latest, more advanced technologies may distract decision-makers from recognizing more cost-effective and context-appropriate solutions in the local context.** In this project experience, one of the factors contributing to a delay in finalizing construction of the planned materials recycling facility was that local decision-makers decided to re-open options, including the idea of refuse-derived fuel (RDF) technology. The World Bank technical team helped educate the decision-makers about cost-benefit considerations of the options, and supported the government in selecting a cost-effective approach most appropriate to the local context. More complex, expensive technology would have made the investments financially unsustainable.
- ‘Educating the market’ may be necessary to anticipate and assuage international investors’ and contractors’ perceptions of country- and/or sector-specific risks.** An investigation of why international equipment suppliers did not respond to the first bidding process to construct and supply the MRF in Belarus revealed that international firms had no prior experience doing business in Belarus, and did not feel comfortable responding to a government tender for goods due to the lack of certainty about institutional capacity, regulatory framework and local market dynamics. In countries with limited private sector investment into the sector, project teams should anticipate potential concerns and proactively reach out to potential bidders.
- The dynamic nature of a country’s sector environment should be taken into account when making projections of a project’s sustainability.** The newly constructed recycling plant under this project is sensitive to potential for reduced flows. Two unanticipated factors contributed to lower flows: Scavenging of glass did not occur in any meaningful volume at the time of project design, likely because pre-separated waste containers did not exist and the city had not yet started promoting waste separation city invested in waste separation containers and made containers easily accessible, suddenly recyclable glass became easy and attractive to scavenge; as such, less glass flowed to the MRF. Secondly, an Extended Producer Responsibility (EPR) scheme not envisaged at project design, contributed to a decrease in volume of waste flowing to the MRF. The EPR system incentivized commercial businesses to direct their pre-sorted waste towards recycling companies, so that the recyclables can be ‘counted’ against businesses’ EPR mandated targets.



- **Multi-channel and ongoing public outreach and information campaigns are critical to promote participation in recycling.** Since the viability of the MRF is dependent on the quality of inputs, this project was dependent on the participation of a high percentage of residents and businesses in waste separation at source. The government deployed various approaches for getting its message out about the benefits of recycling, and how the new program worked (in terms of closing trash chutes in residential buildings ) as well as targeting schools and educational institutions.

### 13. Assessment Recommended?

No

### 14. Comments on Quality of ICR

The ICR is outcome oriented and provides a good analysis of factors that affected the project's results and issues that affected project implementation. Efficiency analysis in Annex 4 offers an adequate detail and data. Lessons are evidence -based, thoughtful and useful for other similar operations. The ICR is not, however, internally consistent. For example, on page 1 in the executive summary, it reports the risks that were underestimated, and on page 30 in Bank Quality at Entry, it says that the risk assessment was appropriate, as were the proposed mitigation measures. The ICR does not discuss the relevance of the objective to the most recent CPS FY18-22 that was current at project closure. It could provide more detail on mitigation measures and issues for a Category A safeguards project.

Proofreading and better streamlining of the report could have helped avoid the following errors: (a) discrepancy in reporting on results: (i) the share of awareness for Grodno's solid waste separation program is reported as 76% in the results framework, but 85% in the main text (p. 14); (ii) the share of population participating in Grodno's source separation program is indicated as 33% in the results framework but the main text (p.14) says that 60% of the population was participating in the source separation program; (b) Rating of Bank performance on page ii is inconsistent with the Satisfactory rating in the main text (page 30). The discrepancies in reporting on results had to be subsequently clarified with the project team.

On balance, the quality of the ICR is rated substantial for the quality of analysis and the formulation of evidence-based lessons, including the availability of detailed annexes.

#### a. Quality of ICR Rating Substantial

