ENHANCING SCHOOL MANAGEMENT AND PLANNING (ESMP) PROJECT

Behavior Change Study

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PROJECT INFORMATION

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Table of Contents

ACRONYMS AND ABBREVIATIONS

A&E	Architect and Engineering
AKDAR	Awareness of the Need for Change, Desire to Support the Change, Knowledge of how to Change, Ability to Demonstrate Skills & Behavior, Reinforcement to Make the Change Stick
DCU	Development Coordination Unit
EQAU	Education, Quality, and Accountability Unit
ESMP	USAID/Enhancing School Management and Planning Project
EU	European Union
FD	Field Directorate
FF&E	Furniture, Fixtures and Equipment
FGD	Focus Group Discussion
FIDIC	International Federation of Consulting Engineers
GAM	Greater Amman Municipality
GBD	General Budget Department
GOJ	Government of Jordan
GTD	Government Tenders Directorate
HDR	Jordan Human Development Report 2015
HVAC	Heating, Ventilation, and Air Conditioning
IT	Information Technology
JEN	Japan Emergency NGO
JOD	Jordanian Dinar
JSEP	USAID/Jordan School Expansion Project
JSP	USAID/Jordan School Project
KFW	Kreditanstalt für Wiederaufbau KfW Bankengruppe
KG	Kindergarten/Preschool
KPI	Key Performance Indicator
MOE	Ministry of Education
MPWH	Ministry of Public Works and Housing
PTA	Parent-Teacher Association
Q&A	Question and Answer
QA	Quality Assurance
QRC	Queen Rania Center for Education and Information Technology
RO	Reverse Osmosis
SDDP	School and Directorate Development Program
SI	School Infrastructure
SKEP	Schools of Knowledge Economy Planning
SMART	Specific, Measurable, Achievable, Relevant, Time-Bound
STC	Special Tendering Committee
UNICEF	The United Nations Children's Fund
USAID	United States Agency for International Development
VO	Variation Order

PREFACE

One key aspect to approaching capacity development within the Government of Jordan's (GOJ) Ministries of Education (MOE) and Public Works and Housing (MPWH) is understanding how to incentivize positive behavior change. This report identifies behavioral factors and practices that impact the planning, implementation, and utilization of schools. The report also identifies challenges, provides an analysis of these challenges, and outlines a forward-facing plan of action.

This report was developed under conditions that challenged the original assessment design as proposed by the Enhancing School Management and Planning (ESMP) Project. At inception, ESMP envisioned an immediate startup partnership with key ministries and collaborative information gathering. The results were intended to be delivered as a shared product whose findings and recommendations were jointly shared. However, startup delays of key personnel prevented formal kickoff meetings with the ministries. Subsequently, the meeting with the MOE was held on July 10, 2019 and with MPWH on July 11, 2019. Set against contractual deliverable deadlines, the project moved aggressively, interviewing 46 individuals and conducting two parental focus group discussions (FGDs). The ESMP team utilized prior assessments and the feedback collected from the interviews and FGDs as the basis of this report.

However, describing behaviors and their effects on public policy and administration is a sensitive subject. ESMP believes it is crucial that the findings and recommendations are shared – and owned – by partners within MOE and MPWH. To that end, ESMP views this report as a first step. After submittal and USAID review, the project will work expeditiously to validate – or revise – findings with government partners and seek a final shared version that is co-authored with both ministries. Going forward, the report findings on behavioral incentives will be incorporated into capacity building efforts.

BACKGROUND

The ESMP Project is designed to improve the Jordanian school management and planning process, as well as the quality of the school environment in Jordan by enhancing the planning, operation, and maintenance capabilities of the MOE and the MPWH.

The goal of the ESMP Project is to provide assessment expertise, technical assistance, capacity building, and training to the MOE, MPWH, targeted stakeholders, and other counterparts to improve existing management systems and procedures used by the GOJ for the planning, implementation, and utilization of public schools in Jordan.

To achieve this goal, ESMP staff will work in close coordination with multiple governmental and non-governmental actors. Within the MPWH, the ESMP team will coordinate with the Government Tendering Directorate, Studies Department, Supervision Department, and Field Directorates (FDs). Within the MOE, ESMP will partner with the Planning Directorate, Building and Maintenance Directorate, Development Coordination Unit, Procurement Unit, Field Directorates, and public schools. Engagement with the private sector is critical to the construction and procurement side of the project, and ESMP will coordinate with architecture and engineering (A&E) firms, construction firms, and local professional Jordanian Engineers Association. Critical to the integration of MOE and MPWH policies and their long-term cooperation is the inclusion of local communities and parents as stakeholders involved in the education process.

This report strives to identify key behaviors in the School Infrastructure (SI) process that, in tandem with increased knowledge and capacity building, can lead to meaningful – and measurable – policy and system improvement. At a conceptual level, and for the purposes of this report, "behavior" represents

the responses or reactions of an individual or organization to a given situation. Behavior, in this case, is observable and measurable. Behavior is also considered in the context of what experts describe as a behavior chain: a sequence of actions as antecedent – behavior – consequence. Antecedents are events or conditions that trigger behavior. Consequences are the result of the behavioral response. So, while many assessments of SI identify policy or system deficiencies, or consequences of government behavior, behavior change should also consider the conditions that evoke the behavior.

One behavior antecedent is culture. Culture represents the beliefs, values, and customs that regulate behavior. For purposes of this study, two distinct cultural layers should be recognized – governmental and societal. Government culture refers to the beliefs and behaviors that determine how ministry employees and management interact. Societal culture is based upon the beliefs, behaviors, and traditions that shape social behavior as a whole.

For example, let us consider the policy consequence of an excessively long project approval process. The behavior creating the consequence may be a government official's reluctance to engage in independent decision-making. The cultural antecedents/triggers for this behavior may be an organizational culture that disincentivizes independent decision-making, which exists within a social structure that is formal and hierarchical.

USAID has long recognized the linkage of behavioral change in improved program outcomes, particularly in areas of reduced infant mortality and HIV. In its publication, *The Behavior Change Framework (2015),* USAID promoted identifying behaviors that offered the highest change impact, calling them "accelerator behaviors." The benefits of accelerator behaviors include:

- High impact

- Influence over one or more other behaviors

- Cross cutting or integrated across multiple technical areas

ESMP will pay special attention to identifying "accelerator behaviors" as high impact opportunities for change, while working with GOJ partners.

1. INTRODUCTION

In the context of SI in Jordan, the past 12 years have witnessed substantial efforts to improve systems and outcomes within the public-school system. These efforts have primarily been aimed at revising policies and improving early childhood education, professional development, and SI. However, most of the interventions related to SI have focused on outputs rather than process outcomes. To this end, indicators have primarily measured the number of schools constructed and expanded rather than measuring the efficiency of the entire process and ultimately, the quality of infrastructure policies, systems, and projects.

In order to identify the root causes of the problem, the ESMP project assessment component is designed to examine the entire SI process consisting of the following seven phases:

- Phase 1: Planning

- Phase 2: Design

- Phase 3: Tendering

- Phase 4: Construction Management & Supervision

- Phase 5: Closeout and Acceptance

- Phase 6: Operation and Utilization

- Phase 7: Maintenance

A key part of the improvement to Jordan's SI process and access to quality education is to identify the key challenges faced in creating an enabling school environment. Therefore, a behavioral change assessment was conducted to scan the various behaviors encountered by stakeholders that hinder enabling school environments to incentivize positive interventions.

The assessment's objective is to identify the behavioral factors and practices that impact the seven phases of the SI process. It identifies challenges, provides analysis of these challenges, and proposes possible ways to address them. The study also includes a baseline data plan and suggested key performance indicators (KPIs) for implementation.

1.1 APPROACH AND METHODOLOGY

The behavioral change assessment was undertaken through:

1. Desk review of documents relevant to the education sector and SI, as well as research materials that provided information on behavioral issues in relation to the SI phases at Jordanian public schools.

2. Interviews with relevant stakeholders including the MOE, the MPWH, and Architect and Engineering (A&E) consulting firms to elicit input regarding behavior throughout the SI cycle, challenges they encounter, and recommendations for mitigating challenges and shortcomings.

3. A full-day focus group discussion (FGD) with A&E consulting firms and contractors throughout Jordan to freely discuss challenges, brainstorm recommendations, and provide an opportunity to share different thoughts and ideas.

4. Two FGDs, two hours each, with parents in East Amman and Jerash governorates to elicit their input on school environment improvement.

This assessment resulted in the following outputs:

1. Key findings throughout the SI cycle

2. Recommendations to overcome identified behavioral challenges

3. Behavioral change framework

4. Baseline data collection plan

5. Suggested key performance indicators

A full list of key informants and workshop participants is detailed in Annexes 1 and 2.

The Behavior Change Study fieldwork/ data collection was conducted from May 5 to July 31, 2019. However, as noted in the Preface, formal GOJ interaction was substantially delayed resulting in a study whose findings and recommendations had not yet been shared with government partners.

1.2 MOE PUBLIC SCHOOLS IN JORDAN

According to the *MOE Statistics Report (2017–2018),* there are a total of 3,835 public schools in Jordan educating 1,378,840 students with 86,627 teachers and 1,399 employees at the MOE Center.

MOE schools are segregated as follows:

1. Type: all-male, all-female, or mixed sex (KG – grade 4)
2. Level: preschool (KG), basic (grade 1–10), or secondary academic or vocational (grade 11–12)
3. Shift: one shift or double shift (whether two abridged school days with rotating classes of children are fit into a single calendar day)
4. Ownership: MOE-owned or rented schools
5. Location: Urban or rural
6. Overcrowded or underutilized schools

There were no significant differences with regard to school distribution/segregation between the past two school years (2016–2017) and (2017–2018). **Tables 1 – 5** show the percentage distribution of schools by type, while **Tables 6 and 7** show enrollment and dropout distribution of students by gender.

Table 1. Percentage distribution of schools, students and teachers by school type at MOE

School Type	Schools	Students	Teachers
All-Male	36%	36%	38%
All-Female	13%	18%	16%
Mixed-Sex	51%	46%	46%

Table 2. Percentage distribution of schools, students, and teachers by education level at MOE schools

Level of Education	Schools	Students	Teachers
KG	0	2%	2%
Basic	68%	85%	78%
Secondary	32%	13%	20%

Table 3. Percentage distribution of schools, students, and teachers by school shift at MOE

School Shift	Schools	Students	Teachers
One Shift	81%	72%	77%
Double Shift	19%	28%	23%

Table 4. Percentage distribution of schools, students and teachers by school ownership at MOE

School Ownership	Schools	Students	Teachers
MOE-Owned	79%	90%	89%
Rented	21%	10%	11%

Table 5. Percentage distribution of **schools, students and teachers** by school location at MOE

School Location	Schools	Students	Teachers
Urban	47%	66%	58%
Rural	53%	34%	42%

Table 6. Enrollment Ratio of **students** by age and gender at MOE

Student Age	Male Students	Female Students
KG (4 – 5)	37.1%	36.0%
Basic (6 – 15)	94.5%	94.9%
Secondary (16 – 17)	64.8%	77.9%

Table 7. Dropout Ratio of students by grade and gender at MOE

Student Grade	Male Students	Female Students
Grade 1 – 4	0.62	0.57
Grade 5 – 10	3.17	3.52
Grade 11 – 12	(Optional)	

2. BEHAVIOR IDENTIFICATION WITHIN THE SI CYCLE

2.1 KEY FINDINGS

2.1.1 PHASE 1 – PLANNING

The MOE bears primary responsibility for the planning phase. The ministry receives funding from multiple donors in addition to the government, assesses the needs for school capacity and buildings, and determines physical requirements for educational facilities. According to interviewees from the MPWH, the MPWH is not involved in the planning phase; they perceived planning as the "core business" of the MOE.

PRIOR ASSESSMENTS

The *USAID School Construction Stakeholders Assessment (April 2015)* identified several organizational behaviors that affect the planning process, as well as the associated consequences. A summary of findings identified organizational behaviors including:

- Staffing level decisions and training resulted in limited planning and management capacity.

- Inadequate strategic planning resulted in suboptimal deployment of multiple funding sources.

- Site selection decision-making based on factors other than empirical data, including favoritism and factors beyond educational needs, resulted in an inefficient distribution of schools between governorates.

- Lack of support for an integrated information system that provides up-to-date information on demographics and school populations, projected needs, and status of construction projects resulted in flawed planning and duplication of effort.

- Poor planning sequencing which failed to identify pre-feasibility issues prior to project initiation, such as permitting, licensing, and land border/ownership issues, resulted in lag times between the planning and implementation stage of up to four years, rendering plans inappropriate or requiring substantial changes.

- Lack of collaboration between stakeholders at the planning stage resulted in delays and changes later in the project, costing time and money.

- Increased interaction with local communities during the planning stage resulted in increased citizen satisfaction and produced higher levels of ownership.

- Government commitment to reduce classroom size and overcrowding resulted in a perceived reduction in school violence.

The USAID Jordan School Project (JSP): A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013) Report addressed the desire of local communities to play a more active role in school design and planning, since they are the ultimate beneficiaries of the schools. As part of its program design, JSP conducted several structured workshops targeted at community members during the early stages of the planning and design phases across all geographical areas.

The reported consequences of this behavior were higher levels of ownership, dedication, and commitment towards the schools. The JSP model presented a new concept of 'community schools' that offered an infrastructure which caters for the needs of community members and created new roles for them within the schools. Through various insights from stakeholders and meetings with local community members, their involvement in the planning stage included three workshops conducted in the early stages of the project. The community members from school locations under consideration confirmed that through these three workshops community members were familiarized with the new school designs, and their requests, opinions, and concerns were collected.

The USAID Jordan Schools of Knowledge Economy Planning (SKEP) Planning and Design Guidelines (October 2015) Report did not address behaviors that need to be changed, however it would be beneficial if the MOE had such guidelines in place to follow, which could hinder negative behaviors and enforce positive ones during the planning phase.

The USAID Jordan Education Assessment: School Construction and School Expansion (September 2018) Report highlighted that respondents to the assessment felt that there was a reduction in violence due to less crowded classrooms. This should be taken into consideration when planning by having a more reasonable number of students in the classroom (not to exceed 40 students).

ESMP INTERVIEWS

ESMP conducted several interviews **(refer to Annex 1)** that validated behavior issues identified in prior assessments. Listed below are several interview anecdotes that provide insights to ESMP's interview findings:

Anecdote 1. There was an estimated need for 120 school buildings in Amman, Zarqa, and Irbid. Based on population, Amman should receive 40% of schools as it constitutes 40% of Jordan's population. However, the Minister at that time requested an equal distribution of schools over all governorates. This policy resulted in the governorate of Mafraq, that has 4.7% of Jordan's population, receiving 13% of the country's new schools. As a result, many schools in Mafraq are underutilized. This shows the impact of several government behaviors, such as:

- Inadequate staffing resulting in poor planning capability

- Poor use of data for planning

- Site selection decision-making based on factors other than empirical data

Anecdote 2. Local community behavior can strongly affect MOE plans to develop central schools that replace several smaller schools, an approach considered efficient in rural areas. In Mafraq, a central school was established in the Princess Basma District. The district contains five rented schools, which were to be merged within the central school. However, citizens refused to move due to tribal tensions.

Interviewees also noted other issues, such as:

- A lack of interaction with local communities during the planning stage contributed to citizens' refusal to participate in a new school model

- Communities' requests for schools to be built without evidence of need

- The government purchasing land from preferred individuals without evidence of need

- A focus on donor funding without subsequent operational funds from the national budget, which does not support sustainability

- A lack of intergovernmental coordination results in poor program implementation

Anecdote 3. Policies and Strategic Planning Directorate requests a specific number of classrooms. However, the designer inserts specialized classrooms, such as computer and science labs at elementary schools, where there is no need, displacing needed basic classrooms.

Anecdote 4. A lack of coordination between field directorates, the MOE, and donors turns a request for a boys' school into a Gulf Fund project building two girls' schools instead (Al Khanssa and Al Andaluse).

Anecdote 5. In response to overcrowding resulting in a double shift school, Arwa bint Abdul Motalib School in the Maraka Field Directorate requested school expansion. General classrooms were the priority, yet limited resources were spent on an auditorium and labs. If the money had not been spent on these other facilities, more classrooms could have been built.

Anecdote 6. The MOE faces coordination problems with other government agencies such as the Greater Amman Municipality (GAM). GAM was described as less than fully cooperative with the MOE in a land acquisition for school buildings in areas that lack government owned properties.

Anecdote 7. A positive example of employee initiative and intergovernmental coordination was described where the buildings section at Alquaismah Field Directorate, frustrated by the slow process of exchanging "official letters," took it upon themselves to coordinate with the Department of Lands and Surveys directly to very quickly resolve land ownership questions.

Finally, according to the parental FGDs conducted by ESMP, schools and classrooms are overcrowded and the number of students is too high. Classrooms are too small to accommodate all of these students, which results in students having trouble focusing in class. Further, due to the student-teacher ratio, teachers are unable to give each student a lot of attention, which results in a lack of teacher-student interactions and eventual loss in motivation on the part of the students.

CONCLUSIONS

Based upon a review of prior assessments and interviews conducted by ESMP, planning phase enhancements or improvements that can result from elevating positive behaviors and curbing negative ones include the following:

- Plans are developed by engaging all relevant stakeholders in a participatory manner

- Decision-making is supported by the availability of up-to-date, accurate, and comprehensive data

- Increased accountability and motivation among MOE staff results in the development of timely and comprehensive plans

- An increased MOE capacity to study market indicators

- Enhanced understanding and knowledge sharing of the adopted planning guidelines and the environmental issues that affect school site selection

- Increased participation and transparency in school site selection

2.1.2 PHASE 2 – DESIGN

During the design phase, the MOE is responsible for reviewing the compliance of preliminary designs with the planning needs and for developing the school buildings design guidelines. The MOE delegates the MPWH to manage the design, construction, or expansion of the schools for which project budgets exceed JOD 250,000.

PRIOR ASSESSMENTS

According to the *USAID Jordan School Construction Stakeholder Assessment (April 2015) Report*, several organizational behaviors that affect the design process were identified, as well as the consequences. The assessment found that:

- A lack of ministerial inertia to update and enforce a uniform set of modern design guidelines resulted in a suboptimal educational environment, poorer student behavior, reduced safety, and increased long term operations and maintenance costs. The lack of comprehensive and uniform

design guidelines resulted in inconsistent design and materials, as well as international donors (USAID, KFW, EU) each applying their own specific school building guidelines. Donors have prepared design guidelines for MOE, for school construction and expansion, without impact.

- Lack of preliminary site visits and early assessments led to designs which failed to consider obstacles such as trees and telephone lines, or slope and soil conditions resulted in serious delays, as these issues were accounted for after implementation has begun.

- Lack of A&E firm knowledge of general safety requirements, climate considerations, parking spaces, waiting areas, eating and food service areas, and waste disposal resulted in poor quality designs.

- Lack of intergovernmental coordination and planning related to local licenses resulted in considerable delays. Often, school buildings, particularly older ones, were not properly licensed. The issue was not checked prior to implementation and sometimes resulted in serious delays.

The USAID Jordan JSP: A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013) Report showed mixed results in offering a new design approach. The new designs used by USAID caused a shift in perceptions and attitudes regarding how a school functions, by introducing subject-matter classrooms/rotation system for students, computer labs, science labs, and providing community access to the school. This transformational change in design created both resistance and challenges among users. The report also indicated that:

- Collaborative design between A&E firms and government resulted in increased MOE feedback and input. JSP required MOE approval at 30%, 60%, 90% and 100% of the design's submission process.

- Community school approach to design – with three local design workshops per project – improved community ownership. Community members were familiarized with the new school designs, and their requests, opinions, and concerns were collected.

- Forward thinking design to long-term utilization and the problem of vandalism resulted in several design changes. New designs replaced steel panel radiators with cast iron or one-piece steel radiators. Bathrooms were designed with external pipelines, or wider pipes, to respond to potential misuse and clogging and to facilitate future maintenance.

- Forward thinking design to behavior around cleanliness resulted in design changes where schools were equipped with practical indoor and outdoor trash cans that could be easily moved and emptied.

- Forward thinking design to the concept of increased community ownership resulted in design changes where community spaces were placed either on the ground floor or with a separate entrance from a side door, in order to encourage principals to promote community involvement in the school.

Despite these efforts at changing design behavior to promote collaboration, several design issues were blamed for inducing negative behaviors and causing dissatisfaction at schools. In a post-project survey, findings included:

- Dissatisfaction with the emergency doors due to misuse and defects.

- Dissatisfaction with the electrical floor boxes in computer labs which made cleaning with water difficult.

- Dissatisfaction with the height of the school surrounding walls, the height of which allowed students to climb over, did not provide the necessary privacy for female schools, and did not address security concerns.

- Principals disagreed with the notion that the location of the new administration office helped them monitor the school.

- Dissatisfaction with design materials such as the type of tiles used for indoor flooring and paint used in the schools, since they both get dirty easily, and are very difficult to clean. They added that paint peeled off easily due to humidity. They expressed dissatisfaction with the bathroom equipment, which students are not accustomed to using, such as spray hoses and sink mixers. They also found that classroom doors were not practical due to poor durability.

- The plastered sides of the internal staircases need to be prepared to withstand cleaning with water and high student traffic.

- While beneficial when working, the security system's magnetic contacts on the Fire Exit doors often failed or were broken due to misuse, falsely setting off alarms. In response, principals switched off the whole system to silence the alarms, thus disabling the safety system.

- Students noted, in some schools, that the new bathrooms were inaccessible and that the odor of bathrooms was quite strong and due to misuse/ toilet clogging, which prompted teachers and principals to lock them.

USAID Jordan SKEP Planning and Design Guidelines (October 2015) Report included design requirements that can lead to hindering negative behaviors and encouraging positive ones such as regular and easy operations and maintenance. For example:

- The specifications for the elevators required that the Hall Stations be equipped with resistant buttons with center jewels which illuminate to indicate that a call has been registered at that floor for the indicated direction. All fixtures shall be a vandal-resistant type.

- The guidelines require the toilet accessories to be vandal-resistant and water-saving devices.

- Gas systems' pipes shall be laid 60 cm below ground level and well protected against any potential weathering or damage.

- Raceways and Boxes: The position of pull boxes shall be arranged so that they will always be readily accessible, and an adequate number of pull boxes shall be provided in a conduit run, to ensure that cables can be installed or removed without damage.

- Consider the color offerings of a vendor's product in the context of the building's color palette before making Furniture, Fixture, and Equipment (FF&E) decisions. Custom colors are not recommended because they will be hard to match at a later date when procuring additional or replacing damaged items.

- Water for fire and potable demand will be stored below ground in a tank divided into two separate compartments to facilitate routine cleaning.

- The waste output from reverse osmosis (RO) shall be collected in separate small tank with one m³ or bigger capacity to use this water in Irrigation or cleaning of the school.

- The chimney shall be provided with an easy access for cleaning.

- Suitable cleanout shall be provided which will permit cleaning the entire smoke conduit without dismantling.

- The boiler shall be provided with hinged access doors for cleaning and replacement of parts and will be so designed that one operator can open access doors for cleaning.

- All necessary access doors and cleanout opening shall be furnished to provide full access to all fireside surfaces for inspection, cleaning and repair.

- Provide labeled containers near the canteen to hold waste. Containers used to hold food wastes should be labeled and located near the canteen area.

- Locate student restrooms where they can be supervised.

- Paved outdoor areas link the building to the site-edge and are not just "leftover" spaces.

- The outdoor assembly area is used for the morning assembly and for students to congregate during the morning break. Within this space, provide a 'my art' wall dedicated for student paint creations.

- The play surface area is ideally located in one coherent area easily observed by supervisors with no hidden corners.

The USAID Jordan Education Assessment: School Construction and School Expansion (September 2018) Report addressed design-behavior links, noting that students were also better able to focus on their lessons in well ventilated, brightly lit, and more spacious classrooms at the USAID-constructed schools. On the other hand, according to the assessment report, the new buildings built under the USAID projects took away from the sports fields which increased violence and tension among students because students no longer had a space to release their energy. The report noted the following:

- Linking design to absenteeism, community members at one school in the central area also mentioned concerns with the walls of the school being too low enabling students to leave school during school hours.

- Linking design to vandalism, a school director at a mixed school stated, "I had to enhance the window with metal bars to keep the boys from the neighborhood from being able to climb into the classrooms." This same school director spoke about youths from the community entering the school yards after school hours without permission because the gate was not well-constructed.

- Linking design to bullying and violence, boys interviewed at one urban secondary school in the Central governorate noted that privacy and safety were nonexistent in their bathrooms, and shared concerns about bullying and excessive smoking with minimal supervision from teachers.

The JEN and UNICEF Jordan Nationwide Assessment in Public Schools for Strategic Planning (2015–2016) Report noted a link between water tap placement and vandalism and looting. The report noted that generally, water taps are installed in the schoolyard, outside the main school buildings exposing the fixtures to vandalism and looting. The report recommended that to prevent vandalism or looting, some schools have taps inside the buildings or install grilles surrounding taps to secure them with pad locks.

ESMP INTERVIEWS

Interviews with stakeholders **(refer to Annex 1)** identified some design phase related behaviors affecting the design process, such as not conducting the soil test – thereby negatively impacting the accuracy of the design – which can be considered as an institutional behavior. It was noted that previous initiatives aimed at school design innovation are not being checked to learn about whether they should be incorporated into future standards.

According to the parental FGDs conducted by ESMP, the distance to bathrooms is an issue that needs to be addressed. Some schools do not have bathrooms inside the school and the route home from school is unsafe for children to traverse alone as they may face harassment. This leads to parents advising their children (both male and female) to completely avoid bathrooms. Mothers suggested schools have someone guarding all bathroom doors and have cameras around the schools to address the security issues. Some schools have resorted to closing the bathrooms altogether, which is not a good solution since students are left without bathroom access in their school. The mothers insisted that schools secure the bathrooms by making them closer to the classrooms (there should be at least one bathroom per floor).

It was also noted that there is a need for a high wall enclosing the school, as well as a full-time security guard, to protect the school from outsiders entering the school and possibly vandalizing it. Additionally, parents suggested to including prayer rooms in public schools, thus encouraging students to pray and helping instill religious ethics in children.

CONCLUSIONS

Based upon a review of prior assessments and interviews conducted by ESMP, design phase enhancements or improvements that can result from elevating positive behaviors and curbing negative ones include the following:

- Enhanced ownership and increased accountability to ensure that complete documentation is available and sent on time by MOE to MPWH to avoid delays in the design phase

- Enhanced participatory engagement of all relevant stakeholders in design development

- Increased knowledge sharing of the adopted design guidelines

- Increased staff resources and capacity to review designs received from A&E consulting firms affects quality

2.1.3 PHASE 3 – TENDERING

Tendering is primarily the role of the MPWH. The MOE role is secondary in this phase. The MOE sometimes participates in studying the technical proposals for the construction firms and gives input when necessary.

PRIOR ASSESSMENTS

The USAID Jordan JSP: A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013) Report, USAID Jordan SKEP Planning and Design Guidelines (October 2015) Report, USAID Jordan Education Assessment: School Construction and School Expansion (September 2018) Report and JEN and UNICEF Jordan Nationwide Assessment in Public Schools for Strategic Planning (2015–2016) Report were reviewed and provided no information related to tendering phase behavior.

The USAID Jordan School Construction Stakeholder Assessment (April 2015) Report noted the following relevant institutional behaviors:
- Absence of procurement annual planning resulted in staff resources being misaligned with key tendering priorities.

- Incomplete and poor-quality design packages, reflecting both substandard firm performance and inadequate A&E regulation by government, resulted in lengthy delays and multiple variation orders (VOs).

- Suboptimal time and staff management around forming committees and evaluating proposals resulted in starting delays and increased costs.

- Donor requirements for non-standard procedures sometimes resulted in longer tendering processes.

- Misalignment of firm minimum qualifications with project requirements resulted in quality issues at all levels.

- Lowest price focus on decision-making resulted in diminished focus on quality and qualifications, often leading to selection of incompetent contractors.

- Inconsistent or lack of retendering policies resulted in construction firm confusion and additional time and financial costs.

The USAID Jordan Host Country Contracting Assessment (December 2018) Report described the following challenges that reflect institutional behavior:
- Government opposition to periodic turnover for the Special Tendering Committee (STC) members for both health and education sectors (unchanged since 2015) may result in lack of innovation, and risk cozy relationships with firms.

- Inadequate staff training resulted in reduced capacity and lack of tendering process awareness and understanding. Staff often provided different responses to the same process questions.

- Coordination between design and tender phases appears lacking, as the often-considerable time gap may be so long as to require design modifications.

- Misunderstanding of separation of authority results in the STC awarding committee reviewing and resolving complaints against itself.

- Lack of contractor performance oversight policies and procedures result in repeated poor performance.

- Inconsistent evaluation practices used by the Government Tenders Directorate (GTD) and the STC result in parallel procedures.

- Inconsistent electronic archiving procedures for GTD and STC result in suboptimal record keeping.

- Overly centralized contractor bid question and answer phase, requiring Ministerial approval of all responses prior to publishing them, results in bid delays.

- Miscommunication among stakeholders results in poor planning and coordination. For example, when MPWH prepares a school construction tender, the MOE strategic planning section may not be informed in a timely manner, thus lacking information to update their own plans.

- Poor project management information sharing between MPWH and MOE results in poor planning/implementation. For example, furniture is not tendered by MPWH and must be scheduled by MOE. The shared project management spreadsheet charts progress against funds spent, not actual work performed. 60% of funds spent could mean 40% work complete. The result is poor planning, premature purchase, warehouse costs, and damage.

- Government-wide behavior of late contractor payment results in project delays, increased contractor costs, and ultimately higher cost bids as the firms factor in late payment and various time delays into their projected costs.

ESMP INTERVIEWS

The interviews conducted with SI stakeholders **(refer to Annex 1)** addressed some institutional behaviors that need to be changed. For example, after finishing the design, it takes a long time for tendering and in some cases the designs are no longer suitable. Lack of communication among stakeholders was also cited as another area for improvement, such as when MPWH plans for a school construction tender, MOE should be informed so the strategic planning section can update their own plans; this is currently not the case.

The tendering phase also covers tendering for furniture. Furniture tendering starts according to work progress (%), which is based on the financial spending not actual work. This may cause problems with tendering, as happened in some cases when the financial progress indicated 60% of funds had been spent and the actual work progress was only 40% complete. This caused problems as the furniture was ready but was kept at the MOE warehouses, which caused damage to the products.

On the contractors' side, according to the A&E consulting firms and Contractors Workshop held on July 29, 2019, in some cases, they do not benefit from the Question and Answer (Q&A) period which affects their understanding of the project.

CONCLUSIONS

Based upon a review of prior assessments and interviews conducted by ESMP, tendering phase enhancements or improvements that can result from elevating positive behaviors and curbing negative ones include the following:

- Increased ownership and accountability resulting in decreased lag time between the design and tendering phases, with sufficient time given to Q&A and bidding.

- Increased authority and enhanced capacity to award bids based on a combination of the criteria and not only on lowest price.

- Enhanced capacity of MOE staff to handle larger school construction tenders.

2.1.4 PHASE 4 – CONSTRUCTION MANAGEMENT AND SUPERVISION

The Construction Management and Supervision phase is conducted by A&E consulting firms along with the contractors under the supervision of the MOE if the project's budget is up to JOD 250,000, and by MPWH if the value is above that.

PRIOR ASSESSMENTS

The Construction Management and Supervision phase of the SI cycle was not assessed in the *USAID Education Assessment (September 2018) Report* or the *JEN and UNICEF Jordan Nationwide Assessment in Public Schools for Strategic Planning (2015-2016) Report* as these assessments focused on the impact of school design, operations, and maintenance on the education environment. However, the *USAID Jordan Education Assessment: School Construction and School Expansion (September 2018) Report* shed light on several challenges related to institutional and individual behaviors, as follows:

- MPWH budget shortfall in terms of human resources, vehicles, and time, resulted in poor oversight and follow up with engineering firms throughout the construction management and supervision and closeout and acceptance phases.

- The poor quality of materials used in construction, and the absence of supervision from A&E firms, both of which affect building maintenance and sustainability.

- There is dissatisfaction about the level of commitment of the contractors, evidenced by them not abiding to the original approved designs, and not fulfilling other stakeholder requirements as a result of neglect and carelessness.

- Chain of problems due to delays by A&E firms such as delays in construction which causes an increase in costs for construction firms, and schools being handed over after the start of the school year.

- Donor funded projects are not in sync with MPWH protocols, such as allowing time extensions due to weather conditions that impede the work progress, and require non-local materials such as thermal blocks that are difficult to procure in the local market, resulting in confusion and delays, and challenge operation's sustainability.

- Unclear lines of authority and responsibility between construction management and supervision and MPWH resulted in decision-making confusion and delay.

- Communication issues between A&E and construction firms resulted in management and supervision challenges.

- Lack of project management coordination with service providers for electricity, water, and sewage resulted in closeout and acceptance delays.

The USAID Jordan JSP: A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013) Report identified the following behavioral issues worth noting:

- Inconsistent application of International Federation of Consulting Engineers (FIDIC) contract standards by USAID (FIDIC 1987) versus those used by MPWH resulted in confusion over allowable costs, such as severe weather time extensions or material cost changes resulting in unplanned risk being shifted to contractor costs.

- Lack of intergovernmental coordination such as receiving GAM permits, resulted in substantial delays. Contractors, however, were scheduled to commence work within 30 days from issuance of notice. The result was that some contractors claimed additional time due to this delay.

Although the *USAID Jordan Host Country Contracting Assessment (December 2018) Report* focused on the tendering process, some relevant construction management behavior aspects were identified, as follows:

- Overly complicated bureaucracy slowed issuing of payment vouchers, as a payment request was sent from the contractor to the consultant, and then another request from the consultant to the MPWH, to issue a payment voucher resulting in unnecessary administrative workload and payment delays.

- Inadequate project-based recordkeeping, with invoices and payment vouchers stored in separate folders depending on the month they were issued in, and not per project, resulted in unnecessarily difficult project-based cost documentation.

- Behavior related to delegated authority and responsibility was raised by contractors who noted that employees are afraid of taking decisions regarding VOs, resulting in delays.

ESMP INTERVIEWS

During the A&E Consulting Firms and Contractors Workshop held on July 29, 2018, some challenges in the construction management and supervision phase were discussed. A major concern was that MPWH employees are afraid of taking decisions regarding VOs and the Engineering Consultant supervising the project distrusts the contractor regarding the credibility of the request. A behavior on the part of the contractors that led to this was the use of unqualified subcontractors, which negatively impacts the quality of work. In addition, contractors often develop a project plan but only consider it a contractual requirement and do not monitor or update the plan as much as needed, if at all, during project implementation. This often leads to delays that could have been avoided if the plan had been sufficiently monitored. It was also noted that contractors' workers usually do not follow safety instructions; such behavior should result in penalizing the contractor according to the contract with the owner (MPWH, USAID, etc.).

During the parental FGDs conducted by ESMP, it was noted that there were concerns about construction works and repairs during school times which present a safety hazard for the children (uneven floors, broken windows and stairs, and equipment within reach).

CONCLUSIONS

Based upon a review of prior assessments and interviews conducted by ESMP, construction management and supervision phase improvements that can result from elevating positive behaviors and curbing negative ones include the following:

- Increased MPWH staff capacity and resources to follow up on the quality of materials and construction work

- Increased capacity and authority to approve VOs as required

2.1.5 PHASE 5 – CLOSEOUT AND ACCEPTANCE

According to MPWH, the MOE has an important role in reviewing the schools (in conjunction with the closeout and acceptance committee) to determine whether the educational requirements of the facility are met or not.

PRIOR ASSESSMENTS

The *USAID Jordan School Construction Stakeholder Assessment (April 2015) Report* identified several issues facing the closeout and acceptance phase that could be interpreted as institutional behaviors, such as the following:

- MOE insistence on school use prior to completion of all punch list items results in contractors facing problems in finishing the work, which raises risks of property damage, and affects workmanship warranty provisions.

- Inadequate staffing related to project volume, capacity issues, poor planning, and project management/scheduling of school handover often results in significant delays and sometimes results in schools operating without being fully furnished.

- In some cases, additional work is requested for schools that are near completion; this may be due to a lack of proper coordination by the MPWH.

- Inadequate information management systems result in the MPWH frequent failure to provide "As-Built" designs that are essential to detect design gaps, design expansion plans for individual schools, as well as support operations and maintenance.

- Overly complicated handover bureaucracy results in major completion delays. The contractor is required to consult with the A&E firm and the Closeout and Acceptance Committee and consider their comments. Additionally, the MPWH has lengthy and complicated procedures, including formal letters of approval that, according to stakeholders, can be finalized only by the Minister.

- Lack of intergovernmental coordination often results in delayed municipality and utility company sign-off and, ultimately, hand-over. Such delays often necessitate storage for the school furniture and equipment at extra cost. Furthermore, a conflict could arise between A&E and construction firms on the readiness of the constructed school, ultimately delaying handover. Construction firms would rather speed up the process, while A&E firms favor delay.

The *USAID Jordan JSP: A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013) Report* noted the following institutional behavior:

- Lack of intergovernmental coordination often resulted in delayed occupancy permits, causing delays in connecting the schools to the water, electricity, telephone and sewage grids, preventing full testing of some electrical and mechanical systems.

The closeout and acceptance phase of the SI cycle was not assessed through the *USAID Jordan Host Country Contracting Assessment (December 2018) Report*, *USAID Jordan Education Assessment: School Construction and School Expansion (September 2018)) Report*, *JEN and UNICEF Jordan Nationwide Assessment in Public Schools for Strategic Planning (2015–2016) Report*, as these assessments were more focused on the impact of schools' design, operations, and maintenance on the education environment. *USAID Jordan SKEP Planning and Design Guidelines (October 2015) Report* also did not address handover.

ESMP INTERVIEWS

Some issues were addressed during the A&E Consulting Firms and Contractors Workshop held on July 29, 2018 regarding the participation of ministries' staff in the closeout and acceptance committees where sometimes the committees may include irrelevant employees and unqualified ones. Also, it was noticed that the A&E firm hired for supervision does not strictly follow-up on the contractor regarding closing the notes submitted by the closeout and acceptance committee. In some cases, the contractor does not submit the "As-Built" drawings and when doing so, they are not accurate.

CONCLUSIONS

Based upon a review of prior assessments and interviews conducted by ESMP, closeout and acceptance phase improvements that can result from elevating positive behaviors and curbing negative ones include the following:

- Handover before the beginning of the school year as a result of proper management of previous phases through enhanced accountability, responsibility, and decision-making skills.

- Enhanced ownership and increased confidence in signing off on handover documents

- Contractors' "As-Built" drawings accurately reflecting actual work done

- Improved archiving

2.1.6 PHASE 6 – OPERATION AND UTILIZATION

School operations and utilization falls under the responsibility of the MOE.

PRIOR ASSESSMENTS

The *USAID Jordan School Construction Stakeholder Assessment Report (April 2015) Report* draws linkages between design decisions/ behaviors and school operation and utilization, as follows:

- A design focused on modernity over sustainability may result in premature breakage or misuse, as staff are not properly trained on modern fixtures and systems, or their maintenance.

- Initiating untested design changes may result in unintended consequences, with the example of the MOE FDs' reports that the emergency (fire) doors and stairs facilitate students stealing and leaving when they are not supposed to.

- Lack of intergovernmental coordination with local utilities entities results in problems extending water, electricity, and sanitation services to constructed schools. The electricity company affirmed this, stating that its limited participation in the early stages of the construction process result in the electricity requirements remaining undefined until a later stage.

The *USAID Jordan JSP: A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013) Report* highlighted some operation and utilization behaviors that can have a positive impact on the school, such as the following:

- Community members felt that their involvement in the school activities contributed to the wellbeing of students in their community, which in turn enhanced the quality of their community as a whole.

- Community school ownership resulted in community members organizing and participating in activities to maintain the newly constructed facilities, such as fundraisers, voluntary clean up events, and teaching campaigns for school promotion/awareness events.

- A design focused on modernity over sustainability resulted in toilet and sinks that were described as not practical, easily misused, costly, and not readily replaceable in the local market.

The *USAID Jordan Education Assessment: School Construction and School Expansion (September 2018) Report* draws attention to the following important behaviors as related to vandalism:

- Vandalism is considered a serious behavior that results in property destruction and damage. In the report, school directors and teachers spoke about the use of their new schools as national exam centers, which in turn exposed them to other students who would intentionally destroy the space. Others spoke about youths in the community, particularly where schools do not have a guard, coming into the school property, or students purposely throwing things into the toilets clogging the pipes, or sitting on the water fountains.

- Misuse, based on lack of knowledge, also resulted in premature damage. This included unfamiliarity with the facilities or equipment. As examples, some of the toilets were built with a flush handle while students were more familiar with the push button, or students lacked knowledge on how to turn on certain water taps, etc.

- Poor facility planning and maintenance resulted in students often having to bring their own drinking water from home or purchase water, because water was often cited as not available for washing away waste or hands after toilet use, and filtered drinking water was often not available.

- Poor facility planning and maintenance resulted in most schools using supplemental gas heaters during winter to keep warm. These cause health/ breathing issues and safety concerns. Teachers and students both say that while these are causes of concern, they would rather be warm.

- Dirty floors at some schools caused a feeling of "negative energy" for teachers even after cleaning the floors.

- Insufficient staffing for cleaning services resulted negatively on schools' ability to properly maintain their facilities and equipment.

- Voluntarily community and school-based cleanup efforts addressed cleaning service gaps. Schools sought support from students and teachers to organize cleaning days or coordinate cleaning schedules and competitions among classes. At some schools, students are in charge of maintaining their classrooms where the responsibility for the cleanliness of classrooms, school and yard is on a rotational basis. Some students stated that the task of cleaning is often given as punishment or discipline.

- Community fundraising events closed budget gaps created by inadequate GOJ budget support. An important part of school operation and utilization is the community involvement. These included the more formal bodies such as parent-teacher associations or education development committees, and less formal functions such as workshops or trainings offered to parents and community members at the school. Schools hold fundraising events such as bazaars in which parents will purchase wares, but schools do not ask parents or communities directly for donations. Some schools' principals and teachers created campaigns to ask family members for monetary donations to provide basic supplies for students. With financial support from communities, these schools were able to provide heaters, white boards, board markers, stationary, fans and other school resources.

- Some principals from renovated schools offered extracurricular use of school yard and play areas for sports activities, resulting in greater community engagement. However, a larger number of school principals were more concerned about vandalism and would lock the school gates after school hours.

The *JEN and UNICEF Jordan Nationwide Assessment in Public Schools for Strategic Planning (2015–2016) Report* focused on some areas of the school's operations and utilization such as the emphasis on having a safe school environment, in which school premises should be protected to avoid break-ins or vandalism of school facilities by outsiders and to ensure a safe learning environment for children. Unsafe and insecure learning environment would affect school attendance, especially for girls and younger children.

According to the assessment, children's willingness to use school latrines could be affected by the level of maintenance as well as the cleanliness of latrines. In most schools, cleaning is conducted by MOE-hired school cleaners where 82% of the schools' facilities are cleaned more than once per day. The frequency of cleaning in girls' schools and in schools in urban areas is higher than others, while facilities in boys' schools tend to become filthy (based on the condition of school latrines). Around a quarter of boys' schools lack cleanliness.

The cleanliness of schools is not necessarily linked to the frequency of cleaning or the number of cleaners. Out of the schools categorized as not clean, 79% have regular cleaning and 88% have more than one cleaner. On the other hand, the proportion of schools with poor latrine condition is higher in schools which were classified as unclean. This indicates that cleanliness could depend on correct behavioral practices of children rather than cleaning frequency.

Moreover, 50% of the schools have no waste disposal containers and school solid waste is not collected regularly in 48% (1,755) of the schools, out of which, 1,479 schools have no waste disposal containers. It is assumed that those schools are not counted as a waste collection point so public waste collection service is unavailable. Schools without solid waste management practices burnt trash on the school premises or just left it scattered in and around the school yards.

In addition to outdoor trash containers, the availability of sanitary disposal bins in female latrines was assessed where, out of the 1,548 schools which answered the question, 71% of the schools have no sanitary disposal bins. Non provision of sanitary bins in schools is likely to affect girls' school attendance. Regarding types of community contributions which vary, with in-kind and financial donations being more popular, donation of cash or non-cash items would be helpful for school operation. However, this kind of contribution seldom creates a community-school partnership and generates collective power for community participation. It is recommended that schools work together to drive the implementation of community participation in activities going forward such as daily cleaning and routine maintenance of school facilities for a healthy school environment. As demonstrated by Parent-Teacher Association (PTA) involvement, boys' schools and schools in rural areas receive less contribution from communities.

Facilities of around one third of the schools are used for non-school activities such as sports, training, meetings, celebrations and elections in non-school hours. Schools traditionally have been the centers of their communities. Encouraging the community use of school premises would enable schools and communities to educate children together and bring a sense of ownership among communities. Proper guidelines for the use of the facilities should be provided.

ESMP INTERVIEWS

According to interviews conducted with the project's stakeholders **(refer to Annex 1)**, some problems were highlighted such as MOE's capability of providing necessary financial resources for electricity and water as they need to request allocated funds from Jordan's General Budget Department (GBD) on a monthly basis and the process takes a long time.

Each school has a development plan and a related executive plan that includes needed improvements to SI but these plans are usually not well executed and lack follow up because teachers and admin staff lacking capacity and authority, and there is no accountability for non-execution.

School budgets are funded by school's fees and from School and Directorate Development Program (SDDP), but schools' principles are afraid of spending the money available.

Computers are outdated and schools are not using the smart boards. Reason for this behavior include that teachers are afraid of using the technology tools and being responsible for their damage as they are considered a custody. This is an opportunity for the school principal to encourage them.

School Leadership has an important role in improving a school's environment by building relations with local community and governmental institutions.

Students and their parents have no feeling of belonging toward the school, contributing to the culture of vandalism against school facilities and properties.

The high level of enrollment at newly built schools causes overcrowding in a very short period especially for children (Grades 1-4). Additionally, parents often prefer to enroll their children in mixed-sex schools as the teaching staff are females, which results in overcrowding in these schools.

An example of school facilities and properties misuse is using the roof as a storage area, which affects the infrastructure of the school. However, often there is no other place available to use as storage.

Vandalism and bullying problems are expected to arise in schools that have extensions built by USAID. The new classrooms cannot accommodate more than 36 students as obliged by USAID, whereas old classrooms accommodate 70 students on average. New classrooms are more pleasant for students, and

affect students psychologically. When teachers and students become aware that their colleagues and peers are enjoying newer, nicer facilities they will take a keen interest in the disparate levels of quality between schools.

According to the A&E Consulting Firms and Contractors Workshop held on July 29, 2019, students faced problems using advanced toilet equipment such as sensor water taps and flush handles which lead to the equipment becoming damaged. This can be avoided by giving students an orientation on how to use them. At some schools, bathrooms are closed so that the students will not damage them.

According to the parental focus groups conducted by ESMP, toilets are causing significant challenges. The walls are covered with inappropriate writings and the bathrooms are dirty and unhygienic (students are having to deal with infections as a result). Most of all, students feel unsafe to even enter the bathrooms because of the harassment that occurs, and parents advise their children (both male and female) to completely avoid bathrooms. They are also perceived as unsafe due to lack of security and less than desirable activities occurring between students and outsiders (drugs, smoking, etc.). Some schools resorted to closing the bathrooms altogether, leaving students without needed facilities. Mothers suggested that schools should provide guards at all bathroom doors and have cameras around the schools to address the security issues.

Also, playgrounds (if existent) are used as parking lots for the teachers leaving students with no safe place within the school grounds. Children end up playing in the street instead. Some playgrounds are empty and do not include any activities for the students to engage in.

The school gates are not guarded; people from outside are able to come in and out easily, some of them are often found in bathrooms. Mothers insisted that there needs to be a security guard at the gate making sure that students are not leaving the school during school hours, that there are no students left inside the school after hours and that strangers cannot come in, as there have been cases of kidnapping and violence due to lack of security at the school.

Also, the absence of heaters in the winter and fans in the summer cause major disturbance in the student's learning process.

CONCLUSIONS

Based upon a review of prior assessments and interviews conducted by ESMP, construction management and supervision phase improvements that can result from elevating positive behaviors and curbing negative ones, many of which also apply to the previous phase, include the following:

- Handover before the beginning of the school year as a result of proper management of previous phases through enhanced accountability, responsibility, and decision-making skills.

- Enhanced ownership and increased confidence in signing off on handover documents.

- Contractors' "As-Built" drawings accurately reflecting actual work done.

- Improved monitoring to deter vandalism or theft by students or outsiders.

2.1.7 PHASE 7 – MAINTENANCE

MOE has the responsibility for maintaining government schools.

PRIOR ASSESSMENTS

USAID Jordan School Construction Stakeholder Assessment (April 2015) Report identified several relevant maintenance-related behaviors, as follows:

- Insufficient training on the "Construction Guarantee" resulted in many legitimate construction/design deficiencies going unrepaired. Also, due to improper planning, some schools did not begin operating until the end of the guarantee period.

- MOE field directors reported a lack of compliance or fulfillment of construction guarantees during the free warranty period. There was evidence of poor replacement oversight where replacement parts were of lower quality.

- Poor planning, where spare parts were often unavailable for fans, electrical fixtures and computer rooms resulting in their non-use.

- Poor planning and coordination with the electricity company, at the early design stage, resulted in later electrical maintenance issues, particularly with insufficient space allocated for electrical equipment.

- MOE's slow response time to its "on-demand" maintenance procedures result in delays and sometimes additional damage.

- Students' lack of respect for school facilities was cited by several stakeholders, resulting in misuse and damage, and low level of cleanliness in the bathrooms and classrooms.

The *USAID Jordan JSP: A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013) Report* noted behaviors, as follows:
- Overly complicated bureaucracy resulted in lengthy repair delays. Required maintenance forms had to be filled by the schools and then sent to the field directorates. Field directorates forwarded the forms to the various departments at MOE which then sent them to MPWH. MPWH would then contact the construction contractor accordingly. Next, a site visit is conducted to evaluate the damages and finally the construction contractor was notified. The result, in some cases, was a process that took approximately two to three months.

- A design / construction process that focused on future operations and maintenance would result in handover information and training. For example, JSP provided every principal with a copy of the 'As-Built Drawings' and an 'Operation and Maintenance Manuals' that provided a simplified and user-friendly maintenance procedure. Additionally, every principal with a simplified and user-friendly orientation manual for electrical and mechanical systems in Arabic and the guarantees and suppliers' contact details to facilitate maintenance processes.

- During the "Defects Liability Period" some contractors treated two types of damages differently. The first was due to construction contractor workmanship. The second was due to the misuse of end users. Most construction contractors did visit the schools and attended to the first type of damages, while they left the replacement of broken items until the end of the "Defects Liability Period."

The *USAID Jordan Education Assessment: School Construction and School Expansion (September 2018) Report* noted:

- Poor maintenance resulted in classrooms closings due to poorly maintained roofs, related water damage including mold which reportedly caused respiratory problems for students.

- Poor maintenance of latrines and drinking taps discouraged students from eating, drinking, and relieving themselves during the school day, decreasing student comfort and hindering students' daily schedules.

- Vandalism, poor construction, misuse, and slow response time collectively resulted in maintenance issues described as a "disaster." Most schools assessed themselves as having a high volume of maintenance issues and lack of follow-up.

- Lack of sufficient GOJ funding results in some schools recruiting students to act as custodians. Other schools seek monetary support from the community and ask technically qualified parents, such as Heating, Ventilation, and Air Conditioning (HVAC) technicians or plumbers, to provide volunteer help.

The *JEN and UNICEF Jordan Nationwide Assessment in Public Schools for Strategic Planning (2015–2016) Report* showed that the availability of security measures might be linked to the conditions of school facilities. When correlating school latrine conditions and security measures, schools without a guard and a fence were less likely to maintain latrines. Enhancing school security could also contribute to the maintenance of school facilities.

Also, rented schools have a lower priority than MOE-owned schools in terms of maintenance and improvement due to the restriction of interventions and the ineffectiveness of working on any facilities which will not become MOE'S asset.

ESMP INTERVIEWS

Stakeholders interviews showed that most maintenance requirements are due to vandalism and misuse by the students, such as scratching the walls, bending the fan blades, and breaking windows. Most of this occurs in the classroom between sessions when the students are left for five minutes before the next teacher comes. Vandalism is more obvious at male schools than female schools (although this has increased at female schools in recent years; girls' behavior is changing).

The level of severity of maintenance work often depends on how quickly problems are addressed. For example, clogged drains or toilets become more severe when ignored, resulting in additional problems or costs.

CONCLUSIONS

Based upon a review of prior assessments and interviews conducted by ESMP, maintenance phase improvements that can result from elevating positive behaviors and curbing negative ones include the following:

- Improved data collection and sharing of school maintenance records and status

- Enhanced preventative maintenance procedures with greater delegation of authority to school administrators

- Increased community and parent contribution to school maintenance, thus enhancing stakeholder ownership and involvement in maintaining school buildings

3. RECOMMENDATIONS

After careful analysis, Jordan ESMP developed the following recommendations based on behavioral assessment **(Table 8).** These recommendations can be considered in future implementation efforts.

Table 8. ESMP recommendations based on behavioral assessment

	Recommendations
1	Adopt values of teamwork, knowledge sharing and transparency within MOE's and MPWH's organizational culture
2	Define specific roles and responsibilities for each staff member with authority and hold them accountable through SMART KPIs
3	Conduct focus group discussion with relevant stakeholders to identify root causes of issues within the SI Cycle phases
4	Develop incentive-based programs for MOE and MPWH staff to promote positive behavior in all the phases including ownership such as role models and success stories
5	Build capacity of staff at all levels in both technical and soft skills such as decision making and leadership
6	Encourage positive engagement of local community members as schools' protectors and promoters of the wellbeing of schools and students
7	Integrate descriptive material in classrooms that promote ethics and incentivize positive behavior among students
8	Conduct a staffing assessment to determine whether the number and quality of current staff is sufficient to undertake the SI Cycle phases' tasks

3.1 BEHAVIOR CHANGE FRAMEWORK

According to *USAID Updated Behavior Engineering Model (September 2014),* organizational performance is examined based on two components; environmental and individual. Under each component are three performance factors as illustrated below **(Table 9)**. Performance solutions are designed based on which of the six performance factors lie at the root cause of the performance gap.

Table 9. USAID Updated Behavior Engineering Model (2014)

	Information	Resources & Tools	Incentives
Environmental	• Roles and performance expectations are clearly defined; employees are given relevant and frequent feedback about the adequacy of performance. • Clear and relevant guides are used to describe the work process. • The performance management system guides employee performance and development.	• Materials, tools, expert support, and time needed to do the job are present. • Processes and procedures are clearly defined in reference documentation. • Overall physical and psychological work environment contributes to improved performance; work conditions are safe, clean, organized, and conductive to performance.	• Financial and non-financial incentives are present; measurement and reward systems reinforce positive performance. • Jobs are enriched to allow for fulfillment of employee needs. • Overall work environment is positive, where employees believe they have an opportunity to succeed; career development opportunities are present.
	Knowledge & Skills	**Capacity**	**Motives**
Individual	• Employees have the necessary knowledge, experience and skills to do the desired behaviors. • Employees with the necessary knowledge, experience and skills are properly placed to use and share what they know. • Employees are cross trained to understand each other's roles.	• Employees have the individual capacity to learn and do what is needed to perform successfully. • Employees are recruited and selected to match the realities of the work situation. • Employees are free of emotional limitations that would interfere with their performance.	• Motives of employees are aligned with the work and the work environment. • Employees desire to perform the required jobs. • Employees are recruited and selected to match the realities of the work situation.

In order to adjust each behavior appropriately, the behaviors identified under each of the SI's seven phases are linked to the Behavioral Change Framework as illustrated below:

Table 10. Phase-specific behavioral change framework

	Behavior	Information	Resources & Tools	Incentives	Knowledge & Skills	Capacity	Motives
Phase 1 – Planning							
1	Plans are not developed while engaging all relevant stakeholders in a participatory manner	√			√	√	√
2	Needed data is not available, comprehensive, correct, or updated affecting decision making	√	√		√	√	
3	Lack of accountability and low motivation among MOE staff delays the development of timely and comprehensive plans			√	√		√
4	Insufficient MOE capacity and lack of initiative to study market indicators			√	√	√	√
5	No knowledge sharing of the adopted planning guidelines or the environmental issues that affect school site selection	√		√			√
6	Effect of nepotism and influential interference in school site selection		√				√
Phase 2 – Design							
1	Lack of accountability and ownership to ensuring complete documentation is available and sent on time by MOE to MPWH to avoid delays in the design phase		√				√
2	Designs are not developed while engaging all relevant stakeholders in a participatory manner				√	√	√
3	No knowledge sharing of the adopted design guidelines			√			√
4	Limited number and capacity of staff reviewing designs received from A&E consulting firms affects quality				√	√	
Phase 3 – Tendering							
1	Re-tendering and cancellation of tenders without justification due to lack of transparency affects trust of stakeholders	√	√	√			
2	Lag time between the design – tendering phases and the insufficient time given to Q&A and bidding as a result of lack of accountability	√	√	√		√	√
3	Awarding the lowest price out of fear from the Audit Bureau is a sign of no transparency and lack of responsibility	√		√			√
4	Limited number and capacity of MOE staff to handle larger school construction tenders		√		√	√	
Phase 4 – Construction Management & Supervision							
1	Limited number and capacity of MPWH staff to follow up on the quality of materials and construction work		√	√	√	√	√
2	No coordinated capacity to approve the VO on the design due to inability for decision making and lack of authority			√		√	√

	Behavior						
Phase 5 – Closeout & Acceptance							
1	Handing over the school after the beginning of school year as a result of mis-handling all the previous phases due to lack of accountability, responsibility and decision-making skills	√	√	√	√	√	√
2	MPWH lack of trust and confidence in the contractors' "Snag List" causes delays					√	
3	Fear of signing off handover documents unless the Audit Bureau signs it due to issues of accountability and decision-making					√	
4	Contractors' "As-Built" reflecting actual work done is not trusted by MPWH in terms of quality, and there is no system at MOE of archiving as a result of lack of accountability					√	
Phase 6 – Operation & Utilization							
1	Lack of strong leadership skills among schools' principals in overcrowded schools allow for shifting in facilities such as labs into classrooms				√	√	√
2	Lack of accountability and leadership skills among schools' principals prevent the use of facilities such as labs due to fear of wear and tear				√	√	√
3	Usage of school facilities by community and parents cause wear and tear due to lack of sense of ownership and accountability			√	√	√	√
4	Lack of ownership and accountability creates challenges in the levels of safety, security, health and personal hygiene practices. This in return increases cases of vandalism and negatively impacts a healthy school environment.		√				√
Phase 7 – Maintenance							
1	Local community members, especially parents, help in the maintenance of school facilities promote a sense of community ownership as a manifestation of positive behavior change.				√		√
2	Lack of leadership skills among schools' principals in actively using the 2-year warranty for curative maintenance	√			√	√	√
3	Lack of proper collection and sharing of data on each school's maintenance status at MOE due to lack of ownership		√	√	√	√	√
4	Lack of school principals' ownership, commitment, accountability and responsibility towards the delay in a school's preventive maintenance	√			√	√	√

Each of the behaviors identified in the above behavior change framework needs an accompanying change in process, policy, system, and or capacity building, as noted in thein the following:

Table 11. Phase-specific behaviors and correlating organizational areas for change

Behavior	Process	Policy	System	Capacity Building
Phase 1 – Planning				
1 Plans are not developed while engaging all relevant stakeholders in a participatory manner	√	√		

#					
2	Needed data is not available, comprehensive, correct, or updated affecting decision making		√	√	√
3	Lack of accountability and low motivation among MOE staff delays the development of timely and comprehensive plans	√		√	√
4	Insufficient MOE capacity and lack of initiative to study market indicators	√	√		√
5	No knowledge sharing of the adopted planning guidelines or the environmental issues that affect school site selection	√	√		
6	Effect of nepotism and influential interference in school site selection	√	√	√	√
Phase 2 – Design					
1	Lack of accountability and ownership to ensuring complete documentation is available and sent on time by MOE to MPWH to avoid delays in the design phase	√	√		
2	Designs are not developed while engaging all relevant stakeholders in a participatory manner	√	√		√
3	No knowledge sharing of the adopted design guidelines	√	√		
4	Limited number and capacity of staff reviewing designs received from A&E consulting firms affects quality				√
Phase 3 – Tendering					
1	Re-tendering and cancellation of tenders without justification due to lack of transparency affects trust of stakeholders	√	√		√
2	Lag time between the design – tendering phases and the insufficient time given to Q&A and bidding as a result of lack of accountability	√	√		√
3	Awarding the lowest price out of fear from the Audit Bureau is a sign of no transparency and lack of responsibility	√	√	√	√
4	Limited number and capacity of MOE staff to handle larger school construction tenders				√
Phase 4 – Construction Management & Supervision					
1	Limited number and capacity of MPWH staff to follow up on the quality of materials and construction work				√
2	No coordinated capacity to approve the VO on the design due to inability for decision making and lack of authority				√
Phase 5 – Closeout & Acceptance					
1	Handing over the school after the beginning of school year as a result of mis-handling all the previous phases due to lack of accountability, responsibility and decision-making skills	√	√		√
2	MPWH lack of confidence in the contractors' "Snag List" causes delays	√	√	√	
3	Concern of signing off handover documents unless the Audit Bureau signs it due to issues of accountability and decision-making	√	√	√	
Phase 6 – Operation & Utilization					
1	Lack of strong leadership skills among schools' principals in overcrowded schools allow for shifting in facilities such as labs into classrooms	√	√		
2	Lack of accountability and leadership skills among schools' principals prevent the use of facilities such as labs due to fear of wear and tear	√	√		

3	Usage of school facilities by community and parents cause wear and tear due to lack of sense of ownership and accountability		√	√	
4	Lack of ownership and accountability creates challenges in the levels of safety, security, health and personal hygiene practices. This in return increases cases of vandalism and negatively impacts a healthy school environment.		√	√	√
Phase 7 – Maintenance					
1	Local community members, especially parents, help in the maintenance of school facilities promote a sense of community ownership as a manifestation of positive behavior change.		√		
2	Lack of leadership skills among schools' principals in actively using the 2-year warranty for curative maintenance		√		√
3	No proper collection and sharing of data on each school's maintenance status at MOE due to lack of ownership	√	√	√	√
4	Lack of school principals' ownership, commitment, accountability and responsibility towards the delay in a school's preventive maintenance	√	√	√	√

3.2 BEHAVIOR CHANGE PROPOSAL

Based on the behaviors identified in this assessment and resulting outcomes, ESMP proposes to implement activities to address specific behaviors that can be impacted during the life of the project, specifically:

1. Engaging local community participation on SI issues
2. Reducing vandalism at public schools

These behaviors impact various phases of the SI process, and positive changes will contribute to overall improvement in performance.

Recognizing ESMP budget and staff limitations, if the MOE approves ESMP's offer of support in these areas, the project would work within Jordan's SDDP framework, in collaboration with the MOE, other education projects, and concerned donors. ESMP would seek to test ideas and approaches with SDDP partners on a limited scale, learn from success, and seek replicate positive outcomes more broadly.

Table 12, illustrates a possible draft baseline data collection plan for these behaviors.

Table 12. Behavior-specific baseline data collection plan

Behavior 1	Engaging local community in a participatory manner						
	Data Collection					**Data Analysis**	
	Data	**Who**	**When**	**How**	**Source**	**Who**	**When**
1	SI owner by phase	MOE/ MPWH staff involved in SI	– Immediately – Updated as needed	– Interviews – Brainstorming session	MOE/ MPWH staff involved in SI	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	Updated as needed
2	SI stakeholders' list with clear roles and responsibilities	MOE/ MPWH staff involved in SI	– Immediately – Updated as needed	– Interviews – Observation	MOE/ MPWH staff involved in SI	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	– Immediately after a list is developed – Updated as needed
3	SI stakeholders' matrix (influence/ impact grid)	MOE/ MPWH staff involved in SI	– Immediately – Updated as needed	– Interviews – Brainstorming session	MOE/ MPWH staff involved in SI	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	– Immediately after a matrix is developed – Updated as needed
4	School local community segmentation list	MOE/ MPWH FD staff involved in SI	– Immediately – Updated as needed	– Interviews – Brainstorming session	– MOE/ MPWH FD staff involved in SI – Relevant school	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	– Immediately after a list is developed – Updated as needed
5	School local community communication plan	MOE/ MPWH FD staff involved in SI	– Immediately – Updated as needed	– Interviews – Brainstorming session	– MOE/ MPWH FD staff involved in SI – Relevant school	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	– Immediately after a plan is developed – Updated as needed

5	School local community documented input and feedback	MOE/ MPWH FD staff involved in SI	According to a set process's timeframe	– Meetings – e-mails – Official documents	SI phases' stakeholders	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	According to a set process's timeframe
6	Agreed upon decisions signed by school local community	MOE/ MPWH FD staff involved in SI	According to a set process's timeframe	– Meetings – e-mails – Official documents	SI phases' stakeholders	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	According to a set process's timeframe
7	Log of school local community decisions made, verified, updated, errors, change orders, and owner of each over time	MOE/ MPWH FD staff involved in SI	– Immediately – Updated as needed	Previous interviews, brainstorming sessions, official documents, meetings and e-mails	School design phase stakeholders	– MOE/ MPWH SI owner by phase – MOE/ MPWH FD staff	According to a process's timeframe

Behavior 2	Reducing vandalism at public schools						
	Data Collection					**Data Analysis**	
	Data	**Who**	**When**	**How**	**Source**	**Who**	**When**
1	School facilities owner	MOE staff involved in the operation and utilization phase	– Immediately – Updated as needed	– Interviews – Brainstorming session	School operation and utilization phase stakeholders	MOE school operation and utilization phase owner	Updated as needed
2	Log of school facilities and their condition signed by owner over time at each school	MOE staff involved in the operation and utilization phase	– Immediately – Updated as needed	– Interviews – Official documents	School operation and utilization phase stakeholders	MOE school operation and utilization phase owner	– Immediately after a log is developed – Updated as needed
3	MOE quality assurance (QA) checklist related	MOE staff involved in the	– Immediately – Updated as needed	– Interviews – Official documents	School operation and utilization	MOE school operation and	– Immediately after a

	to inspection of school facilities	operation and utilization phase			phase stakeholders	utilization phase owner	checklist is developed – Updated as needed
4	Log of school facilities and their condition signed by QA inspector over time at each school	MOE staff involved in the operation and utilization phase	– Immediately – Updated as needed	– Interviews – Official documents	School operation and utilization phase stakeholders	MOE school operation and utilization phase owner	– Immediately after a log is developed – Updated as needed
5	Detailed log of parents who contribute to school facilities' maintenance, date and time, photos before and after, materials used, etc. over time at each school	MOE staff involved in the maintenance phase	– Immediately – Updated as needed	– Interviews – Official documents	School maintenance phase stakeholders	MOE school maintenance phase owner	– Immediately after a log is developed – Updated as needed
6	Criteria for using the 2-year maintenance warranty	MOE staff involved in the maintenance phase	– Immediately – Updated as needed	– Interviews – Brainstorming session	School maintenance phase stakeholders	MOE school maintenance phase owner	– Immediately after the criteria are developed – Updated as needed
7	Log of facility maintenance covered under the 2-year maintenance warranty	MOE staff involved in the maintenance phase	– Immediately – Updated as needed	– Interviews – Official documents	School maintenance phase stakeholders	MOE school maintenance phase owner	– Immediately after a log is developed – Updated as needed
8	Detailed log of utilizing the 2-year maintenance warranty for school facilities' maintenance, including request and response date and time, photos before and after, materials	MOE staff involved in the maintenance phase	– Immediately – Updated as needed	– Interviews – Official documents	School maintenance phase stakeholders	MOE school maintenance phase owner	– Immediately after a log is developed – Updated as needed

	used, etc. signed by owner and QA inspector over time at each school						
9	Log of principal's approval to preventative maintenance of facilities over time at each school	MOE staff involved in the maintenance phase	– Immediately – Updated as needed	– Interviews – Official documents	School maintenance phase stakeholders	MOE school maintenance phase owner	– Immediately after a log is developed – Updated as needed
10	Log of school facilities and their curative and preventative maintenance history signed by owner over time at each school	MOE staff involved in the maintenance phase	– Immediately – Updated as needed	– Interviews – Official documents	School maintenance phase stakeholders	MOE school maintenance phase owner	– Immediately after a log is developed – Updated as needed

3.4 KEY PERFORMANCE INDICATORS

ESMP is evaluating the use of the following KPIs related to the behaviors the project will likely address. These behaviors can be addressed by enforcing current policies/ systems, supporting the ministries in developing new and relevant policies/ systems, and capacity building.

Table 13. Potential indicators to measure improvements in targeted behaviors

	Behavior	Indicators
1	Engaging local community in a participatory manner	1) Number of initiatives implemented by the local community in relation to SI 2) Satisfaction rate among the local community in their SI engagement
2	Reducing vandalism at public schools	1) % of decline in school vandalism by type, school, etc. 2) Number of initiatives implemented to raise awareness on school vandalism

The ADKAR model for change management, depicted in **Table 15**, will be used in pursuing behavioral change at the MOE and MPWH with regards to SI Performance Improvement.

Table 14. ADKAR model for change management

	Stage	Purpose	Enablers
A	Awareness	Awareness of the need for change	• Management communication • Stakeholders' input
D	Desire	Desire to participate and support the change	• Discontent with current state • Pending negative consequence • Affiliation and sense of ownership
K	Knowledge	Knowledge on how to change	• Capacity building • Information access • Examples and role models
A	Ability	Ability to implement required skills and behaviors	• Practice applying new skills or using new processes and tools • Mentoring • Removal of barriers
R	Reinforcement	Reinforcement to sustain the change	• Incentives and rewards connected to KPIs • Celebrations • Personal recognition

The above will be achieved through workshops, capacity building sessions, and one-to-one discussions with stakeholders.

4. REFERENCES

JEN and UNICEF Jordan Nationwide Assessment in Public Schools for Strategic Planning (2015–2016)

MOE Statistics Report (2017–2018)

USAID Jordan Education Assessment: School Construction and School Expansion (September 2018)

USAID Jordan Host Country Contracting Assessment (December 2018)

USAID Jordan School Construction Stakeholder Assessment Report (April 2015)

USAID Jordan SKEP Planning and Design Guidelines (October 2015)

USAID Jordan JSP: A Transformational Change – Evaluation of the Jordan School Construction and Rehabilitation Project (May 2013)

USAID Updated Behavior Engineering Model (September 2014)

ANNEXES

ANNEX 1 – LIST OF INTERVIEWEES

	Interviewee Name	Job Title	Department	Entity	Date of Interview
1	Engineer Samar Bahous	SKEP Chief of Party		Engicon	May 5, 2019
2	Mr. Ibrahim Mahfouth	IT Manager		Engicon	May 5, 2019
3	Engineer Nemer Bitar	General Manager		Al Bitar Consultants	May 6, 2019
4	Engineer Jumana Hassani	Team Lead	Design Department	Al Bitar Consultants	May 6, 2019 July 31, 2019
5	Engineer Laila Ghanim	Manager	Proposals and Contracts	Al Bitar Consultants	May 6, 2019
6	Engineer Hashim Al Faqih	Engineer	Project Management and Planning	Al Bitar Consultants	May 6. 2019
7	Mr. Abdullah Hassouneh	Policies and Strategic Planning Directorate	Planning and Educational Research Managing Directorate	MOE	May 27, 2019
8	Mr. Mohammed Abu Hajileh	Managing Director	Supplies Managing Directorate	MOE	May 27, 2019
9	Engineer Laila Alhousna	International Tenders Section Head	Supplies Managing Directorate	MOE	May 27, 2019 July 28, 2019
10	Mr. Mohammad Al Manasser	Financial Affairs Managing Director		MOE	May 27, 2019
11	Dr. Haifa Jayousi	Team Leader	Education Quality and Accountability Unit (EQAU)	MOE	May 28, 2019 July 28, 2019
12	Dr. Balsam Maittah	Managing Director	Internal Controls Unit	MOE	May 28,2019
13	Engineer Rana Al Rai	Maintenance Section Head	Buildings and International Project Directorate	MOE	May 28, 2019
14	Mr. Khaldoun Shkokani	Team Leader at MOE	Audit Bureau	Audit Bureau of MOE	May 28, 2019
15	Mr. Mohammad Hmeidat	Auditor at MOE	Audit Bureau	Audit Bureau of MOE	May 28, 2019
16	Engineer Azmi Hmeidi	International Tenders Coordinator	Development Coordination Unit (DCU)	MOE	May 29, 2019

17	Mr. Marwan Turman	Education Technology Manager	Queen Rania Center for Education and Information Technology (QRC)	MOE	May 29, 2019
18	Mr. Abdulnasser Hishmeh	School and Directorate Development Section Head	SDDP	MOE	May 29, 2019 July 28, 2019
19	Mr. Ghazi Johar	Educational Supervisor	SDDP	MOE	May 29, 2019 July 28, 2019
20	Engineer Safa'a Beiruti	School Mapping Section Head	Planning and Educational Research Managing Directorate	MOE	May 30, 2019 July 28, 2019
21	Mr. Abdullah Hassonah	Policies and Strategic planning Directorate Manager	Planning and Educational Research Managing Directorate	MOE	May 30, 2019 July 28, 2019
22	Engineer Maher Toamah	Land Acquisition Section Head	Planning and Educational Research Managing Directorate	MOE	May 30, 2019
23	Engineer Samar Qaqeesh	Managing Director	Properties and International Projects Managing Directorate	MOE	June 02, 2019
24	Engineer Osama Yousef	Services Section Head	Properties and International Projects Managing Directorate	MOE	June 02, 2019 July 28, 2019
25	Mr. Hisham Abu Khashabah	Financial Planning Section Head	Policies and Strategic Planning Directorate	MOE	June 02, 2019
26	Mr. Tamer Alazem	Human Resource Planning Section Head	Policies and Strategic Planning Directorate	MOE	June 02, 2019
27	Engineer Areej Nmair	Buildings Tenders and Maintenance Section Head and Acting Engineering Studies Section	Properties and International Projects Managing Directorate	MOE	June 02, 2019 July 28, 2019
28	Engineer Wijdan Nazzal	Strategic Planning Section Head	Planning and Educational	MOE	July 04, 2019 July 28, 2019

			Research Managing Directorate		
29	Dr. Raba'a Abdullah	Managing Director	Marka Field Directorate	MOE	July 15, 2019
30	Mr. Attallah Maqablah	Planning Section Head	Marka Field Directorate	MOE	July 15, 2019
31	Engineer Yasser Al Khaldi	Properties Section Head	Marka Field Directorate	MOE	July 15, 2019
32	Ms. Abeer Al Ali	Planning Officer	Marka Field Directorate	MOE	July 15, 2019
33	Dr. Shaker Al Alaween	Managing Director	Al Qweismeh Field Directorate	MOE	July 16, 2019
34	Dr. Nizar Al-Duquss	Technical and Educational Affairs Department Head	Al Qweismeh Field Directorate	MOE	July 16, 2019
35	Dr. Hisham Al Qawasmi	Admin Department Head	Al Qweismeh Field Directorate	MOE	July 16, 2019
36	Engineer Khalil Al-Maraeah	Properties Section Head	Al Qweismeh Field Directorate	MOE	July 16, 2019
37	Engineer Enaam Lahham	Head of Maintenance Planning	Maintenance Department	MOE	July 28, 2019
38	Engineer Nadia Al Ahmad	Director of Buildings department	Buildings department	MPWH	July 29, 2019
39	Engineer Jumana Shihadeh	Buildings department	Buildings department	MPWH	July 29, 2019
40	Engineer Suhair Burgan	Head of studies unit	Buildings department	MPWH	July 29, 2019
44	Engineer Jihad Suilem	Head of Execution and maintenance of schools' department	Execution and maintenance of schools' department	MPWH	July 29, 2019
45	Engineer Basemah Shihan	Engineer	Execution and maintenance of schools' department	MPWH	July 29, 2019
46	Engineer Doa Othman	Engineer	Execution and maintenance of schools' department	MPWH	July 29, 2019

ANNEX 2 – LIST OF FOCUS GROUP DISCUSSION ATTENDEES (A&E FIRMS AND CONTRACTORS)

	Participant Name	Job Title	Entity	Date
1	Mr. Fadi Abu-Irshaid	General Manager	Faz Contractor	July 29, 2019
2	Mr. Ahmad Abu-Irshaid	Finance Manager	Faz Contractor	July 29, 2019
3	Mr. Refaat Tawarah	Engineer	Faz Contractor	July 29, 2019
4	Mr. Ismail Maraqa	Engineer Q,S	Mansour Al-Aqaileh Al Rafayaa Contractor	July 29, 2019
5	Mr. Mohammad AlBakri	Mechanical Engineer	Al Rafayaa Contractor	July 29, 2019
6	Mr. Amer Al-Nuaimi	Engineer	Mansour Al-Aqaileh Contractor	July 29, 2019
7	Ms. Sawsan Al-Yousef	Resident Engineer	Wahib Medanat Al Baha A&E	July 29, 2019
8	Mr. Mahmoud Maghnam	Resident Engineer	Wahib Medanat Al Baha A&E	July 29, 2019
9	Mr. Basel A.Rahman	Supervision Official	Al Baha A&E	July 29, 2019
10	Mr. Hani A.Bitar	Assistant General Manager	Al Bitar Consultants	July 29, 2019
11	Mr. Hashem Al-Faqih	Project Manager	Al Bitar Consultants	July 29, 2019
12	Mr. Jehad Altaq	Civil Engineer	Dejla Contractor	July 29, 2019
13	Mr. Hazem Damra	Engineer Quantity Surveyor	Chart Contractor	July 29, 2019
14	Mr. Mohammad Armoush	Office Engineer	Chart Contractor	July 29, 2019
15	Mr. Moayad Saleh	Quality Control	Mostaqbal A&E Firm	July 29, 2019
16	Mr. Adnan Dasuqi	General Manager	Dasuqi A&E Firm	July 29, 2019
17	Mr. Maher Al-Rafayaa	Authorized Partner	Al Rafayaa Contractor	July 29, 2019
18	Mr. Mohannad Abu Irshaid	Deputy General Manager	Dejla Contractor	July 29, 2019
19	Ms. Ibtisam Abu Aisha	Tendering and Studies Manager	Mohammad Ahmad Abu Aisha Contractor	July 29, 2019
20	Mr. Khaldoun Tbbaa	Supervision Manager	Al Baha A&E Firm	July 29, 2019