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Assessing the Competencies of the Philippine Coast Guard's Investigation and Detection Management Service: Reference to a Specialized Training Curriculum

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ABSTRACT

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The Philippine Coast Guard (PCG), as the country's frontline in enforcing maritime laws, requires strong investigative capabilities to combat crimes such as smuggling, piracy, and illegal fishing across its extensive archipelago. This study was designed to evaluate the investigation and detection skills of the PCG's Investigation and Detection Management Service (CGIDMS) and develop a specialized training curriculum. Using a mixed-method approach, the research involved interviews with senior officers and a scenario-based exam for 114 CGIDMS personnel. The assessment identified

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core competencies, measured existing skills, and analyzed the gaps between them. The best practices from international and local law enforcement agencies were also examined through document review. The findings revealed that CGIDMS personnel possess moderate competency, with an average score of 38.69 out of 60. While they demonstrated proficiency in briefings, legal compliance, and scene security, significant gaps were identified in intelligence gathering, forensic procedures, DNA interpretation, and evidence documentation and articulation. Triangulated data confirmed persistent needs for better legal preparedness and inter-agency coordination. Based on these results and analysis of best practices, the study proposed an Integrated Competency-Based Training Program. This modular, simulation-driven program focuses on strengthening legal compliance, forensic accuracy, and operational coordination. The research highlights the urgent need for systematic training reform to enhance the PCG's investigative effectiveness and align it with international standards.

INTRODUCTION

The Philippines, an archipelago of over 7,600 islands, is intrinsically defined by its seas, creating a profound reliance on maritime transportation and a corresponding vulnerability to maritime-related threats (Bakir, 2007). In this context, the Philippine Coast Guard (PCG) serves as the nation's frontline maritime law enforcer, authorized to enforce all applicable laws within the country's maritime jurisdiction (Philippine Coast Guard, n.d.). Mandated by the Republic Act No. 9993 (The Philippine Coast Guard Law of 2009), the PCG is tasked with securing national sovereignty and enforcing the law across five key functions: maritime security (MARSEC), safety (MARSAF), search and rescue (MARSAR), marine environmental protection (MAREP), and maritime law enforcement (MARLEN) (CGAO LMS, 2012).

This national mandate aligns directly with the Philippines' commitment to global governance standards, particularly Sustainable Development Goal 16 (SDG 16), which calls for peaceful, just, and inclusive societies. By combating violence, trafficking, and exploitation at sea, the PCG's mission is fundamental to providing access to justice and building effective, accountable institutions—the core tenets of SDG 16. The PCG's role is not merely logistical; it is a cornerstone of the nation's pursuit of sustainable development and the rule of law.

Despite its expansive mission, a critical gap exists within the PCG's law enforcement capabilities. To address complex maritime crimes such as piracy, smuggling, and terrorism, the Maritime Security Law Enforcement Command (MARSLEC) was established. Under it, the Coast Guard Investigation and

Detection Management Service (CGIDMS) was created on January 6, 2020, to serve as its specialized investigative arm.

However, CGIDMS remains in a formative stage, facing significant institutional hurdles. Most notably, there are no known instances of a CGIDMS-led investigation resulting in a successful prosecution since its inception. Most maritime criminal cases are transferred to other agencies like the PDEA, BFAR, and the Bureau of Customs, positioning the PCG as an apprehending unit rather than a prosecuting one (PCG, n.d.) A critical lack of standardized investigative procedures compounds this. With personnel often deployed on an ad hoc basis without defined qualifications, the result is a patchwork of inconsistent practices that undermines the credibility of investigations and hinders the development of intelligence-driven operations.

The challenges facing CGIDMS reflect a gap in policy and training. Globally, leading maritime agencies in Malaysia Malaysian Maritime Enforcement Agency (MMEA) and Japan (Japan Coast Guard) have implemented structured, competency-based training programs that are essential for addressing modern maritime threats (Japan Coast Guard, 2021). According to bodies like the United Nations Office on Drugs and Crime (2021) and INTERPOL (2022), effective maritime investigation is a specialized skill requiring a fusion of intelligence gathering, evidence preservation, and legal expertise.

In the Philippines, while RA 9993 outlines the PCG's responsibilities, it lacks provisions for a structured competency framework for investigators. This policy gap has led to a scarcity of literature and targeted training programs for PCG personnel. The issue of investigator capability is a broader national concern, as evidenced by a study on PNP crime investigators in CALABARZON, which found that even capable investigators faced persistent challenges leading to case dismissals (Remotin et al., 2024). This highlights the urgent need for a specialized approach tailored to the PCG's unique maritime environment. Amidst escalating threats in the West Philippine Sea and the rise of transnational maritime crime, building the PCG's internal investigative capacity is a matter of national security. This highlights the increasing maritime risks demand a professionalized investigative corps capable of upholding law enforcement standards in complex operational settings.

Therefore, this study provides the foundational step toward professionalizing the CGIDMS. It will assess the current investigation and detection competencies of CGIDMS personnel across three critical phases: Pre-Operation, Operation, and Post-Operation. This research will identify key competency gaps through scenario-based assessments, expert interviews, and document reviews. The findings will be used to develop an evidence-based, customized training program that

integrates best practices from local agencies (PNP-CIDG, NBI) and international counterparts. The ultimate goal is to establish a standardized maritime crime investigation framework for the PCG, grounded in the principle that methodical evidence handling is the bedrock of justice (Gardner et al., 2012). By equipping CGIDMS personnel with specialized skills, this research will strengthen their capacity to build successful cases, ensuring that law enforcement actions lead to meaningful prosecutions. This, in turn, will bolster the PCG's ability to uphold the rule of law and support the Philippines' broader goals of maritime security, environmental protection, and good governance—in alignment with ASEAN integration efforts toward regional cooperation, interoperability, and capacity building in maritime law enforcement (ASEAN, 2015).

FRAMEWORK

This study adopts multiple frameworks to guide the assessment of competencies and formulate a specialized training curriculum for the Coast Guard Investigation and Detection Management Service (CGIDMS). Constructive Alignment and Kolb's Experiential Learning Theory are, at their core, ensuring that the program is both performance-driven and learner-centered.

Biggs' (1996) Constructive Alignment emphasizes aligning intended learning outcomes (ILOs), teaching strategies, and assessment methods. For CGIDMS, this ensures training objectives are explicit and that personnel are evaluated through authentic, outcome-based tasks that reflect real investigative scenarios. Complementing this, Kolb's (1984) Experiential Learning Theory highlights the cycle of direct experience, reflection, conceptualization, and experimentation. This supports the integration of simulations, scenario-based assessments, and role-playing activities that cultivate investigative skills in complex maritime contexts.

Supporting frameworks further strengthen this approach. Job Analysis identifies the precise tasks and competencies required of CGIDMS personnel, while Competency-Based Training (CBT) ensures the curriculum develops observable and measurable skills. Training Needs Assessment (TNA) highlights gaps between current capabilities and expected performance, and Cognitive Diagnostic Assessment (CDA) provides granular insights into individual strengths and weaknesses for targeted interventions. Finally, Adult Learning Theory (Knowles, 1968) underscores the need to tailor training to adult learners' motivations, experiences, and learning styles.

OBJECTIVES OF THE STUDY

This study aims to assess the investigation and detection competencies of Coast Guard Investigation and Detection Management Service (CGIDMS) personnel as the basis for developing a specialized training curriculum. Specifically, it seeks to: (1) Identify the required core competencies of CGIDMS personnel in investigation techniques and evidence collection across the Pre-Operation, Operation, and Post-Operation Phase, (2) determine the existing competencies of CGIDMS personnel in these phases, (3) analyze the gaps between the required core competencies and the existing competencies of CGIDMS personnel, (4) examine best practices from international and local agencies that can be adopted to enhance CGIDMS investigation processes, and (5) formulate a specialized training program for CGIDMS personnel in the Philippine Coast Guard based on the findings of the study.

METHODOLOGY

Research Design

This study employed a mixed-method sequential exploratory research design that combined the goal of generating new ideas and insights to integrate both qualitative and quantitative approaches. The descriptive component quantified the existing competencies of Coast Guard Investigation and Detection Management Service (CGIDMS) personnel through a scenario-based examination, while the exploratory component utilized expert interviews and document reviews to establish the required core competencies, identify competency gaps, and recommend best practices. This mixed approach provided a comprehensive understanding of the training needs of CGIDMS personnel, serving as a solid foundation for curriculum development.

Participants

The participants in this study were divided into two primary groups: expert participants and CGIDMS personnel. The selection of each group was purposive, based on their qualifications, relevance to the research objectives, and direct involvement in maritime law enforcement and investigative operations. A purposive sampling technique was utilized to ensure that only CGIDMS personnel with substantial experience in investigation and detection operations were included. The participants represented a subset of the total CGIDMS personnel population who met the inclusion criteria, such as current assignment in investigation units, prior involvement in case operations, and availability

for the study. This approach ensured that the data collected reflected informed and experience-based perspectives (Etikan, Musa, & Alkassim, 2016). The distribution of the participants of this study is shown in Table 1 below.

Table 1
Number of Research Participants

Expert Respondents	Number
Former CGIDMS Commanders	3 respondents
District Legal Officers	2 respondents
MARSLEC Senior Officers	2 respondents
CGIDMS Personnel	114 respondents

Expert Respondents

This group was composed of seven individuals with extensive institutional knowledge and operational experience relevant to identifying core competencies and benchmarking best practices in maritime investigation:

Three (3) former CGIDMS Commanders. These respondents were chosen for their leadership background, CGIDMS in-depth operational procedures understanding, and prior personnel training and evaluation involvement. Their historical and strategic perspectives were instrumental in defining the core investigative competencies across the pre-operation, operation, and post-operation phases.

Two (2) senior officers from the Maritime Law Enforcement Command (MARSLEC). As active officers managing the broader enforcement direction of the Philippine Coast Guard, provided operational insights and current challenges faced by field investigators, making their contributions vital in validating and contextualizing core competency requirements.

Two (2) legal officers. These legal professionals were included due to their expertise in case handling, evidence management, and the legal frameworks that govern maritime investigations. Their perspectives ensured that legal sufficiency and procedural compliance were integrated into defining core competencies and reviewing best practices.

These expert respondents were selected through criterion-based purposive sampling, ensuring that each individual possessed the experience and authority necessary to contribute meaningfully to the study's objectives.

CGIDMS Personnel Respondents. A total of 114 active CGIDMS personnel participated in the scenario-based written examination. These respondents were drawn from various coast guard districts to represent a cross-

section of operational field investigators nationwide. Their inclusion was essential to assess existing competencies in investigation techniques, evidence collection, and analysis as applied in real-world maritime law enforcement settings.

Data Collection

The data gathering of the study followed a sequential flow of the data gathering procedure employed in this study. The process began with Phase 1: Expert Input, which involved interviews and document reviews to identify the required core competencies of CGIDMS personnel across the pre-operation, operation, and post-operation phases. These insights were consolidated and used to develop the assessment tool.

In Phase 2: Personnel Assessment, a 60-item scenario-based examination was administered to 114 CGIDMS personnel across different Coast Guard districts. Delivered through Quilgo, an online platform integrated with Google Forms, the exam replicated maritime investigative scenarios and was designed to measure the personnel's existing knowledge, skills, and attitudes. The results provided a quantitative profile of the current competencies of CGIDMS personnel.

The findings from the first two phases were then integrated in Phase 3: Gap Analysis, where the required competencies identified from expert inputs were compared with the actual competencies demonstrated by the personnel during the examination. A gap analysis matrix was created to determine areas of strength, weakness, and absence, highlighting specific training needs.

Finally, Phase 4: Best Practices Review involved a comprehensive international and local benchmarks analysis. Training programs and operational manuals from the Malaysian Maritime Enforcement Agency (MMEA) (2020) and the Japan Coast Guard were examined, alongside local procedural documents from the Criminal Investigation and Detection Group (CIDG), the National Bureau of Investigation (NBI), and the Philippine Drug Enforcement Agency (PDEA). These best practices were evaluated for applicability and potential integration into the CGIDMS training framework.

Data Analysis

The study employed qualitative and quantitative data analysis techniques to comprehensively address the research objectives.

Qualitative Analysis

Data from expert interviews and document reviews were subjected to thematic and content analysis. Interview transcripts were carefully examined to identify recurring patterns in investigation techniques, evidence collection practices, and analytical processes across pre-, operation, and post-operation

phases. These emerging themes were then cross-validated with national protocols and international best practices to develop a tailored competency framework suited to the operational realities of the CGIDMS. Similarly, document reviews of training frameworks and investigation procedures from the Malaysian Maritime Enforcement Agency (MMEA) (2020), the Japan Coast Guard (JCG), and local agencies such as the Philippine National Police Criminal Investigation and Detection Group (PNP-CIDG), the National Bureau of Investigation (NBI), and the Philippine Drug Enforcement Agency (PDEA) were analyzed through content analysis. Relevant practices were categorized into themes such as evidence management, inter-agency coordination, and investigative ethics, which were later evaluated for adaptability to the CGIDMS context.

Quantitative Analysis

Responses from the 60-item scenario-based examination administered to 114 CGIDMS personnel were analyzed using a standardized rubric developed with input from subject matter experts. Each response was rated according to four criteria: accuracy, appropriateness of investigative approach, adherence to evidence protocols, and analytical reasoning. The raw scores were tabulated and subjected to descriptive statistical treatment, including mean, standard deviation, and frequency distributions, to summarize overall competency levels.

To provide meaningful interpretation, scores were grouped into three descriptive categories:

Low Competency (50% and below) – participants who demonstrated insufficient mastery of core investigation and evidence-handling procedures.

Moderate Competency (51%–80%) – participants who displayed partial mastery but with evident gaps requiring further training.

High Competency (81% and above) – participants who exhibited strong proficiency in applying investigative techniques and protocols.

A gap analysis was then performed by comparing the observed performance scores of personnel with the ideal competency levels identified through expert input and document review. Variances were calculated using percentage differences and weighted scores to determine the extent of competency gaps across the three operational phases. The results were presented through tables and graphs to highlight areas of strength, weakness, and absence, providing an empirical basis for developing a specialized training curriculum for CGIDMS personnel.

Research Ethics Protocol

This research strictly complied with the ethical guidelines of the Philippine

Merchant Marine Academy Graduate School and obtained approval from the institution's Ethics Review Committee. Informed consent was secured from all participants prior to their involvement in interviews and assessments. Participation was entirely voluntary, with respondents informed of their right to withdraw at any stage without any adverse consequences. To protect the integrity of the study, confidentiality and anonymity were rigorously maintained, particularly concerning sensitive personnel and institutional data. The study likewise adhered to the provisions of the Philippine Data Privacy Act of 2012 (RA 10173) to ensure proper handling of personal information. It was guided by international ethical standards, including the principles of the Belmont Report (respect for persons, beneficence, and justice) and the American Psychological Association's Code of Ethics. In addition, the manuscript underwent plagiarism screening through Turnitin, which yielded a similarity index of only 9%, indicating originality and adherence to academic standards.

RESULTS AND DISCUSSION

Required Core Competencies of CGIDMS Personnel in Investigation Techniques and Evidence Collection

The effectiveness of the Coast Guard Investigation and Detection Management Service (CGIDMS) rests on its personnel's investigative and evidence-handling competencies. Expert insights highlighted the core competencies across three phases—pre-operation, operation, and post-operation—while exposing significant gaps that inform training needs.

Pre-Operation Phase. Core competencies include threat assessment, intelligence preparation, mission planning, legal preparedness, inter-agency collaboration, ethical conduct, and capacity building. Experts noted that while basic skills exist, deficiencies in advanced analysis, contingency planning, warrant management, and formalized protocols hinder preparedness. Training gaps were also evident in intelligence integration and continuous learning.

Operation Phase. This phase requires tactical execution, legal compliance, adaptability, evidence handling, and coordination. Personnel displayed discipline, teamwork, and competence in boarding and search operations. However, lapses in real-time adaptability, rules of engagement, and evidence handling (e.g., poor labeling, incomplete documentation) weakened case outcomes. Coordination across agencies was described as "functional but fragmented," pointing to the need for standardized protocols and inter-agency drills.

Post-Operation Phase. Key competencies involve documentation, timeliness of reports, evidence turnover, and after-action reviews. While digitization

improved efficiency, reports often lacked depth, timeliness was inconsistent, and chain-of-custody lapses led to case dismissals. After-action reviews were conducted but rarely translated into systemic improvements due to limited participation and weak feedback loops. Experts stressed the need for centralized evidence tracking, structured monitoring, and stronger institutional mechanisms to ensure accountability and learning.

CGIDMS personnel show foundational competence in legal compliance, discipline, and teamwork but require advanced, systematic training to strengthen intelligence analysis, evidence management, and inter-agency coordination. Addressing these gaps through structured, simulation-driven training is vital to enhance investigative effectiveness and align practices with international standards.

This finding is strongly supported by standardized competency frameworks developed for law enforcement worldwide. The National Institute of Justice (NIJ) in the United States outlines a similar three-phased approach in its guides for criminal investigation. For example, in Criminal Investigation: A Method for Reconstructing the Past by Osterburg and Ward (1992), the process is broken down into preliminary investigation, in-depth investigation, and concluding investigation, which directly parallel the pre-operation, operation, and post-operation phases and require the same core skills of planning, execution, and reporting. Furthermore, INTERPOL's guidelines for forensic operations emphasize a structured process that begins with preparation and planning (pre-operation), moves to documentation and collection (operation), and concludes with evidence submission and case finalization (post-operation) (INTERPOL, 2019). This international standard validates the competencies identified by the thesis's experts as fundamental to modern investigation.

Existing Competencies of CGIDMS Personnel

A situational analysis exam involving 114 CGIDMS personnel assessed competencies across the pre-operation, operation, and post-operation phases. Results revealed strengths in procedural compliance and scene management but persistent weaknesses in intelligence gathering, technical forensics, and documentation.

Table 2

CGIDMS Personnel's Existing Competencies in Pre-Operations

Competencies (Pre-Operations)	No. of CGIDMS Personnel with Correct Answers	
	f	%
1. Apply the Revised Rules on Criminal Procedure in maritime and law enforcement operations.	69	61%
2. Guide interrogation strategies and anticipate potential resistance.	63	55%
3. Demonstrate effective delegation during crime scene processing.	34	30%
4. Maximize coverage when handling segmented compartments.	64	56%
5. Ensure investigative actions are legally defensible.	86	75%
6. Prepare and manage logistics and equipment for operations.	60	53%
7. Utilize knowledge in forensic psychology analysis.	77	68%
8. Apply appropriate methods of crime scene search.	90	79%
9. Ensure maritime legal compliance in all procedures.	72	63%
10. Uphold pre-operation confidentiality and integrity control.	88	77%
11. Demonstrate logistics readiness for evidence preservation.	75	66%
12. Apply the Revised Rules on Criminal Procedure with maritime enforcement provisions.	83	73%
13. Implement risk mitigation strategies and team safety protocols.	83	73%
14. Maintain role clarity and accountability within operations.	62	54%
15. Conduct tactical pre-operation briefings for coordinated execution.	95	83%
16. Gather intelligence and assess operational objectives effectively.	52	46%
17. Ensure planned activities comply with legal mandates and ethical standards.	73	64%
18. Identify and request appropriate personnel, equipment, and logistical support.	85	75%
19. Develop contingency plans for potential challenges and deviations.	73	64%
20. Lead pre-operation briefings to clarify objectives, roles, timelines, and expectations.	86	75%

Pre-Operation Phase. Personnel showed strong competence in pre-operation briefings (83%), crime scene search planning (79%), and ensuring

legal defensibility (75%). However, major weaknesses emerged in role-specific delegation (30%), intelligence gathering (46%), and logistical readiness (53%). These results suggest preparedness in structured planning but insufficient mastery of intelligence integration, task clarity, and role-specific accountability.

Operation Phase. The highest competencies were evidence verification with logs and photographs (86%), fingerprint preservation (82%), perimeter security (79%), and leadership continuity (80%). Weaknesses included spatial accuracy in sketches (35%), evidence handling under tool shortages (30%), and contamination control (54%). While discipline and teamwork were strong, technical forensic skills and improvisation under operational constraints were limited, highlighting the need for advanced scenario-based drills.

Table 3

CGIDMS Personnel's Existing Competencies During Operations

Competencies (During Operations)	No. of CGIDMS Personnel with Correct Answers	
	f	%
1. Secure perimeters and control unauthorized access at the scene.	90	79%
2. Photograph evidence in situ before collection.	74	65%
3. Mark evidence locations and coordinate with the sketcher and photographer.	79	69%
4. Identify and mitigate inaccuracies in spatial representation.	40	35%
5. Delay collection until tools arrive while maintaining area security.	34	30%
6. Document errors, photograph results, and identify alternative prints.	76	67%
7. Apply the Revised Rules on Criminal Procedure in evidence handling.	79	69%
8. Recognize and address chronological gaps that may hinder scene reconstruction.	78	68%
9. Photograph and preserve prints using casting materials when possible.	93	82%
10. Assign separate teams per zone and ensure proper labeling.	68	60%
11. Document losses and reconstruct evidence angles when feasible.	78	68%
12. Verify evidence with logs and original in situ photographs.	98	86%
13. Label, synchronize, and log video footage properly.	84	74%

14. Assign new team leaders according to pre-operation chain of command.	91	80%
15. Mitigate cross-contamination and injury risks during operations.	62	54%
16. Discreetly observe deviations, assess significance, and communicate to team members.	82	72%
17. Secure areas, prioritize safety, and escalate situations to the team leader.	87	76%
18. Terminate unsafe contact, prioritize exfiltration, and notify supervisors.	80	70%
19. Assess altered terms discreetly, evaluate risks/intelligence value, and coordinate with the monitoring team.	78	68%
20. Apply minimum necessary force to detain suspects, in compliance with protocols and training.	78	68%

Post-Operation Phase. Personnel performed well in debriefings (84%), intelligence feedback (83%), and supplementary reports (82%), showing strong collaboration and reflective practice. Yet serious gaps were evident in technical forensic tasks, including ACE-V methodology (18%), chain of custody logs (37%), and DNA interpretation (43%). Documentation quality and courtroom readiness were inconsistent, threatening case integrity.

Table 4

CGIDMS Personnel's Existing Competencies in Post-Operations

Competencies (post-operation)	**No. of CGIDMS Personnel with Correct Answers**	
	f	**%**
1. Conduct immediate debriefings with all personnel to gather initial observations and establish accountability.	80	70%
2. Document the chain of custody to preserve integrity and security of evidence from collection to storage.	89	78%
3. Record injury incidents thoroughly, including force used, medical care provided, and witness statements.	88	77%
4. Inform intelligence units about identified gaps to improve future intelligence gathering and analysis.	95	83%
5. Participate in inter-agency post-operation debriefings to share lessons, identify improvements, and strengthen communication.	96	84%

6. Apply ACE-V methodology to ensure quality and clarity in forensic examination.	20	18%
7. Maintain accurate chain of custody records and evidence log entries.	42	37%
8. Identify when weak visual corroboration may affect evidence placement reliability.	69	61%
9. Classify evidence as inadmissible but investigatively relevant when necessary.	62	54%
10. Recognize and classify circumstantial evidence appropriately.	65	57%
11. Apply forensic psychology assessments in investigative contexts.	81	71%
12. Justify warrantless searches under maritime law when legally defensible.	79	69%
13. Prepare a methodology and limitations section in forensic reports.	72	63%
14. Submit corrective reports with rationale for procedural deviations.	89	78%
15. Interpret and validate DNA results confirming suspect identity.	49	43%
16. Present expert qualifications and comparative analyses in reports.	66	58%
17. Identify when a bullet is consistent with a firearm's general class.	66	58%
18. Issue supplemental reports clarifying discrepancies in findings.	76	67%
19. Maintain assignment logs and rotation schedules for accountability.	56	49%
20. Initiate supplementary evidence reports and reprocess under proper chain of custody when required.	94	82%

Across phases, CGIDMS personnel demonstrated reliable competence in briefings, coordination, and evidence validation but struggled with intelligence analysis, role execution, and forensic documentation. The prevalence of moderate scores (51–80%) indicates partial mastery that requires structured, role-specific training, advanced forensic instruction, and continuous competency evaluations. Simulation-driven exercises and stricter evidence management protocols are essential to closing these gaps and aligning performance with operational and judicial standards.

These findings are consistent with studies on other law enforcement agencies

that often find a gap between procedural knowledge and technical application. For instance, research on DNA contamination in crime scenes found that a significant cause of error is inadequate training of first responders, leading to mistakes in technical areas like evidence collection, packaging, and documentation, despite officers being able to manage scene security (Alketbi, 2024). This mirrors the CGIDMS personnel's strengths in security but weaknesses in forensics. Furthermore, research by Alison and Crego (2008) on investigative decision-making highlights that officers often rely on procedural checklists but struggle with the critical thinking and analytical skills needed for complex tasks like intelligence analysis and adapting to unforeseen events, supporting the identified weaknesses of the CGIDMS personnel in technical and analytical areas.

Competency Gaps in Investigation Techniques and Evidence Collection of CGIDMS Personnel

Integrating expert interviews and scenario-based assessments shows persistent gaps across pre operation, operation, and post operation phases. These reflect limits in training depth, legal integration, forensic accuracy, and documentation quality.

Pre operation: legal readiness and role planning

Experts noted limited formal legal preparation, weak consultation, and unclear tasking. Exam items on jurisdiction, warrant planning, and team role delegation scored low, including only 34 of 114 correctly identifying SOCO and photographic tasking. Gaps concentrate on legal foresight, intelligence preparation, and alignment of mission roles with legal processes.

Operation: forensic consistency and decisions under pressure

Discipline and basic tactics were solid, but technical lapses were common in fingerprint processing, sketch sequencing, and scene photography. Many struggled with rapid procedural decisions when tools were lacking or suspects were concealed. The key gap is technical forensic handling and precise, doctrine-based decision making in fast changing situations.

Post operation: legal articulation and documentation

This was the weakest phase. Reports lacked analytical depth, chains of custody were broken, and lessons from debriefs were rarely applied. Only 20 of 114 handled the admissibility of inconclusive latent prints correctly. Gaps center on legal reasoning, coherent documentation, and courtroom readiness.

Cross cutting issues

Training is lecture heavy with limited simulation. Feedback from operations rarely updates modules. Legal and forensic content is thin in both pre service and in service programs. Performance reviews lack clear rubrics that align with operational tasks.

These critical gaps in competency—specifically in legal and forensic application and documentation—are well-substantiated by the broader law enforcement literature. They represent the practical consequences of a long-standing theory-practice gap (Birzer, 2003), compounded by the documented problem of insufficient and non-continuous training in technical skills (Police Executive Research Forum, 2020). These findings strongly indicate a need for a fundamental shift toward more applied, reality-based, and continuous training curricula.

Best Practices from International and Local Agencies to Enhance CGIDMS Investigation Processes

Adopting proven practices from international and local agencies can substantially strengthen CGIDMS investigations. Global models such as the Japan Coast Guard and the Malaysian Maritime Enforcement Agency (MMEA) (2020) show how collaboration, officer development, technology use, and standard procedures raise investigative quality. Local agencies such as PDEA, NBI, CIDG, and PCG contribute legally grounded protocols, forensic capabilities, and public engagement tools that fit the Philippine context. Together these sources point to a realistic path for upgrading CGIDMS performance in ways that are both internationally aligned and locally workable.

At the global level, best practices emphasize a rule of law approach anchored in UNCLOS and reinforced by regional diplomacy and prior international rulings. Security cooperation through bilateral and minilateral arrangements improves patrols, interdiction, and joint response. Capacity building is advanced through structured officer education, bilateral training, and regular multinational exercises. Technology adoption is central, with surveillance platforms, data fusion tools, and digital evidence management supporting faster and more accurate investigations, while confidence building measures help reduce tensions in contested waters.

Local agencies offer complementary strengths that safeguard prosecutorial success inside Philippine courts. Standardized investigative manuals and evidence handling protocols from PDEA, NBI, and CIDG ensure lawful procedures from seizure to laboratory submission. Institutional training deepens forensic methods, legal foundations, and case preparation that match Philippine statutes

and jurisprudence. Public reporting mechanisms such as hotlines, mobile applications, and anonymous tip lines generate actionable intelligence and build community trust when consistently managed.

These sources converge on several reform themes for CGIDMS. Inter-agency collaboration should be formalized so that joint planning, intelligence sharing, and evidence protocols are consistent across partners. Training must move beyond lectures toward simulation-based learning and officer education that is sustained and measurable. Procedures and documentation should follow clear templates that mirror International Maritime Organization style standards while remaining faithful to domestic legal requirements. Modular teams that are cross trained for rapid deployment can improve responsiveness at sea. Finally, communication with the public should be unified and transparent so that reporting is easy and feedback is visible.

Concrete steps can translate these themes into practice. CGIDMS can institutionalize recurring joint exercises with the Japan Coast Guard and the Malaysian Maritime Enforcement Agency (MMEA) (2020) and expand exchange programs on arrest procedures, investigative techniques, and maritime governance. A centralized digital evidence and case tracking system should support an unbroken chain of custody from sea to court. Where applicable, investigators can use voyage data recorder analysis and standard digital photo and video workflows for incident reconstruction. Formal agreements with the NBI and PDEA can secure laboratory access, mentorship, and co-authored protocols for DNA, cyber evidence, and document examination. A hybrid documentation toolkit that blends international scalability with Philippine legal specificity will help investigators present clear, defensible reports, including the proper articulation of evidentiary limits in court.

Public trust and rapid response also depend on modern communication. A single maritime hotline linked to integrated digital and mobile reporting can connect citizens to authorities in real time. National awareness campaigns and a uniform feedback system will raise use and confidence, while clear privacy safeguards protect informants and witnesses. Consistent performance monitoring and transparent metrics will show the public that reports lead to concrete action.

Canton's (2015) work on multi-agency task forces demonstrates that clearly defined collaboration protocols, unified intelligence-sharing systems, and joint training exercises lead to a significant improvement in operational outcomes, particularly when tackling complex, interconnected crimes such as drug trafficking and terrorism.

Proposed Integrated Competency Based Training Program on Maritime Criminal Investigation and Forensic Evidence Management

This program responds to expert identified gaps in jurisdictional awareness, forensic proficiency, role clarity, and post operation legal documentation. It is modular, hands on, and evidence informed, aligning CGIDMS practice with Philippine law and international standards. Delivery blends classroom discussion, practical demonstration, and performance assessment, with strong use of simulation and outcome-based learning.

The curriculum totals 160 hours across four weeks, or an optional 40-hour five day intensive. It integrates legal compliance, advanced forensic techniques, and operational decision making so that personnel can perform effectively before, during, and after operations.

Module 1 strengthens pre operation readiness. Training covers jurisdiction and maritime law under RA 9993 and relevant UNCLOS provisions, legal authorization and ethical compliance, intelligence gathering and profiling, task designation and SOP review, logistics and mission planning, and risk assessment with tactical briefings. These lessons directly address shortfalls in warrant execution, legal foresight, and role specific planning.

Module 2 reinforces skills during operations. Topics include scene safety and control for dynamic vessel entry, systematic search methods on board, arrest and detention protocols, evidence handling and temporary storage at sea, early chain of custody documentation, and coordination in multi-unit operations. The focus is precise forensic handling and doctrine-based decisions under pressure.

Module 3 improves post operation documentation and court readiness. Trainees practice consistent forensic photography and sketching, clear narrative and technical report writing with applied English for legal and technical contexts, digital and physical evidence inventory, treatment of discrepancies, testimonial preparation, and coordination with prosecutors. The aim is coherent, defensible reports and confident presentation of findings in court.

Module 4 applies all skills in a full cycle simulation. Teams plan a mission, execute boarding and search, collect and process evidence, compile the case folder, and deliver mock testimony. Inter-agency participation increases realism, and performance-based assessment links learning to measurable competence.

Assessment uses before and after tests, competency checklists, evidence collection drills, case documentation, and mock courtroom testimony. Training resources include mock crime scene kits, fingerprint and photography tools, jurisdiction maps and SOP manuals, prebuilt case files and legal templates, and a courtroom simulation setup with role play briefs and rubrics.

Graduates are expected to show stronger jurisdictional compliance in

planning, safer and more accurate evidence work at sea, reliable chain of custody from scene to court, clearer legal documentation, and a consistent habit of after-action review. The program builds investigators who are agile operationally, sound legally, and proficient forensically within the Philippine maritime environment.

The overall structure of the proposed program—being competency-based, modular, and problem-focused—is consistent with the recommendations of leading government and academic bodies. The U.S. Department of Justice's Office of Community Oriented Policing Services (COPS) has consistently advocated for a shift toward Problem-Based Learning (PBL) and competency-based models.

PBL, which requires trainees to solve realistic problems using available resources, mirrors the simulation component of the proposed program. This methodology is proven to foster the critical thinking and practical skills that the thesis found were missing in personnel. Unlike rote memorization, a competency-based, PBL-driven program ensures that training is directly focused on achieving a measurable standard of job performance (the competency), making it the ideal framework for eliminating the established deficiencies in areas like courtroom-ready documentation and forensic application.

The proposed Integrated Competency-Based Training Program is grounded in the most effective methodologies available to law enforcement pedagogy, specifically leveraging SBT (Andersen & Gustafsberg, 2016) and PBL (COPS, n.d.) to provide a validated, scientifically supported solution for the agency's competency gaps.

CONCLUSION

The study confirms that while CGIDMS has clearly defined core competencies—spanning threat assessment, mission planning, legal preparedness, inter-agency coordination, ethical conduct, and continuous improvement—these are unevenly mastered in practice. Personnel show reliable strengths in briefings, evidence verification, perimeter security, and coordinated action, yet performance drops when tasks require deeper technical skill, analytic rigor, or precise role execution.

Competency gaps are both phase-specific and systemic. Before deployment, shortfalls appear in legal planning, intelligence preparation, and role-specific tasking. During operations, weaknesses center on technical forensics and correct procedural sequencing under pressure. After operations, the most acute issues involve courtroom-ready documentation, chain-of-custody discipline, and the legal articulation of forensic findings.

Documentation quality and chain-of-custody rigor remain the principal risks

to case viability. Despite gains from digital reporting, delays, limited analytical depth, formatting issues, and incomplete custody records continue jeopardizing evidentiary integrity and prosecutorial success. These patterns reflect a training architecture still too lecture-based, with weak feedback loops from after-action reviews that fail to convert lessons learned into routine practice.

Closing these gaps requires formalized inter-agency mechanisms and standardized technology. MOUs, shared SOPs, and liaison cells should govern intelligence exchange and evidence handoffs. In contrast, mobile evidence tagging, photo/video logging, a centralized chain-of-custody system, and maritime-adapted forensic kits must be institutionalized under common standards and regular audits. Performance governance should complete the learning loop through closed-loop AARs, competency rubrics tied to real outputs (custody completeness, report quality, court outcomes), and leadership dashboards that track filings, evidence integrity, and case dispositions.

The proposed outcome-based, simulation-driven program is fit for purpose: it embeds maritime law and jurisdiction pre-op, scene/tactical and evidence handling during op, forensic reporting, and courtroom testimony post-op. With leadership endorsement, adequate resourcing, and hybrid SOPs aligned to IMO guidance and Philippine legal standards, CGIDMS is well-positioned to modernize its investigative function and meet the growing complexity of maritime crimes.

TRANSLATION RESEARCH

This study translates evidence into a practicable reform agenda that links training, policy, and technology. It establishes inter agency SOPs and liaison structures, deploys mobile evidence tagging with a centralized chain of custody system, standardizes report and photo or sketch workflows, and delivers an integrated simulation driven program aligned to Philippine law and IMO style guidance. A performance governance loop uses closed loop after action reviews, prosecutor coded report rubrics, custody completeness, and court outcomes to drive continuous improvement. With leadership endorsement and adequate resourcing, CGIDMS can move from uneven mastery of core competencies to routine excellence across pre operation, operation, and post operation phases.

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