Open Contracting in Bangkok

FINAL SCOPING & DESIGN REPORT

September 2022 - March 2023

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OPEN CONTRACTING PARTNERSHIP

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1. Background and Context

Governments around the world increasingly use digital tools to source, procure and manage the supply of goods, provision of services, and building and maintaining of infrastructure.

In Bangkok, Thailand, the Bangkok Metropolitan Administration (BMA) launched an "Open Bangkok" policy. The new policy puts Bangkok citizens at the heart of public policy, emphasising transparency, accountability, and participatory approaches. Two key pillars of openness in the new policy are open contracting and open data.

The Open Contracting Partnership (OCP) is a silo-busting organisation working to enable meaningful collaboration across governments, businesses, civil society, and technologists to open up and transform government contracting worldwide. By bringing open data and open government together, OCP makes sure public money is spent openly, fairly, and effectively on public contracts, the single biggest item of spending by most governments.

As part of the ASEAN Economic Reform Programme Business Case, OCP was engaged by the Foreign, Commonwealth & Development Office (FCDO) Thailand to support the Open Bangkok policy and to explore potential open contracting implementation in Thailand. The 6-month project is part of the Open Contracting in Thailand initiative to expand the use of open and efficient procurement tools through open data.

This report outlines OCP's findings on the primary use cases that resonate the most with Bangkok as well as options for the potential implementation of open contracting in Bangkok. The report also provides the findings on the usability of the current dataset in the Bangkok management information system.

2. Summary of Activities and Outputs

Over the course of 6 months - from October 2022 to March 2023, OCP team delivered:

1. Technical Scoping / Mapping / Diagnosis

The value of open data lies in how it can be used. When designing open contracting reforms it is very important to establish key goals and metrics to be able to set baselines, track progress and adjust as needed. Gathering good quality and reliable data is crucial to implementing proper monitoring, evaluation, and learning strategies and running analyses for better decision-making.

To help BMA better understand their data landscape, OCP provided targeted technical assistance to help BMA scope out, map, and diagnose their data and information systems. OCP delivered a series of bespoke training sessions ranging from introductory sessions on open contracting, the Open Contracting Data Standard (OCDS), and use cases to technical working sessions to advance the data work and drive implementation, for example, to complete the technical assessment template and OCDS field-level mapping template which are the first stepping stones to opening up and publishing standardised, structured, machine-readable data. Alongside these trainings, OCP also organised multiple strategic and technical check-ins involving the OCP team, the BMA team, and the UK Embassy in Thailand to provide one-on-one support and guidance, and at the same time to test preliminary findings from the data usability review.

As a result, BMA now have a better understanding of what data they have and what they can do with that data. There is also now a deeper understanding of key data gaps and what

additional data is needed to enable meaningful analysis, which in turn can deliver data-driven decisions. A more detailed explanation of the findings can be found in chapter 4 of this report.

2. Participatory Scoping & Design Sessions

BMA has been greatly inspired by open contracting success stories from around the world. Eager to replicate these successes in Bangkok, BMA needed help to narrow down the various different implementation options to create a targeted and viable open contracting project for the city.

So as part of this project, OCP delivered an intensive 3-day scoping and design workshop to help BMA answer the following questions:

- What is the problem you want to solve? What are the root causes of the problem?
- What can be done to solve the problem? To what extent, does this solve the problem?
- Who are the stakeholders involved? How can they participate?
- What does success look like? How can we measure success?

Through a series of interactive sessions, OCP helped BMA to approach these questions through a data and innovation lens, applying international best practice and lessons learned from other open contracting implementers to define the best bets for open contracting in Bangkok. For more information, please refer to the facilitator's agenda, workshop slides, workshop notes and Chapter 3 below.

3. Understanding and Identifying Use-Cases

Successful open contracting projects are centred around clear 'use cases' i.e. the problem that needs solving. A "use case" describes how stakeholders (or users) want to use data to answer key questions, calculate key indicators, or even perform key functions necessary for achieving particular goals. Use cases are important to help implementers articulate reform goals, engage key stakeholders and partners, and identify what metrics, indicators, and questions they want to calculate and answer with data. If done well, all of this can be used to inform meaningful actions and effective solutions that transform public procurement for the better.

Working with stakeholders around the globe, OCP has identified five key use cases: improved market opportunities, efficiency, value for money, public integrity, and service delivery. In practice, these use cases might intersect. For instance, more transparent processes (public integrity) can not only reduce corruption risks but also increase competition (market opportunities) and lower prices (value for money). Read more on how we are transforming public procurement around the world with these use cases.

At the start of this project, BMA had yet to identify specific use cases for their open contracting implementation. Through the workshop, and with OCP's help, BMA successfully identified 3 primary use cases for Bangkok. These are:

- better competition;
- better quality of goods/works/services; and
- better environmental/social outcomes.

Highlights of the working sessions can be found in the sections below

Improving Competition/Market Opportunity

The majority of BMA officials agreed that improving competition/market opportunity should be the biggest priority.

There was an animated discussion on the root causes of the low competition in Bangkok. These include:

- Lack of expert knowledge or experience of procurement units/staff;
- Low capacity of vendors (expertise, experience, resources to prepare bids);
- Administrative bureaucracy or red tape causing delays including late payments;
- Lowest price contracting (often at the expense of quality or value); and
- Insufficient outreach by the government to potential new suppliers.

A sample of interventions or solutions that could help overcome these problems include:

- Develop guidance and provide training to procurement officers e.g. to prepare ToRs and tender specifications, or to consider alternative/smaller suppliers instead of favouring large companies that can provide multiple products and services[1];
- Provide training to potential vendors e.g. on how to participate in government tenders, how to satisfy reporting and invoicing requirements to avoid payment delays;
- Introduce new requirements to consider quality as part of tender criteria and assessments (instead of lowest price only);
- Set up reference pricing for goods, works, and services so that procurement officers have benchmarks for fair prices;
- Update government policies to encourage procurement units to invite at least 5-7 vendors to participate per tender (current requirement is 3); and
- Publish tender announcements through the right/meaningful channels with sufficient notice to enable more vendors to participate.

BMA officials also identified what success might look like. In defining their vision of success, these are some of the indicators that resonated:

- Increased number/percentage of new bidders bidding for contracts;
- Increased number of tenders with 3 bidders or more; and
- Increased number of new companies winning contracts for the first time

Improving Quality of Goods, Services, and Works

BMA stakeholders also identified the need to improve the quality of goods, services, and works.

The root causes hindering competition (detailed above) also affect the quality and will not be repeated here. Two additional root causes relating to quality are:

- Inadequate planning e.g. lack of strategic or long-term procurement plans; and
- Insufficient and/or siloed information hindering effective decision-making.

A sample of interventions or solutions that could help overcome these problems include:

- Introduce requirements for
    - procurement plans to help procurement units prioritise spending needs and reduce ad-hoc procurement on a piecemeal basis; and
    - stakeholder consultation and participation to test if planned procurements correspond to market capacities or meet stakeholders needs.

[1] SMEs account for 86% of total employment in Thailand, with the largest concentration of SMEs in Bangkok (ADBInstitute, 2020)

- Create a database of suppliers/vendors so procurement units can better understand market capacities and past performance; and
- Encourage citizen monitoring by publishing procurement data in a format that is easy to use and easy to understand.

Indicators of success for quality goods, services, and works are many varied and cannot be listed exhaustively here. However, examples of quality indicators include:

- Increased number of goods or services with certifications or quality ratings;
- Longer lifespans for goods (lower frequency for replacing goods or parts); and
- Reduced number of repairs or maintenance needed on roads or highway projects.

Improving Environmental & Social Outcomes

In addition to the two use cases mentioned above, improving environmental and social outcomes was also highlighted as an urgent need. In particular, BMA officials were interested in using public procurement to reduce air pollution and flooding in the city.

Bangkok suffers from frequent, destructive floods, sometimes after as little as 30 minutes of rain. As a result, BMA officials identified the following priorities:

1. Improve understanding of flood procurements including
    a. what is being spent and where;
    b. how those decisions are being made; and
    c. what impact or improvements flow from this spending.
2. Improve planning and decision-making by
    a. collecting and standardising data to analyse and prioritise needs;
    b. joining up fragmented and siloed datasets in different departments; and
    c. sharing data, analysis/insights to inform decision-making across departments.
3. Improve communication with citizens to build trust by sharing information on
    a. what action BMA is taking to improve flood response or reduce flood risks e.g. clearing blocked drains or building embankments;
    b. fix rates for flood-related issues or complaints; and
    c. response time for responding to alerts or fixing reported issues.

Air pollution is another significant climate, environmental and health problem in Bangkok. BMA officials identified several opportunities and policy actions for reducing emissions from public vehicles including to:

- Transition to clean energy/electric vehicles e.g. for public buses, garbage trucks, etc;
- Introduce green criteria in public vehicle tenders e.g. green certification or standards;
- Introduce tax incentives for green vendors;
- Introduce frameworks for assessing value e.g. comparing whole lifecycle costs (inc. maintenance and repair) for purchasing vehicles vs renting or leasing vehicles; and
- Launch a campaign to encourage registration of green companies.

Potential indicators to measure progress include:

- Increase in the number of green bidders on tenders;
- Increase in the number of contracts awarded to companies with green technologies;
- Increase in the number of registration of green vendors/suppliers;
- Increase in the number of electric vehicles purchased by BMA; and
- Percent of budgets allocated to green products or services inc. electric vehicles.

4. Potential Implementation Projects: Findings and Recommendations

OCP followed up with key BMA officials including Deputy Governor Sanon Wangsrangboon to share workshop findings, test potential implementation options and discuss next steps.

As a result, 3 viable implementation options were identified:

Option 1: Improving Flood Procurement

Bangkok Metropolitan Region (BMR) is highly prone to flooding (OECD, 2015). According to the OECD, 73% of Bangkok citizens affected by floods are the urban poor - as low-income communities tend to settle near canals and riverbanks (2015). The characteristics of flooding in Bangkok have changed over time, from a combination of upstream floods and local storm rainfalls to mostly local floods in the past two decades. Such change has resulted in the drainage infrastructures being frequently tested to their limits. The instability of the drainage systems is getting worse due to urbanisation, as well as, many argue, global warming (Worawiwat, 2021).

BMA has THB3,000 million (USD 110 million) set aside for flood response management this year. There is an urgent need for BMA to respond and mitigate the impacts of flooding whilst ensuring public money is spent effectively and efficiently. At the same time, BMA needs to communicate remedial actions taken to build public trust.

Building on the priorities identified in the workshop, a targeted open contracting project could focus on flood related procurements to

1. improve competition on flood tenders and contracts;
2. improve quality of flood related goods, services or public works;
3. drive better value for money from flood related spending; and
4. enhance public integrity and build trust on flood response.

This could include assessing whether contracts are targeted at those districts/areas experiencing the worst floods and developing data visualisations to show how and where money is being spent. This helps to test for quality, value for money and can help to enhance public trust by keeping citizens informed on how BMA is responding to flood needs.

With this reform goal in mind, the next steps for BMA are to

1. Publish and use data to inform decision-making. This includes
    a. identifying, collecting, structuring and digitising flood related information;
    b. introducing tags to make it easier to identify relevant contracting processes;
    c. adding geospatial dimensions or layers to flood procurement data; and
    d. analysing joined up datasets to understand what is working and what is not including applying open contracting red flag indicators and competition, efficiency and quality indicators.
2. Engage stakeholders and improve oversight. This includes
    a. engaging stakeholders (vendors, citizens, academia etc) to better understand needs and capacities;
    b. creating easy to use data tools and visualisations to help stakeholders understand what is being done to address flood problems and where; and
    c. establish complaints mechanisms to enable two-way dialogue between BMA and different stakeholders (vendors, citizens etc).
3. Measure, adapt and institutionalise reforms. This includes
    a. introducing requirements for procurement units to use these data tools in planning, executing or approving procurements;

b. monitoring progress by regularly assessing neighbourhood, community or citizen needs and to what extent BMA interventions are helping them; and
c. communicate actions and results so all stakeholders are better informed.

This is a simplified illustration for open contracting implementation. Moving forward, OCP remains on hand to support and work with BMA on the next steps in their implementation journey. In the interim, lessons can also be learned from other implementers around the world. See below:

Case Study: Assam's IDEA-FRM (India)

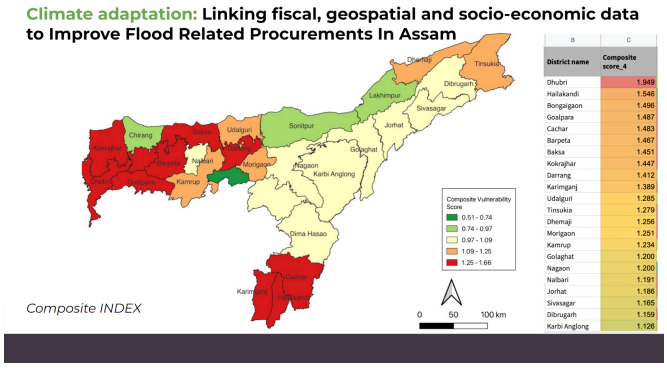
In India, OCP, and CivicDataLab are building an intelligent data model that will help decision-makers to improve flood response and relief procurement so that the poorest and most vulnerable people in the flood-prone state of Assam are better protected from the worst effects of extreme weather events.

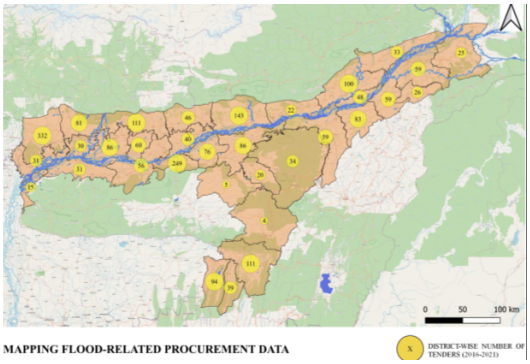
CivicDataLab uses open data to enable the Assam State Disaster Management Agency (ASDMA) to track flood relief, response, and preparedness spending, and to assess the extent to which this meets the needs of the most vulnerable communities at risk of floods.

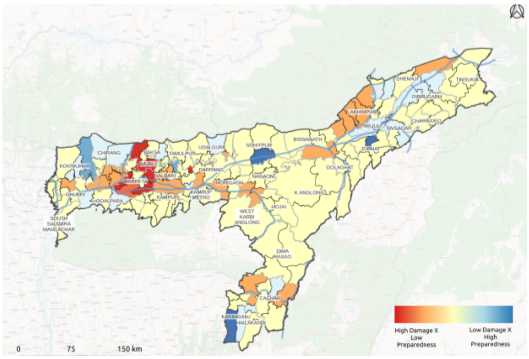
The analysis uses 72 variables of the dataset that falls under 5 broad categories, such as:

- **Satellite and weather data on flood proneness** e.g.rainfall trends, distance to rivers, elevation, slope, drainage density, vegetation density, built density, soil, and lithology;
- **Demographic data** such as population, sex ratio, child and elderly population, deprived population, household access to drinking water and sanitation, etc;
- **Access to infrastructure**: like hospitals, road networks, embankments, etc. that largely influence the response capacity of a region to floods;
- **Past damages**: such as a number of people affected, crops affected, road damages, etc and is geocoded; and
- **Government response** such as government procurement data, budget data, and relief distributed that is geocoded.

The analysis can be used to understand flood proneness, vulnerability, and how the government has responded to disasters. This analysis can be visualised through "heatmaps" which make it easier to understand where urgent interventions are needed and where flood procurements are targeted.



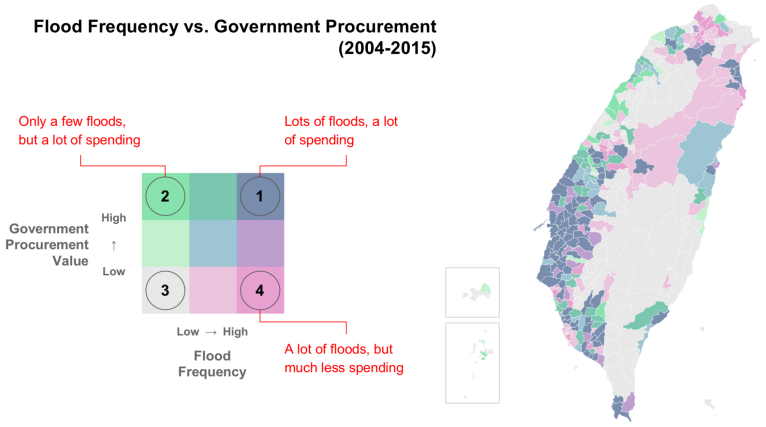




For further details on the Assam case study, see "A new open contracting model for disaster management in Assam, India"

Case Study: Follow the Water: Taiwan

BMA may also be interested in the Taiwan 'Follow the Water' case study, where flood patterns are compared against flood procurement patterns:



For further detail on the case study in Taiwan, see: "Follow the Water"

Option 2: Introducing Green Procurement

Air quality in Bangkok is often poor with the PM2.5 concentration currently 4.1 times the WHO annual air quality guideline value. Traffic, construction, factory emissions, residues from burning waste, exacerbated by weather conditions, are among the many factors contributing to air pollution in Bangkok (UNEP, 2019). In early 2023, this has caused an increased number of patients experiencing pollution-related health problems such as respiratory tract issues as well as dermatitis or eye inflammation (The Guardian, 26 Jan 2013)

So there is a case for BMA to address the pollution issue by greening public vehicles e.g. by switching from diesel/petrol to electric vehicles.

There were 2 approaches raised in the workshop, the first is to target all public vehicles and begin the transition to electric vehicles or the second, to target specific sectors such as public waste disposal vehicles (garbage trucks).

As detailed under Option 1 above, BMA will need to

1. Publish and use data to inform the decisions needed to pivot to electronic vehicles;
2. Engage stakeholders to understand the needs and capacities of the market; and
3. Measure, adapt and institutionalise reforms.

However, this option is potentially more complicated than Option 1 as it requires buy-in and cooperation from other ministries at the national level. Amendments to existing legislation or regulation to permit ToRs or tenders for specific goods such as electric vehicles may also be required.

Nonetheless, as a starting point, BMA could begin with

- measuring the baseline of current public vehicles purchases (what is being purchased, how many vehicles, carbon footprint of those vehicles etc);
- assigning tags to contracting processes to make it easier to identify those that relate to emissions or pollution;
- initiating digital transformation for procurement e.g. transitioning from paper based procurement processes to digital procurement (reducing paper usage etc);
- developing long term goals or strategic plan to phase in green purchases that can help reduce emissions and pollution e.g. electric vehicles for public transportation, garbage trucks, waste to energy plants to reduce reliance on fossil fuels etc.

OCP has developed many resources on sustainable procurement including:

- Open Sustainable Public Procurement Toolkit (Open SPP)
- Guide to Calculating Sustainable Procurement Indicators with OCDS data

OCP has also featured several stories on how different implementers around the world are working on sustainable procurement. This includes

- Mexico's bikeshare programme where effective pre-market consultations and vendor engagements helped to reduce operating costs by 54% whilst saving 5,700 tonnes of carbon emissions; and
- Lithuania's public procurement scoreboard which helps to track progress of how different government agencies are incorporating green criteria into procurement.

Option 3: Applying Red flags to Improve Internal Oversight

Low competition was one of the key challenges identified by BMA during the workshop sessions. Linked to this, trust is low so potential bidders do not bid for contracts due to a perception that there is little chance of winning. In turn, this affects the quality of goods, services and works.

One way of addressing these concerns is by applying open contracting red flags for integrity indicators which can help BMA to:

- understand the key players in the market (who is winning contracts), underserved or underrepresented vendor or supplier (who is not bidding for or winning contracts) groups e.g. SMEs, MSMEs, women owned businesses etc;
- assessing progress (or lack thereof) for diversifying vendor and supplier participation (are new vendors entering the market and bidding for or winning contracts); and
- identify and progressively mitigate public procurement risks such as bid rigging, collusion, false bidding, failure to meet contract specifications, etc;

One case study that can provide inspiration for BMA to replicate the red flag analysis to improve internal oversight can be found in Indonesia. See below:

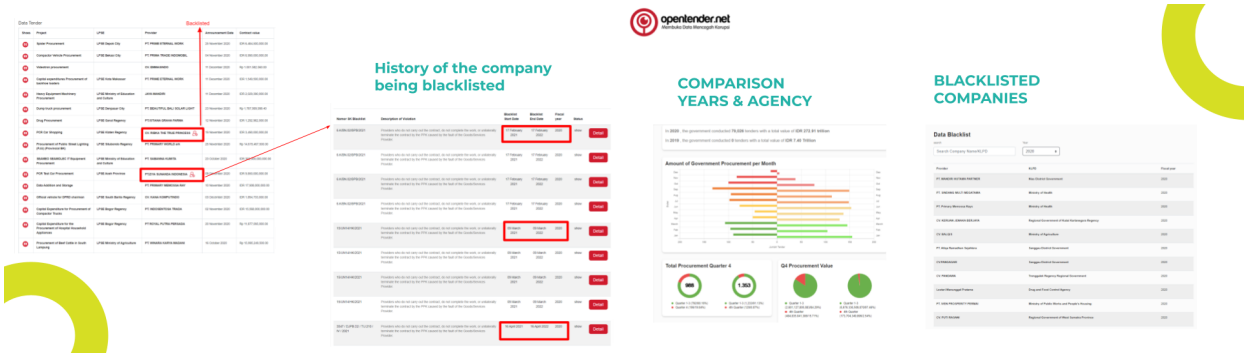
Case Study: Indonesia's Opentender.net: Red Flags Platform

Based on the existing datasets available for analysis as well as the context in Indonesia, Indonesia Corruption Watch (ICW) in partnership with the National Procurement Agency (LKPP) developed interactive dashboards for their opentender.net site so that government and citizens can monitor public procurement processes. This includes targeted dashboards for infrastructure and COVID-19, as well as a dashboard covering all procurement.

Using open contracting red flag indicators and use case indicators, these dashboards show multiple different and easy to understand visualisations of complex data analysis, including:

- a traffic light system to helps users easily identify contracts with at risk of corruption (red means high risk, yellow means moderate risk, green means low risks);
- vendors' performance history including if they have been blacklisted in the past, repeat winners and whether there are any patterns to winning or losing contracts which may indicate potential collusion with other vendors; and
- agency performance history such as the proportion of failed or cancelled tenders, or propensity for fourth quartile contracting (suggests poor planning driven by need to spend allocated budgets).

Below are examples of the dashboards and the type of visualisation that aid understanding:



To learn more about how the published data have been used, see infrastructure data analysis, spotting corruption with data, and the impact of a 10-year collaboration between the government and civil society for a better procurement monitoring process.

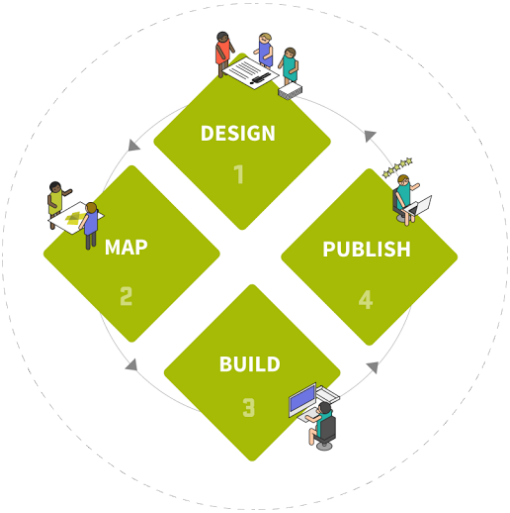
5. Data Usability: Findings & Recommendations

In addition to the scoping and design work detailed above, OCP also worked with BMA to develop understanding of their data and data systems. This is one of the key stages of any open contracting implementation, helping decision-makers to understand what the data can tell them and how the data can be used to drive forward their reform goals.

This chapter focuses on the technical aspects of open contracting data publication and use. This analysis was carried out in close consultation with the BMA MIS and eGP team.

Data implementation journey

There are four stages included in the implementation of Open Contracting Data Standard (OCDS): **Design, Map, Build,** and **Publish**.



The **Design** stage is all about setting goals and defining priorities in order to better define milestones and measure results. At this stage, OCP encourages publishers to analyse their context, set their goals and priorities, identify stakeholders, and build the team responsible for OCDS implementation.

The **Map** stage is all about documenting sources of contracting data, and establishing how that data "maps" to OCDS – that is, identifying which data elements within data sources match which OCDS fields and codes. During this stage, OCP invites data publishers to conduct Technical assessment and fill out a Field-Level Mapping Template.

> *The Technical Assessment* is meant to identify which IT systems capture and store contracting data and related documents, and how those systems might be connected in order to get a complete picture of the contracting process.
>
> *The Field-Level Mapping Template* is used to identify how data captured by existing IT systems map to OCDS Schema. This mapping will be later used for building middleware in order to transform data from existing systems to a format required by OCDS.

The **Build** stage is all about creating a new or updating an existing IT system in order to transform data from existing sources to OCDS Schema. During this stage, publishers define their system architecture, establish their publication formats and access methods, and, finally, build a data pipeline in order to transform data and check it before publication.

Finally, the **Publish** stage is about providing access to contracting data in OCDS format. During this stage, OCP encourages defining a clear data publication policy and selecting a proper licence.

The current project covers the first two stages of the OCDS implementation journey. The main data-related activities at this stage are Technical Assessment Template and Field Level Mapping Template.

Technical Assessment

In their completed technical assessment, Bangkok Metropolitan Administration (BMA) described several IT systems that contain data related to contracting processes.

eGP system - is the main IT system that facilitates every stage of the procurement process in Thailand. The system is managed and run by Thailand's Comptroller General's Department (CGD) under the Ministry of Finance.

eGP of BMA - is a tender notice dissemination channel managed by BMA. The channel is developed according to the Government Procurement and Inventory Management Act B.E. 2560 (2017) required by the Ministry of Thailand.

BMA Management Information System (MIS) - consists of various information and functions in the BMA procurement process e.g. revenue, budget, finance, accounting, procurement, recruitment, asset inventory, central inventory management, etc.

These three systems combined provide information related to all stages of the contracting process. BMA workflow explains that eGP CGD system and MIS effectively contain the same procurement data, as the same information is entered into both systems - first into eGP CGD, then into MIS. However, MIS does not store any procurement-related documents (such as tender descriptions in PDF files).

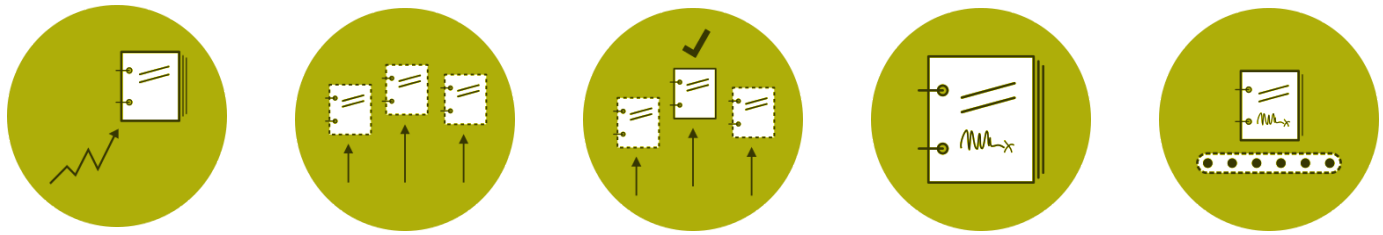
OCP's validation meeting with the MIS team member confirmed that joining data from different systems is challenging, so in terms of producing data publication there should be just one source. MIS can serve as this primary source of information.

This validation meeting also established that MIS is already being used as a data source for procurement analysis. Online service BMA Data Warehouse provides dashboards related to Financial Overview of Bangkok, Financial overview of District Offices under the BMA, and the Financial information of the district office. Data for these dashboards comes from the MIS.

Field Level Mapping Template

Using OCP's Field-Level Mapping Template, BMA **mapped 82 fields** from its data sources to the OCDS Schema. eGP BMA and MIS systems served as the main sources for the mapping.

The information that is currently mapped covers all 5 stages of the contracting process: planning, tender, award, contract, and implementation.

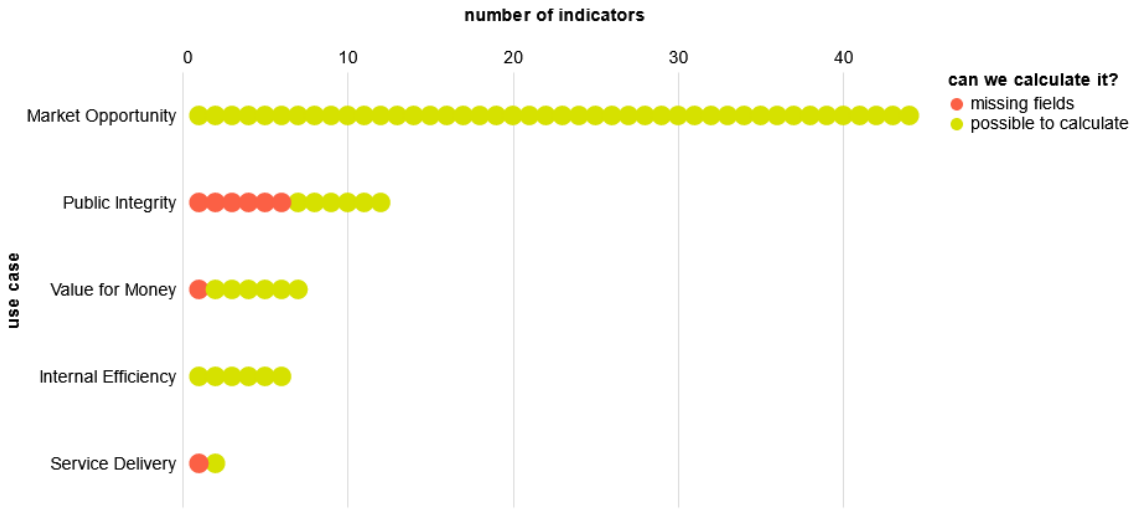


Planning **Tender** **Award** **Contract** **Implementation**

The table below lists the number of fields mapped by the procurement stage.

Procurement stage	Number of fields mapped
General (all stages)	26
Planning	5
Tender	18
Award	19
Contract	5
Implementation	4

Out of the 71 indicators reviewed, BMA has the fields to **potentially calculate 63 indicators**, 44 of which related to market opportunity, 6 related to public integrity, 6 related to value for money, 6 related to internal efficiency, and 1 to service delivery.



Potential OCDS use-case indicators can be calculated by BMA dataset

Market opportunity indicators

Generating market opportunities in public procurement means giving suppliers fair and equal access to procurement opportunities in order to improve competition, allow for more vendor diversity, and enable innovation. This use case relates to using open contracting data, to understand and describe the procurement market, analyse competition, and evaluate supplier performance.

Out of the 44 recommended **indicators** related to **market opportunity**, all **44 could be calculated** based on the availability of fields.

The table below lists the indicators related to market opportunity, along with the indication of whether they could be calculated based on the availability of fields.

Use case	Indicator	Is it possible to calculate?
Market Opportunity	Total number of procedures	Yes
	Total number of procuring entities	Yes
	Total number of unique bidders	Yes
	Total number of awarded suppliers	Yes
	Total number of procedures by year or month	Yes
	Total value awarded	Yes
	Share of procedures by status	Yes
	Number of procedures by item type	Yes
	Proportion of procedures by procurement category	Yes
	Percent of tenders by procedure type	Yes
	Percent of tenders awarded by means of competitive procedures	Yes
	Percent of contracts awarded under each procedure type	Yes
	Total contracted value awarded under each procedure type	Yes
	Total awarded value of tenders awarded by means of competitive procedures	Yes
	Proportion of single bid tenders	Yes
	Proportion of value awarded in single bid tenders vs competitive tenders	Yes
	Mean number of bidders per tender	Yes
	Median number of bidders per tender	Yes
	Mean number of bidders by item type	Yes
	Number of suppliers by item type	Yes
	Number of new bidders in a system	Yes
	Percent of new bidders to all bidders	Yes
	Percent of tenders with at least three participants deemed qualified	Yes
	Mean percent of bids which are disqualified	Yes
	Percent of contracts awarded to top 10 suppliers with the largest contracted totals	Yes
	Mean number of unique suppliers per buyer	Yes

	Number of new awarded suppliers	Yes
	Percent of awards awarded to new suppliers	Yes
	Total awarded value awarded to new suppliers	Yes
	Percent of new suppliers to all suppliers	Yes
	Percent of growth of new awarded suppliers in a system	Yes
	Percent of total awarded value awarded to recurring suppliers	Yes
	Mean number of bids necessary to win	Yes
	Market concentration, market share of the largest company in the market	Yes
	Proportion of contracts awarded by the supplier by non-competitive procedures	Yes
	Region of the supplier	Yes
	Number of bids submitted by supplier	Yes
	Success rate of bidders	Yes
	Number of unique items classifications awarded by supplier	Yes
	Total value awarded by supplier	Yes
	Share of total value awarded by supplier	Yes
	Total number of contracts awarded by supplier	Yes
	Number of procuring entities by supplier	Yes
	Share of single bid awards by supplier	Yes

Internal Efficiency indicators

Internal efficiency refers to ensuring that the financial, time, and human resource investments in a procurement process ultimately result in high quality service delivery and value for money. It helps governments to drive the best procurement practices and systems while reducing the resources needed, such as money or personnel time. Inefficiencies might arise due to poor systems or institutional frameworks that generate time delays and high transactional costs, complex technical processes, silos of information, and lack of contract and award management processes, among others.

Publishing key dates of the different stages of the process, the status of the tender, award, and contract, are particularly relevant to analyse internal efficiency.

Out of the 6 indicators related to internal efficiency, all **6 indicators could be calculated** based on the availability of fields.

The table below lists the indicators related to internal efficiency, along with the indication of whether they could be calculated based on the availability of fields.

Use case	**Indicator**	**Is it possible to calculate?**

Internal Efficiency	Average duration of tendering period days	Yes
	Average duration of decision period days	Yes
	Average days from award date to start of implementation	Yes
	Days between award date and tender start date	Yes
	Percent of cancelled tenders to awarded tenders	Yes
	Percent of contracts which are cancelled	Yes

Value for Money indicators

Value for money refers to the effective, efficient and economical use of resources in public procurement across the different stages of the process. This means value for money might not be achieved considering only the price, but also by assessing other non-price attributes such as the quality of the items purchased and the efficiency of the process. In public procurement, for instance, value for money can be achieved when a contract is implemented competently (in a quality manner and in accordance with specifications) in a timely manner (achieving specified milestones by the specified dates) for a competitive price (at or below estimate).

Out of the 7 indicators related to value for money, **6 indicators could be calculated** based on the availability of fields.

The table below lists the indicators related to value for money, along with the indication of whether they could be calculated based on the availability of fields.

Use case	**Indicator**	**Is it possible to calculate?**
Value for Money	Price variation of same item across all awards	No
	Percent of contracts that exceed budget	Yes
	Mean percent overrun of contracts that exceed budget	Yes
	Total percent savings difference between budget and contract value	Yes
	Total percent savings difference between tender value estimate and contract value	Yes
	Percent of contracts completed on time	Yes
	Share of contracts whose milestones are completed on time	Yes

Key data gaps related to value for money

A **key data gap** related to the **value for money** use case is the **publication of the information about tender items**.

The table below lists **2 missing fields** for the value-for-money use case, along with their descriptions and the number of indicators relying on each field. Addressing these key data gaps will result in the ability to calculate more indicators related to the value-for-money use case.

Use case	Field	Description	Number of indicators relying on this field
Value for Money	tender/items/unit	A description of the unit in which the supplies, services, or works are provided (e.g. hours, kilograms) and the unit price.	1
	tender/items/quantity	The number of units to be provided.	1

Public Integrity indicators

Public integrity refers to the consistent alignment of, and adherence to, shared ethical values, principles, and norms for upholding and prioritising the public interest over private interests in the public sector (OECD). In public procurement, this use case relates to identifying, preventing, and combating corruption, fraud, and other types of illicit behaviour.

Proactively calculating red flag indicators and applying risk detection methods, using open procurement data, allow for the detection of potential corruption and fraud before it happens and deter illicit behaviour. This changes the anti-corruption approach from punitive to preventative. Monitoring anomalous procurement behaviour, even when that behaviour isn't actually the result of a corrupt or illicit process, can help governments identify and resolve overarching inefficiencies in the procurement ecosystem and recommend policy and technical changes.

To calculate indicators related to public integrity fields related to key documents from the different stages, the details of the bids (including who are the bidders and the values they offer), the item details, the value amounts of different stages of the process, the procurement method used and key dates, are particularly relevant.

Out of the 12 public integrity indicators, **6 could be calculated** based on the availability of fields.

The table below lists the indicators related to public integrity, along with the indication of whether they could be calculated based on the availability of fields.

Use case	Indicator	Is it possible to calculate?
Public Integrity	Percent of tenders with linked procurement plans	No
	Percent of contracts which publish information on debarments	No

	The percent of tenders for which the tender documentation was added after the publication of the announcement	No
	Mean number of contract amendments per buyer	Yes
	Percent of tenders which have been closed for more than 30 days, but whose basic awards information is not published	Yes
	Percent of awards which are older than 30 days, but whose contract is not published	No
	Percent of tenders that do not specify the place of delivery	No
	Percent of tenders that do not specify the date of delivery	No
	Percent of tenders with short titles, for example, fewer than 10 characters in the title	Yes
	Percent of tenders with short descriptions, for instance, fewer than 30 characters in the description	Yes
	Percent of tenders that do not include detailed item codes or item descriptions	Yes
	Percent of contracts that do not have amendments	Yes

Key data gaps related to public integrity

A **key data gap** related to the **public integrity** use case is the **publication of the tender and contract documents** along with the information related to tender milestones.

The table below lists **9 missing fields** for the public integrity use case, along with their descriptions and the number of indicators relying on each field. Addressing these key data gaps will result in the ability to calculate more indicators related to the public integrity use case.

Use case	**Field**	**Description**	**Number of indicators relying on this field**
Public Integrity	tender/documents/documentType	A classification of the document described, using the open documentType codelist.	3
	tender/milestones/type	The nature of the milestone, using the open milestoneType codelist.	1
	tender/milestones/id	A local identifier for this milestone, unique within this block. This field is used to keep track of multiple revisions of a milestone	1

		through the compilation from release to record mechanism.	
	tender/milestones/dueDate	The date the milestone is due.	1
	tender/milestones/description	A description of the milestone.	1
	tender/items/deliveryAddress	The address to which, or where, goods or services related to this tender, contract or licence will be delivered.	1
	tender/documents/datePublished	The date on which the document was first published. This is particularly important for legally important documents such as notices of a tender.	1
	contracts/implementation/documents/documentType	A classification of the document described, using the open documentType codelist.	1
	contracts/documents/documentType	A classification of the document described, using the open documentType codelist.	1

Service Delivery indicators

Service delivery relates to monitoring how public contracting delivers value to citizens in terms of the quality of goods, works, and services provided. This involves being able to analyse in detail the implementation stage of the contracts, to verify whether the goods, works and services procured are being delivered in a timely manner, with good quality, and at the agreed price. In addition to that, assessing the transactions, contract amendments and subcontracting arrangements is particularly important.

Out of the 2 indicators related to service delivery, **1 indicator could be calculated** based on the availability of fields.

The table below lists the indicators related to service delivery, along with the indication of whether they could be calculated based on the availability of fields.

Use case	**Indicator**	**Is it possible to calculate?**
Service Delivery	Percent of contracts which publish contract implementation details financial	Yes
	Percent of contracts which publish contract implementation details physical	No

Key data gaps related to service delivery

A key data gap related to the service delivery use case is the publication of the information related to contract implementation - specifically milestones.

The table below lists **1 missing field** for the service delivery use case, along with its description and the number of indicators relying on this field. Addressing this key data gap will result in the ability to calculate more indicators related to the service delivery use case.

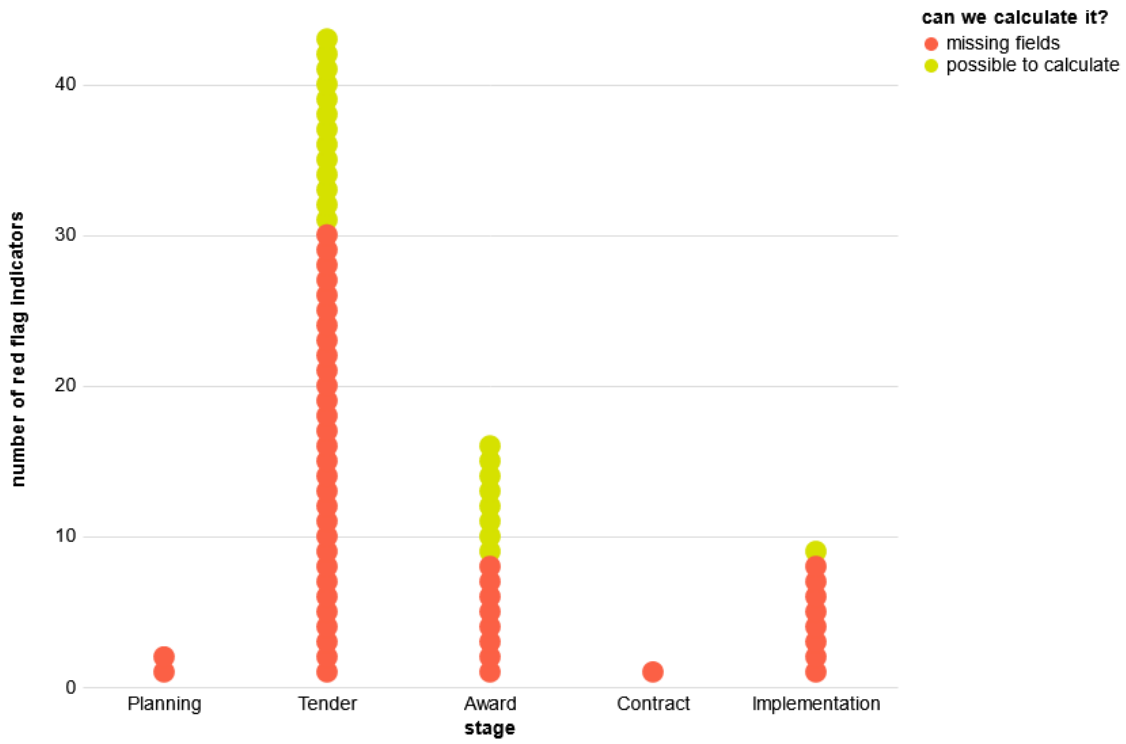
Use case	Field	Description	Number of indicators relying on this field
Service Delivery	contracts/implementation/milestones/type	The nature of the milestone, using the open milestoneType codelist.	1

Red flags indicators

In addition to indicators related to market opportunity, public integrity, value for money, internal efficiency, and service delivery, we also checked whether it is possible to calculate red flags indicators.

Red flags in procurement refer to warning signs or indicators that suggest there may be potential issues or risks in a procurement process. These red flags are signals that procurement professionals should be aware of and investigate further to ensure that the procurement process is fair, transparent, and free from any improprieties.

Out of the **71 red flags indicators** reviewed, the OCDS data publication would have the fields to potentially calculate **22 indicators.**



Potential red flag indicators can be calculated by BMA dataset

Most red flag indicators that can be potentially calculated based on the availability of fields are related to tender and award stages of the contracting process.

The table below lists the red flag indicators, along with the indication of whether they could be calculated based on the availability of fields.

Planning stage

At this stage of the contracting process, red flags are related to the availability of key planning documents and manipulation of procurement thresholds. A lack of planning documents could signal poor procurement planning or integrity risks. And threshold manipulation could be used to avoid competition or prior review, and to facilitate the awards of contracts to favoured bidders.

Out of the 2 red flags indicators related to the planning stage, **none could be calculated** based on the availability of fields.

The table below lists the red flag indicators related to the planning stage, along with the indication of whether they could be calculated based on the availability of fields.

Stage	Indicator	Is it possible to calculate?
Planning	Key planning documents are provided	No
	Manipulation of procurement thresholds	No

Key data gaps related to the planning stage

Key data gaps related to this stage are the publication of information about budget and the related documents.

The table below lists **2 missing fields** for the planning stage, along with their descriptions and the number of red flags indicators relying on each field. Addressing these key data gaps will result in the ability to calculate more red flags and indicators related to the planning stage.

Stage	Field	Description	Number of indicators relying on this field
Planning	planning/documents/documentType	A classification of the document described, using the open documentType codelist.	1
	planning/budget/amount	The value reserved in the budget for this contracting process.	1

Tender stage

At this stage of the contracting process, red flags are related to dissemination of tender notices, availability of key tender information and documents, bidding statistics, the potential connection between bidders and suppliers, similarities between bidders, availability of background information about bidders.

Out of the 43 red flags indicators related to the tender stage, **13 could be calculated** based on the availability of fields.

The table below lists the red flag indicators related to the tender stage, along with the indication of whether they could be calculated based on the availability of fields.

Stage	Indicator	Is it possible to calculate?
Tender	Short or inadequate notice to bidders to submit expressions of interest or bids	Yes

	Failure to adequately advertise the request for bids or proposals	No
	Key tender information and documents are available	No
	Unreasonable prequalification requirements	No
	Vague, ambiguous, unreasonably strict or narrow, or incomplete specifications	No
	Failure to make bidding documents available to all bidders	No
	Buyer increases the cost of the bidding documents	No
	Bundling tenders in unreasonably large or small amounts to discourage or eliminate certain bidders	Yes
	Splitting purchases to avoid procurement thresholds	Yes
	Direct awards in contravention to the provisions of the procurement plan	No
	Tender is invitation only	No
	Short time between tender advertising and bid opening	No
	Long time between bid opening and bid evaluation	No
	Tender value is higher or lower than average for this item category	No
	Unreasonably low or high line item	No
	Single bid received	Yes
	Low number of bidders for item and procuring entity	Yes
	Tender has a complaint	No
	Inappropriate evaluation criteria or procedures	No
	Wide disparity in bid prices	Yes
	Bids are an exact percentage apart	Yes
	Winning bid is just under the next lowest bid	No
	Perennial losing bidders give appearance of legitimate competition when they have no intention of actually winning	Yes
	Prevalence of joint bid patterns (consortia)	Yes
	Potential bidders make agreements not to bid because of Collusion arrangements (Missing bidders)	Yes
	Line item bid prices by different bidders are identical, very close or an exact percentage apart	No
	Losing bids are round numbers	No
	Improper acceptance of a late bid or late discounts	Yes
	Bid is too close to budget, estimate or preferred solution	Yes

	Persistently high or increasing bid prices compared to cost estimates, price lists, previous prices similar jobs or industry averages	No
	Late bidder is the winning bidder	No
	Bidders submit bids in subsequent re-bidding rounds in same order as in original bid	No
	Only winning bidder was eligible	No
	Lowest bidder is disqualified	No
	Poorly supported disqualifications	No
	High number of bid disqualifications	No
	Unanswered bidder questions	No
	Close relationships exists between bidder and buyer	Yes
	Physical similarities in documents by different bidders	No
	Supplier (or bidder) has abnormal address or phone number	No
	Supplier (or bidder) address is same as project officials	No
	Business similarities between suppliers (or bidders): common addresses, personnel, phone numbers, etc	No
	Supplier does not have internet presence	No

Key data gaps related to tender stage

Key data gaps related to this stage is the publication of information about budget and the related documents.

The table below lists **28 missing fields** for the tender stage, along with their descriptions and the number of red flags indicators relying on each field. Addressing these key data gaps will result in the ability to calculate more red flags indicators related to the tender stage.

Stage	**Field**	**Description**	**Number of indicators relying on this field**
Tender	parties/identifier/id	The identifier of the organisation in the selected scheme.	7
	tender/documents/documentType	A classification of the document described, using the open documentType codelist.	6
	bids/details/tenderers/name	The name of the party being referenced.	6

	bids/awards/relatedBid	Where bid details are used, a cross reference to the entry in the bids array to which this award relates. Provide the bid identifier here.	5
	tender/items/unit	A description of the unit in which the supplies, services or works are provided (e.g. hours, kilograms)	3
	tender/items/quantity	The number of units to be provided.	3
	tender/documents/datePublished	The date on which the document was first published. This is particularly important for legally important documents such as notices of a tender.	3
	tender/bidOpening/date		3
	tender/awardCriteria	The award criteria for the procurement, using the open awardCriteria codelist.	2
	planning/documents/documentType	A classification of the document described, using the open documentType codelist.	2
	bids/details/documents	All documents and attachments related to the bid and its evaluation.	2
	tender/procurementMethodRationale	Rationale for the chosen procurement method. This is especially important to provide a justification in the case of limited tenders or direct awards.	1
	tender/participationFees/value/currency	The currency of the amount, from the closed currency codelist.	1
	tender/participationFees/value/amount	Amount as a number.	1
	tender/enquiries/dateAnswered	The date the answer to the question was provided.	1
	tender/enquiries/date	The date the enquiry was received or processed.	1
	tender/enquiries/answer	The answer to this question, when available.	1

	tender/awardPeriod/startDate	The start date for the period. When known, a precise start date must be provided.	1
	parties/identifier/name	The legally registered name of the organisation.	1
	parties/contactPoint/url	A web address for the contact point/person.	1
	parties/contactPoint/email	The e-mail address of the contact point/person.	1
	complaints/documents		1
	complaints/description		1
	complaints/date		1
	bids/documents/url	A direct link to the document or attachment. The server providing access to this document ought to be configured to correctly report the document mime type.	1
	bids/documents/title	The document title.	1
	bids/documents/documentType	A classification of the document described, using the open documentType codelist.	1
	bids/documents/description	A short description of the document.	1

Award stage

At this stage of the contracting process, red flags are related to detection of suspicious awards, for example, high number of direct awards to one bidder, cases with suppliers winning bids for items or services they are unlikely to provide, substantial differences between contract prices and winning bid price, etc.

Out of the 16 red flags indicators related to the award stage, **8 could be calculated** based on the availability of fields.

The table below lists the red flag indicators related to the award stage, along with the indication of whether they could be calculated based on the availability of fields.

Stage	**Indicator**	**Is it possible to calculate?**
Award	Supplier wins bids for item or service types it is unlikely to have, or higher quantities of items or services it is unlikely to be able to provide	No
	High number of direct awards to one bidder	Yes

	One or a few bidders win a disproportionate number of contracts of the same type	No
	High market concentration	No
	Small initial purchase from supplier followed by much larger purchases (first purchase is to test whether it will be accepted)	Yes
	The same companies always bid, the same companies always win and the same companies always lose	Yes
	Awards below the competitive bid threshold followed by change orders that exceed the threshold	No
	Multiple direct awards above or just below the direct award threshold	Yes
	The winning bid does not meet the award criteria	No
	Rotation of winning bidders by job, type of work or geographical area	No
	Winning supplier provides a substantially lower bid price than other bidders	No
	Large difference between the award value and final contract amount	Yes
	Large difference between contract price and winning bid price	No
	Long unexplained delays in contract negotiations or awards (ex: as bribe demands are negotiated)	Yes
	Decision period for submitted bids excessively short	Yes
	Decision period for submitted bids excessively long or involved legal challenge	Yes

Key data gaps related to award stage

Key data gaps related to this stage is the publication of information about items awarded, bid details, award criteria, and amendments to contracts.

The table below lists 9 missing fields for the award stage, along with their descriptions and the number of red flags indicators relying on each field. Addressing these key data gaps will result in the ability to calculate more red flags indicators related to the award stage.

Stage	**Field**	**Description**	**Number of indicators relying on this field**
Award	awards/items/classification/id	The classification code taken from the scheme.	4

	bids/details/tenderers/name	The name of the party being referenced.	2
	bids/awards/relatedBid	Where bid details are used, a cross reference to the entry in the bids array to which this award relates.	2
	tender/awardCriteria	The award criteria for the procurement, using the open awardCriteria codelist.	1
	parties/address/addressDetails/region		1
	contracts/amendments/description	A free text, or semi-structured, description of the changes made in this amendment.	1
	bids/details/tenderers/id	The id of the party being referenced.	1
	bids/details/documents	All documents and attachments related to the bid and its evaluation.	1
	awards/items/quantity	The number of units to be provided.	1

Contract stage

At this stage of the contracting process, the red flag is related to the availability of the contract.

A high rate of awards without contract information may signal a lack of integrity. The absence of the contract can signal that the tender process was not fully completed.

Out of the 1 red flag indicator related to the contract stage, **none could be calculated** based on the availability of fields.

The table below lists the red flag indicator related to the contract stage, along with the indication of whether they could be calculated based on the availability of fields.

Stage	**Indicator**	**Is it possible to calculate?**
Contract	Contract is not public	No

Key data gaps related to contract stage

Key data gaps related to this stage is the publication of contract documents.

The table below lists **1 missing field** for the contract stage, along with its description and the number of red flags indicators relying on this field. Addressing this key data gap will result in the ability to calculate a red flag indicator related to the contract stage.

Stage	Field	Description	Number of indicators relying on this field
Contract	contracts/documents/documentType	A classification of the document described, using the open documentType codelist.	1

Implementation stage

At this stage of the contracting process, red flags are related to changes in orders after contract award, suspicious subcontracts, delivery failures and discrepancies between contract specifications and works completed.

Out of the 9 red flag indicators related to the implementation stage, **1 could be calculated** based on the availability of fields.

The table below lists the red flag indicators related to the implementation stage, along with the indication of whether they could be calculated based on the availability of fields.

Stage	Indicator	Is it possible to calculate?
Implementation	Change orders issued after contract award, reducing or deleting item	No
	Change orders issued after contract award, extending the line item requirements	No
	Delivery failure	No
	Total payments to a contractor exceeding total contract or purchase order amounts	Yes
	Approval of unnecessary change orders to increase the contract price after the award	No
	Losing bidders are hired as subcontractors or suppliers	No
	A contractor subcontracts all or most of the work received (indicating it could be a shell company)	No
	Prevalence of subcontracting	No
	Discrepancies between work completed and contract specifications	No

Key data gaps related to implementation stage

Key data gaps related to this stage is the publication of information about contract amendments and documents, bid details and tender documentation.

The table below lists **11 missing fields** for the implementation stage, along with their descriptions and the number of red flags indicators relying on each field. Addressing these key data gaps will result in the ability to calculate more red flags indicators related to the implementation stage

Stage	Field	Description	Number of indicators relying on this field
Implementation	awards/hasSubcontracting		3
	contracts/amendments/description	A free text, or semi-structured, description of the changes made in this amendment.	3
	contracts/amendments/rationale	An explanation for the amendment.	2
	contracts/amendments/date	The date of this amendment.	2
	tender/documents/documentType	A classification of the document described, using the open documentType codelist.	1
	contracts/implementation/milestones/type	The nature of the milestone, using the open milestoneType codelist.	1
	contracts/implementation/documents/documentType	A classification of the document described, using the open documentType codelist.	1
	contracts/documents/documentType	A classification of the document described, using the open documentType codelist.	1
	bids/details/tenderers/name	The name of the party being referenced.	1
	awards/subcontracting/minimumPercentage		1

Recommendations for Open Contracting Data

Since our technical analysis is based purely on the availability of fields and not the actual data, it only shows the potential of the data. But in order to fulfil this potential, BMA has to produce actual data publication and make use of this data. This data publication journey will require

building a dedicated team, developing a data transformation pipeline, coming up with a data publication policy, publishing data, and finally using it.

Build a team

While there is definitely high-level political buy-in for open contracting in Bangkok, there might not be enough people working on open contracting on a daily basis. We recommend building a dedicated open contracting team inside BMA in order to ensure successful OCDS implementation as well as to drive impactful open contracting reform.

OCP encourages BMA to have, as a minimum requirement, a dedicated project manager to lead open contracting development inside BMA and coordinate the efforts of different departments.

Build data transformation pipeline

At this stage, it is important to determine the system architecture for data publication. This system architecture should include tools or modules to extract data from existing data sources, combine it, transform into OCDS format, and publish it.

OCP encourages providing data in multiple formats so that as many users as possible can use the data without first having to transform it to their preferred format. It means publishing both structured JSON data and tabular CSV or spreadsheet data.

OCP also encourages providing multiple access methods for data - for instance both bulk downloads and API.

Publish Data

Once data is transformed, it is important to assess its quality, finalise data publication policy and licence, and finally publish data on open data portal or dedicated procurement portal. Once data is published, it is important to provide timely updates.

In this particular case, data publication could be broken down into several stages:

1. Publish data inventory along with OCDS mapping
2. Publish non-OCDS data
3. Publish OCDS data

Use data and engage with users

It is not sufficient to only publish data - it is important to use it to improve public procurement practices and policies. Developing a dashboard with a set of selected indicators and/or red flags would be a good start. Such a dashboard would provide a broad overview of the procurement market and help detect major problems and areas of improvement.

It is also important to encourage data use by civil society organisations, think tanks, and journalists, and continuously improve data quality, data publication practices, and procurement practices based on their input.

6. Limitations, Learnings, and Risks

Throughout this project, BMA and key related stakeholders have been highly committed and very responsive. BMA has been very supportive in providing the necessary information and filling out the templates needed for OCP to carry out technical analysis. However, **time constraints** due to the short project duration posed some challenges. A longer duration for collaboration would have been beneficial to enable deeper diagnosis of BMA's current status, needs, and capacity to implement the open contracting initiative.

Another limitation lies in the national and local governance structures. Some of the key problems discussed in the BMA procurement process are outside of BMA's jurisdiction and national government's approval is required e.g. the Comptroller General's Department.

- While almost all stages of the contracting process are covered by data available in the Management Information System (MIS), **some data - like details of tender announcements and documents in general - is only available in the eGP CGD system**. Even though eGP CGD provides access to its data via API, and some but not all documents are available via API, therefore linking data between two systems might be challenging from a technical perspective. So, while data in MIS should be sufficient for OCDS publication, inevitably there will be some data gaps. Addressing those gaps will require coordination with CGD and potentially adjusting data collection practices.
- There are also **other** types of **datasets** that are currently **not** available in **open data** format and are **siloed** in different department units e.g. flood data, location on flood procurement projects, socioeconomic data, and population data. A specific and targeted intervention on improving dataset structure and turning it into an open data format is required for enabling automation for analysis within BMA to help with decision/policy making.

Moving forward, depending on the Implementation Option, coordination with different agencies will also be required to ensure success. For example, for Option 3 Applying Red Flags to Improve Oversight, coordination with the National Anti Corruption Commission would be beneficial.

One of the key risks that OCP finds in this project is resources and capacity. Translation costs in particular form a large part of expenditure and this will need to be factored in on future projects. Whilst there is strong commitment going all the way up to the highest levels of BMA including the Governor and Deputy Governor to implement open contracting, the lack of certainty in future **resources (funding)** for the next phase might affect the high levels of commitment and interest. To maintain momentum in the interim,

- BMA is encouraged to apply for OCP's Lift program. If selected, BMA would receive technical support from OCP over a period of 18 months which could help bridge resourcing gaps until further funding and resources are secured e.g. through FCDO support; and
- OCP can help carry out analysis on BMA datasets to understand the baselines for competition, efficiency, quality, value for money and corruption risks (red flags). To enable OCP to do this, BMA should share data on a subset of procurements e.g. on flood procurements covering a span of 5 years.

7. Conclusion

As a result of this project, BMA now has 3 clear implementation options for open contracting. These are:

1. Improving flood procurement;
2. Introducing green procurement; and
3. Applying red flags for integrity.

Of these options, BMA leadership are most interested in **Option 1: Improving flood procurement.** This option is the most straightforward of the 3 options and addresses multiple different use cases identified through the scoping and design workshops i.e. improving competition, efficiency, value for money and quality goods and services. In addition, OCP's red flag indicators can also be applied to flood procurement to help BMA identify potential integrity risks. Furthermore, climate, environmental and social goals are increasingly the focus of public procurement reformers all around the world. **BMA has the opportunity here to lead by example and spearhead innovation** that could be replicated in other regions, countries or cities also struggling with floods and storms.

BMA also has a significant amount of data; Management Information System (MIS) and eGP system contains 82 fields that can be potentially used to calculate various open contracting indicators. Out of the 71 indicators reviewed, BMA has the data fields to potentially calculate 63 indicators, 44 of which related to market opportunity, 6 related to public integrity, 6 related to value for money, 6 related to internal efficiency, and 1 to service delivery. Out of the 71 red flags indicators reviewed, BMA has the fields to potentially calculate 22 indicators for red flags. Key data gaps for red flag indicators are related to the publication of tender and awards details, tenderers and their bids, contract amendments and milestones, and complaints. This is an excellent starting point for open contracting implementation. This means that **BMA can proceed with analysing and understanding their procurements independently** of any support or data contributions from other ministries or agencies.

Whilst OCP, BMA and FCDO continue to explore potential opportunities for collaboration and resourcing, there are some **immediate next steps that can be taken** to maintain momentum and capitalise on the energy and results of this project. These include:

1. BMA to confirm the implementation option they would like to start with i.e. flood procurement;
2. BMA to appoint a dedicated project manager/team in charge of open contracting to ensure adequate staff time and commitment to implementation;
3. BMA to develop a proposal (with OCP) and apply for OCP's Lift Impact Accelerator programme to maintain momentum for open contracting and continue to receive strategic and technical support from OCP;
4. BMA to coordinate with OCP to join the G20 Global Smart Cities Alliance (GSCA) reiterating commitments to implement open contracting which will be recognised by on the global stage;
5. BMA to provide data on flood-related projects and contracts so that OCP can help with early analysis that can help inform BMA on current performance and progress;
6. BMA to reform their data management system by adopting the recommendations in Chapter 5.

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