

**Big Data, Big Reforms:
Policy Hackathon 2025**

National Contractor Risk Scoring System



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The Problem



The effective execution of the national infrastructure agenda in the Philippines is fundamentally compromised by inherent weaknesses in public procurement governance. These systemic failures facilitate corrupt practices, allow monopoly through market distortion, and introduce excessive administrative discretion, ultimately leading to project failure, fiscal leakage, and diminished public trust. Specifically, the current system lacks a consolidated, objective, and predictive mechanism to assess contractor risk, relying on fragmented data and delayed sanctions that allow disqualified or opaque entities to evade accountability and repeatedly win contracts. The National Contractor Risk Scoring System is designed to address these critical vulnerabilities. This policy is aimed at establishing a data-driven barrier to ensure public funds are entrusted only to demonstrably qualified and transparent contractors.



Policy Solution

The National Contractor Risk Scoring System is a unified, automated platform that integrates existing procurement and performance data and assigns each contractor a standardized risk score. This score enables agencies to identify high-risk contractors before awarding projects, reduce discretion, and enhances transparency.

 Data Integration and Consolidation

 Public Transparency Portal

 Automated Contractor Risk Scoring

 Preventive Anti-Corruptive Measures

 Pre-Award Risk Alerts and Decision Support

 Improved Infrastructure Quality and Fiscal Outcomes



AI in Risk Scoring



Implementing Agencies and Institutional Responsibilities

- **Government Procurement Policy Board-Technical Support Office (GPPB-TSO)**
- **PhilGEPS Office, under the Department of Budget and Management**
- **The Department of Information and Communications Technology (DICT)**
- **The Commission on Audit (COA)**
- **Civil society organizations (CSOs)**
- **Private Sector**

Technology Stack



Search Bar for Verifying Risk of Contractors

- A user-friendly input interface that allows stakeholders to query contractor information and retrieve a consolidated risk profile.



How NCRSS Works

- An explanatory module presenting the operational framework of the National Contractor Risk Scoring System (NCRSS), including data sources, methodology, and scoring processes.



Technology Stack



Why This Matters to You

- Contextual guidance highlighting the relevance of contractor risk assessment for public procurement, transparency, and accountability.



What Does Your Contractor's Score Mean

- A detailed explanation translating numerical risk scores into practical interpretations for end-users.



Technology Stack



Risk Indicator Breakdown (The Five Components)

- A structured presentation of the five risk components used in evaluating contractors, enabling stakeholders to identify specific areas of concern.



Public Feedback and Discrepancy Reporting

- A participatory feature allowing users to submit observations, corrections, or feedback, fostering transparency and continuous improvement of the system.



The screenshot shows the NCRSS homepage with a dark blue header featuring the logo (three stylized people) and the text "National Contractor Risk Scoring System (NCRSS)". Below the header is a sub-header: "Your tool for transparent contractor risk assessment. See if your tax money is being protected and report what you see." A search bar at the top right contains the placeholder "Prime Builders Corp" and a blue button labeled "Search Registry".

The main content area has a red header bar with the text "Contractor Risk Profile: Prime Builders Corp". Below this is a circular gauge titled "CIR Composite Risk Score (0-100)" with a value of "83" in the center. A small red circle at the bottom of the gauge is labeled "CRITICAL".

A warning message below the gauge states: "⚠ Pilot Rule Triggered: Mandatory pre-award human review and temporary ineligibility for projects >P50M."

The page is divided into two main sections:

- How the CIR Works (The Process)**: Describes the process of assigning risk scores by compiling data from PhilGEPS, DPWH, CPES, and SEC/PhilGEPS, and how the system automatically calculates weighted indicators to produce a single risk score.
- Why This Matters to You (The Benefits)**: Explains how the CIR transforms roles from monitoring to preventing corruption, leading to better infrastructure, faster completion, less waste, and citizen oversight.

Figure 2. Search Bar for Verifying Risk of Contractors, How NCRSS Works, and Why This Matters to You

④ What Does Your Contractor's Score Mean?

The CIR Score measures risk to the taxpayer. A score close to 0 means the contractor has a solid track record of completing projects on time and within budget, protecting public funds. A Critical score (>80) signals a very high risk of project failure, delays, or corruption.

Low Risk: 0 – 30 (Trusted Partner) **Moderate Risk:** 31 – 55 (Standard Review) **High Risk:** 56 – 80 (Elevated Scrutiny) **Critical Risk:** > 80 (Mandatory Review/ineligibility)

Risk Indicator Breakdown (The 5 Components)

Indicator Component	Weight	Score (0-100)	Forensic Finding (Evidence) & Public Impact
Performance (P) ⓘ	40%	95	71 Delayed Projects. Average Schedule Variance: 450 days. Impact: Delays mean longer inconvenience for citizens and higher cost to the government.
Financial Integrity (I) ⓘ	20%	75	Average Cost Overrun Ratio: 15%. 8 large change orders (>20% value). Impact: Increases project costs and drains budget meant for other community needs.
Ownership & Network (N) ⓘ	15%	85	BO Opacity: 4/5 required fields missing. Network Concentration: 75% of projects in Province X linked to related firms. Impact: Hides who controls the contractor, preventing oversight and allowing "shell companies."
Transparency (T) ⓘ	15%	50	50% of required contracts posted on time. BO Disclosure Completeness: 20%. Impact: Lack of information makes it impossible for the public to monitor and check performance.
Legal History (L) ⓘ	10%	100	Active Temporary Blacklist (Pending Appeal on 2024 Audit Finding). Impact: Contractor is officially sanctioned for past misconduct, indicating high future risk.

📢 Public Feedback & Discrepancy Reporting - Be Our Eyes!

You are an essential part of the NCRSS. If you notice a contractor working in your area that is causing issues, or if you believe the data above is incorrect, please report it. The NCRSS Board reviews all submissions.

Type of Report

-- Select One --

Figure 3. Risk Indicator Breakdown (The Five Components)

The screenshot displays a web-based dashboard and a reporting interface. At the top, there is a navigation bar with icons for Home, About, Contact, and Log In. Below the navigation, a blue banner features the text "NATIONAL CONTRACTOR REGISTRATION AND SURVEY SYSTEM" and "Contractor Registration".

The main content area contains a table with three rows, each representing a different category of contractor information:

Category	Value	Score	Description
Ownership & Network (N)	15%	85	BO Opacity: 4/5 required fields missing. Network Concentration: 75% of projects in Province X linked to related firms. Impact: Hides who controls the contractor, preventing oversight and allowing "shell companies."
Transparency (T)	15%	50	50% of required contracts posted on time. BO Disclosure Completeness: 20%. Impact: Lack of information makes it impossible for the public to monitor and check performance.
Legal History (L)	10%	100	Active Temporary Blacklist (Pending Appeal on 2024 Audit Finding). Impact: Contractor is officially sanctioned for past misconduct, indicating high future risk.

Below the table, there is a callout box titled "Public Feedback & Discrepancy Reporting - Be Our Eyes!" which includes the following fields:

- Type of Report: A dropdown menu with the placeholder "-- Select One --".
- Details/Evidence (Required): A text area with the placeholder "Provide specific details, dates, and location (e.g., 'The contractor on the XYZ Bridge Project in 2023 used substandard materials')."
- Email (Optional, for follow-up): An input field containing "yourname@example.com".
- A green "Submit Report for Review" button with a paper airplane icon.

At the bottom of the page, there is a section titled "Verify the Data (Public Transparency)" with two buttons:

- "View All Project Contracts (PhilGEPS)" with a document icon.
- "View Beneficial Ownership Record (SEC/PhilGEPS)" with a people icon.

Figure 4. Public Feedback and Discrepancy Reporting

Methodology

Data Sources

Data 1: Infrastructure Data

Data 2: Sumbong sa Pangulo – Flood Control

Data 3: COMELEC's Fiscal and Electoral Data from July 2025

Analytical Framework

Feature Engineering and Metric Development

<i>Metric</i>	<i>Formulation</i>	<i>CIR Score Component</i>
Condition Risk Score	Mapped: 'Low' to 1, 'Moderate' to 2, 'High' to 3, 'Critical' to 4	
Schedule Variance	Actual Completion Date - Original Completion Date(in Days)	Performance (P): Core of the Schedule Slippage Index.
Cost Overrun Ratio	(Actual Cost - Approved Budget for Contract (ABC)/ ABC) x 100	Integrity (I): Flags financial integrity risk.
Network Concentration	Count of Projects with Inter-Related Contractors/Total Projects	Network (N): The basis for the BO & Collusion Index.

Figure 1. Integrity Metric System

Systemic Risk Quantification

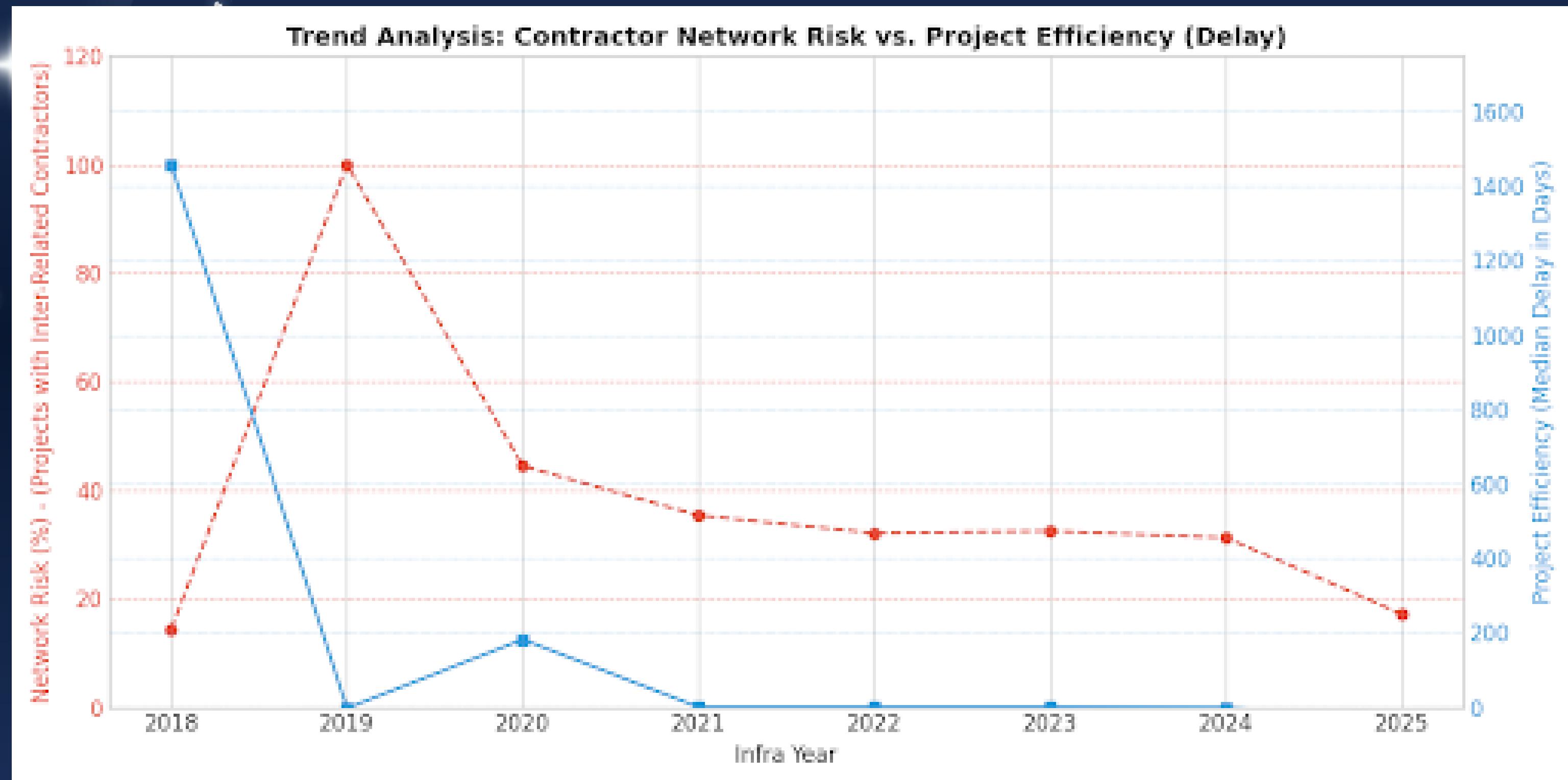
The second phase applied descriptive statistics, correlation testing, anomaly detection, and top-group clustering to identify patterns indicative of systemic failure. The procedures included:

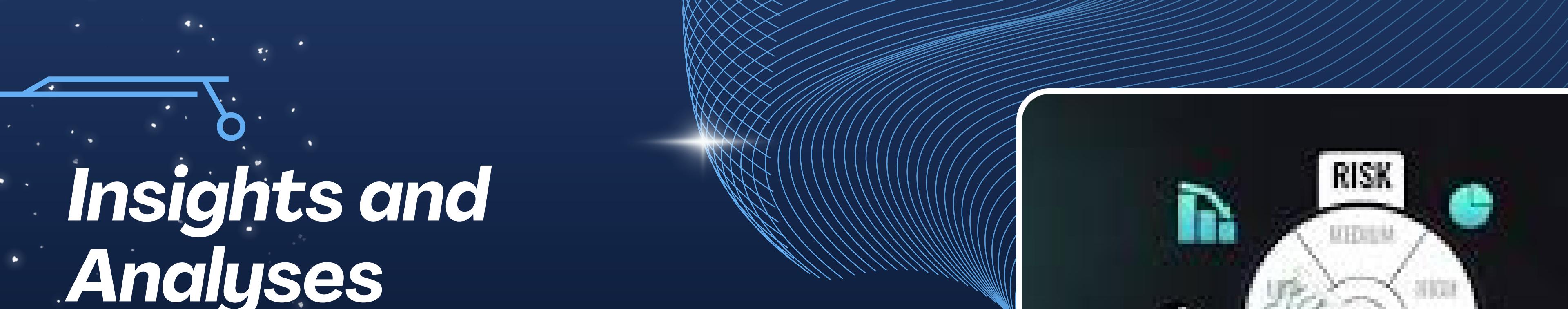
1. Testing relationships across age, condition, delay, and cost metrics.
2. Detecting statistical outliers in quality, timeliness, and financial performance.
3. Grouping contractors by frequency and severity of performance deviations.
4. Assessing concentration levels within contractor networks and local political environments.

Cross-Domain Integrity Mapping

The third phase connected procurement outcomes with network and political concentration indicators. Beneficial ownership linkages, inter-related contractor patterns, and electoral dynamics were cross-referenced using proportional and concentration-ratio techniques. This step provided a consolidated view of vulnerability to collusion, repeat offending, and opaque contracting relationships.

Data Treatment and Validation





Insights and Analyses



Systemic Infrastructure Vulnerabilities



Climate and Socioeconomic Consequences



Contractor Networks and Concentration Risk



Statistical Patterns and Cross-Domain Insights



Anti-Corruption and Governance Implications



Operational and Strategic Implications for the NCRSS



AI in Risk Scoring

Setup and Installation Guide

The National Contractor Risk Scoring System (NCRSS) is designed for immediate deployment with minimal technical requirements. Users can access and install the system via a single web-based link:
<https://tinyurl.com/NCRSS-NCPAG>



Access the Link

Open the URL in any standard web browser. The platform is fully compatible with modern browsers and requires no additional software.



Load the System

Upon opening the link, the NCRSS interface will load automatically. No local server setup or configuration is required.



Navigate Modules

Users can immediately interact with all platform components, including contractor search, risk scoring, indicator breakdowns, and feedback submission.



System Readiness

The platform is fully operational upon access, ensuring immediate usability for both policy stakeholders and technical users.

Data Sources

Department of Public Works and Highways. (n.d.). About DPWH.
<https://www.dpwh.gov.ph/dpwh/content/about-dpwh>



Thank You!

