

**UNSEEN COMPLEXITIES OF ORGANIZATIONAL CAPACITY IN
POTENTIAL INTERAGENCY COLLABORATION:
THE CASE OF LAW ENFORCEMENT IN MARINE ENVIRONMENT
PROTECTION IN SRI LANKA**

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Abstract

Collaborative capacity is a critical factor in interagency collaboration, and the organizational capacity has been identified as one of the constituents of collaborative capacity. The existing literature on collaborative capacity mainly confine to the capacity needed for the management of the collaborative effort and the capacity specifically needed for the intended purpose of the collaboration – the “purpose-specific collaborative capacity”, has not been investigated adequately in-depth. Similarly, though there are studies on collaborations already exist, there is dearth of research on potential collaborations focusing collaborative capacity. The objective of the study was to conduct an in-depth study focusing the constituent - “purpose-specific organizational capacity”, to capture and understand the embedded complexities, in the context of law enforcement in marine environment protection, in Sri Lanka, and ascertain how and why such complexities are formed. The research was a qualitative study utilizing case study research strategy, and purposive sampling method was used to collect primary data through in-depth interviews. The content analyses based on themes were used to examine and capture the complexities, and the trustworthiness of the research was established through reliability procedures, and data triangulation. The findings of the study established the existence of two main perspectives in “purpose-specific organizational capacity” – the maritime perspective and the law enforcement perspective, and the extensiveness of complexities in each perspective could be distinguished and captured in six themes - legitimacy, operational, technical, logistic, training and development, and purpose-supportive structure, process and policies.

Keywords: collaboration, organizational capacity, law enforcement, marine environment

INTRODUCTION

There is scholarly significance in studies on collaboration, and publishing of empirical studies during the period of 40 years from 1972 to 2012, shows a tremendously increase of studies on nonprofit collaboration in the recent past; starting from 10 articles during the period from 1986-1995, and peaking at 289 articles from 2003-2012 (Glazey and Guo 2015, 16-17). The scope of interagency collaboration extends to many diverse policy contexts and fields such as law enforcement agencies, the veteran's health administration, department of homeland security, child and family service delivery, local economic policy, crisis management, environmental issues and natural resources management (Emerson, Nabatchi, and Balogh 2011, 4). Though there is substantial increase in studies on interagency collaborations, only limited amount of studies have focused the capacity aspect of collaboration and review of studies in top five peer reviewed academic journals in the field of public affairs during a period of 10 years from 2000 to 2009, revealed that only 06 out of 258 studies, had focused on capacity (Varda, Shoup, and Miller 2012, 567).

The collaborative capacity is considered as a critical factor in interagency collaboration and many researchers have emphasized that collaborative capacity is paramount important for organizations involved in inter-organizational collaboration (Thomas et.al. 2008; Weber, Lovrich, and Gaffney 2007; Thomas, Hocevar, and Jansen 2006; Bardach 2001; Huxham 1993; Gray 1985), and the organizational capacity, has been identified as one of the constituents of collaborative capacity (Foster-Fishman et al. 2001; Lai 2011; Cheng and Sturtevant 2011). The existing literature on collaborative capacity mainly confine to the capacity needed for the management of the collaborative effort such as; structure, interpersonal relations, leadership, communication, negotiating, adaptability, trust, hierarchical relationship between the partners; and whilst the capacity specifically needed for the intended purpose of the collaboration - the "purpose-specific collaborative capacity", has not been investigated adequately in-depth (Foster-Fishman et al. 2001; Imperial 2005; Weber, Lovrich, and Gaffney 2007; O'Leary, et. al., 2011; Yu-Hung 2011; Hocevar, Jansen, and Thomas 2011; Cheng and Sturtevant 2011; Lai 2011). The same scenario prevails in the constituent organizational capacity as well, and the - "purpose-specific organizational capacity", had not been explored in-depth (Foster-Fishman et al. 2001; Lai 2011; Cheng and Sturtevant 2011).

The context, law enforcement in marine environment protection in Sri Lanka was selected for research, as the mandate for marine environment protection in Sri Lanka is divided and vested with several public agencies, sans a collaborative mechanism. This unique research context provided an ideal opportunity for an empirical investigation, to ascertain the complexities embedded in "purpose-specific organizational capacity", in pre-collaborative stage. The findings of the study reveal the existence of two main perspectives of "purpose-specific organizational capacity"; the maritime perspective and the law enforcement perspective, and the extensiveness of complexities in each perspective could be explored and captured in six themes; legitimacy,

operational, technical, logistic, training and development, and purpose-supportive structure, process and policies.

The paper commences with the theoretical background, which encompasses two perspectives; interagency collaboration and organizational perspective of collaborative capacity, followed by research problem, research focus, scope and purpose of the research. The next section provides a brief description about the research context, followed by research methodology adopted in the study. Then the paper proceeds on to present the data analyses and discussion in two identified perspectives and six themes, followed by summary of findings and conclusions.

THEORETICAL BACKGROUND

The theoretical background of the study is presented in two perspectives; interagency collaboration and organizational perspective of collaborative capacity.

Interagency Collaboration

According to Walter and Petr (2000, 494), “interagency collaboration has been characterized in many ways: as a structure as well as a process (Abramson and Rosenthal, 1995); as both process and attitude (Swan and Morgan, 1993); and as a relationship involving formal and informal components (Swan and Morgan, 1993; Konrad, 1996; Harbert, Finnegan, and Tyler, 1997)”. Huxham (1996, 1) defined collaboration as “working in association with others for some form of mutual benefit”, and Bardach (1998, 8) defined collaboration as “any joint activity by two or more agencies working together that is intended to increase public value by their working together rather than separately”. Thomson, Perry, and Miller (2007, 3), define collaboration as “a process in which autonomous or semi-autonomous actors interact through formal and informal negotiation, jointly creating rules and structures governing their relationships and ways to act or decide on the issues that brought them together; it is a process involving shared norms and mutually beneficial interactions”. The literature reveals that collaborations could be formed for different reasons, such as mutual benefits, increasing public value, interdependence, reciprocity, concerted action and a formal commitment, (Gray 1989, 5; Mattessich and Monsey 1992, 11; Huxham 1996, 1; Bardach 1998, 8; Thomson, Perry, and Miller 2007, 3). Though the scholars have provided deferent definitions for collaboration, the expressions in definitions imply that collaboration could be broadly defined as “a joint activity by two or more entities which is formed to bring more benefits in the intended purpose, than what was existed before the collaboration”

A recent study conducted by Glazey and Guo (2015, 22), involving review of selected articles on non-profit collaboration, published during the period of 25 years from 1986 to 2012, reveals the existence of three stages of collaboration, as 46% of articles on antecedents (factors that lead to collaboration), 9% on the processes (e.g., how the partnership is managed), and 43% on the outcomes of collaboration (e.g. collaborative performance or effectiveness and its determinants). The scholars have conceptualized collaboration as linear type, as well as cyclical phased-framework consisting continuum of stages, and utilized different terminology such as; problem setting, direction setting, and implementation (Gray 1989, 57); antecedent, process and outcome

(Gray and Wood 1991); starting conditions, institutional design, leadership and collaborative process (Ansell and Gash 2007, 550); the initial conditions affecting collaboration formation, process, structural and governance, constraints and contingencies, outcomes and accountability (Bryson, Crosby, and Stone 2006, 44); to identify the phases of collaboration. These expressions imply that collaboration primarily consists of three stages; potential collaboration or pre-collaboration stage; collaboration process or implementation stage; and outcome stage (Gray 1989; Gray and Wood 1991; Ring and de Ven 1994; Bryson, Crosby, and Stone 2006; Ansell and Gash 2007).

Collaborative Capacity and Organizational Perspective

Bardach (1998, 20) defined interagency collaborative capacity as “the potential to engage in collaborative activities rather than the activities themselves”. Thomas et al., (2006, 2) defined collaborative capacity as “the ability of organizations to enter into, develop, and sustain inter-organizational systems in pursuit of collective outcomes”, and Gazley (2008), cited in O’Leary and Vij (2012, 512) has defined capacity as the “ability of a member to secure the human, technological, political, or other necessary resources that allow it to participate in collaborative activities”.

The elusiveness and blurred nature of conceptualizing collaborative capacity is visible in literature on interagency collaboration. The collaborative capacity has not been incorporated as a clearly distinguishable constituent in conceptual frameworks of interagency collaboration (Gray 1989, 94; Gray and Wood 1991, 13; Mattessich and Monsey 1992, 33-35; Ring and de Ven 1994, 97-98; Bryson, Crosby, and Stone 2006, 44; Ansell and Gash 2007, 550), but many elements of collaborative capacity identified in studies on capacity such as; operating system, resources, steering process, trust, leadership, communication, enforcement, procedures and process, structure, individual skills and knowledge, social capital, information communication technology, monitoring and tracking have been incorporated intermittently in the interagency collaboration frameworks (Bardach 1998; Foster-Fishman et al. 2001; Hocevar, Jansen, and Thomas 2011; Emerson, Nabatchi, and Balogh 2011; Lai 2011). Similarly the literature illustrates the existence of many perspectives, aspects and factors which are scattered in the spectrum of collaborative capacity such as; personnel, budgetary, equipment, space resources assigned to collaborative tasks, relationships of the task, operating system, resources contributed by participating agencies, steering process and trust that facilitates joint problem solving (Bardach 1998, 20-21); member capacity, relational capacity, organizational capacity and program capacity (Foster-Fishman et al. 2001); skills, resources, expertise, experience, perspectives, and knowledge (O’Leary and Vij 2012, 512); hierarchical relationship between the partners, their legal authority to exist and operate (Weber, Lovrich, and Gaffney 2007); purpose, structure, communication, and resources (Yu-Hung 2011, 448); process and strategy, structure, lateral mechanism, incentives and people (Thomas et al. 2006, 6); six arenas - organizing, learning, deciding, acting, evaluating, and legitimizing, and three levels - individuals, organizations and networks (Cheng and Sturtevant 2011).

The authors have adopted different terminology such as; attributes arenas, levels, dimensions, elements, and domain etc. to express the constituents of collaborative capacity. The literature

review reveals that organizational perspective has been identified as a constituent of collaborative capacity in researches; either by directly incorporating organizational capacity as a constituent of collaborative capacity (Foster-Fishman et al. 2001; Imperial 2005, 281; Cheng and Sturtevant 2011; Nowell and Foster-Fishman 2011, 193); or by indirectly incorporating the elements commonly identified under organizational perspective such as structure, resources, process, administrative and logistic support, technology, operating system, vertical capacity (Bardach 1998; Weber, Lovrich, and Gaffney 2007; Hocevar, Jansen, and Thomas 2011; Emerson, Nabatchi, and Balogh 2011, 14-16).

Research Problem

The research problem extends to three perspectives; interagency collaboration; collaborative capacity; and “purpose-specific collaborative capacity”.

Perspective of Interagency Collaboration: O’Leary and Vij (2012, 517) had pointed out a critical theoretical issue stating that, “there is no single or even a set of valid, reliable, recognizable measures for analyzing and comparing different collaborations and drawing conclusions on how to foster and maintain effective collaborations”. According to O’Leary and Vij (2012, 516) though the collaborative public management had derived richness from incorporating theories from other fields, it also possesses blind spots concerning theoretical diversity and fragmentation and lacks depth. Though there is significance amount of studies on collaboration, there is dearth of research focusing on potential collaborations or pre-collaboration stage and the necessity exist to conduct more studies in pre-collaborative stage, in view of complex relationships likely to exist in collaboration (Badarch 1998, 53; Mattessich and Monsey 1992, 40; Weber, Lovrich, and Gaffney 2007, 216), and there is necessity of studying mandated collaboration separately from voluntary collaboration (O’Leary and Vij 2012, 516). Krane and Lu (2012, 19) have stressed the significance in examining collaborative public management, focusing the regions away from United States and Europe to determine the general factors and context-specific factors in collaborative management. These findings from existing studies illustrate the inadequacy of research focusing; potential collaborations; mandated collaborations; different contexts; and different regions and countries.

Perspective of Collaborative Capacity: Review of articles in top five peer-reviewed academic journals published in the field of public affairs during ten years from year 2000 to 2009 involving 258 studies, by Varda, Shoup, and Miller (2012, 567), revealed the existence of 17 unique categories of studies, dominated by 64 researches on network structure and 48 researches on outcome of collaboration, but only six studies or 2.3% of researches on capacity aspect, indicating the dearth of studies focusing capacity aspect of collaboration. The review of literature on collaborative capacity revealed the existence of studies for different purposes and diverse focuses such as; creating of craftsmanship theory and “plat forming” to explain the developing of collaborative capacity through ten interrelated “building blocks” (Bardach 1998 and 2001); to formulate a collaborative capacity assessment framework (Weber, Lovrich, and Gaffney 2007); to illustrate the levels of collaborative capacity and elements in community coalitions (Foster-Fishman et al. 2001); to assess collaborative capacities (Cheng and Sturtevant, 2011); to create

interagency collaborative capacity model to assess organizations' capacity to collaborate (Hocevar, Jansen, and Thomas 2011); to identify dimensions of capacity in local social service delivery (Bryan 2011); to explain the differences in collaborative capacity among groups (Lai 2013); to assess collaborative capacity in disaster management (Lai 2011). These findings illustrate that the research on collaborative capacity has been mainly focusing on “what” and “how much” perspective of collaborative capacity, during the process and outcome stages of collaborations already exist, and hardly any research had attempted to address “how” and “why” perspective of collaborative capacity in potential collaborations. When “how and why” perspective of collaborative capacity is not focussed during the pre-collaboration phase, it is difficult to capture the unseen complexities embedded and ascertain the causes leading to such complexities, and it would lead to more complexities during the process stage of collaboration.

Perspective of “Purpose-Specific Collaborative Capacity”: A group of organizations intend to form a collaborative effort may need collaborative effort for one specific purpose and to accomplish objective/s related to that purpose. Similarly few organizations in this group may involve in another collaborative effort for another purpose. A good example for this scenario is the National Council for Disaster Management (Disaster Management Centre, 2015) in Sri Lanka which has been established to collaborate and manage activities in disasters, and almost all the public agencies involved in marine environment protection, are also partners of this collaboration mechanism under as well. In such situations the organizational capacity needed for two collaborative efforts encompass capacity specifically needed for the collaborative purposes - the “purpose-specific organizational capacity”, as well as the capacity needed to manage the collaborative effort such as; steering process and trust (Bardach 1998, 20-21); effective leadership and effective communication (Foster-Fishman et al. 2001); social norms (Imperial 2005, 281); structure, lateral mechanism (Thomas et al. 2006, 6); hierarchical relationship between the partners (Weber, Lovrich, and Gaffney 2007) information technology, financial capacity, strategic leadership capacity (O'Leary, et. al., 2011), structure, communication (Yu-Hung 2011), structure, information sharing (Hocevar, Jansen, and Thomas 2011, 2) evaluating (Cheng and Sturtevant 2011) monitoring and tracking (Lai 2011, 3). The “purpose-specific organizational capacity”, is linked to the internal organizational systems of partner organizations and, in-depth investigations at organizational level had not been conducted, to explore and capture unseen complexities (Foster-Fishman et al. 2001; Lai 2011; Cheng and Sturtevant 2011).

Research Focus

The existing studies in collaborative capacity had been mainly conducted on capacity needed for the management of the collaboration, during the process and outcome stages of collaboration, focusing on “what” and “how much” aspects of capacity, and the capacity specifically needed for the purpose of the collaboration had been neglected. There is no collaborative mechanism at present among mandated public agencies, for law enforcement in marine environment protection in Sri Lanka and the potential for such collaboration exists. Hence the research was conducted in

the pre-collaborative stage, focusing on “what”, “how” and “why” form of questions related to “purpose-specific organizational capacity” to explore the embedded complexities.

Research Purpose

The study focused on “purpose-specific organizational capacity” in pre-collaboration stage, in the context of law enforcement in marine environment protection in Sri Lanka, to explore and answer two questions and make theoretical and empirical contribution:

- a) What complexities exist in “purpose-specific organizational capacity” in the context of law enforcement in marine environment protection in Sri Lanka?
- b) How and why such complexities are formed?

Research Scope

The theoretical scope of the study was confined to the “purpose-specific organizational capacity” related to the law enforcement aspect of marine environment protection in Sri Lanka, in the pre-collaboration stage; and excludes the capacity needed for the management of the collaboration. Since the research focused on organizational capacity and the perspective of individual capacity and competencies of their members extends to a wider scope, the capturing the complexities in individual capacity were excluded in the research and, the aspect individual capacity was limited only to assess whether the organizations have the capacity to develop the personnel with required capacity. The empirical scope was confined to the enforcement aspect of existing laws on marine environment protection in Sri Lanka and excludes other aspects of law and marine environment protection.

RESEARCH CONTEXT

The research context of the study was law enforcement of marine environment protection in Sri Lanka. Since the functions and responsibilities relevant to marine environment protection has been divided and vested with several public agencies separately, sans a collaborative mechanism, and hive of activities are taking place in the applicable vast geographical area, there is high potential for such collaborative mechanism.

The Geographical Scope of Marine Environment: All agencies mandated with the marine environment protection functions, operate in a vast and common geographical area, which encompasses 517,000 km² (equals to 7.8 times the land area of Sri Lanka) and the coastline of 1,620 kms (Samaranayake 2007, 167). The statistics published by Ministry of Fisheries and Aquatic Resources Development (2014) illustrates the existence of; 26 major fisheries harbours; 58 boat anchorages; 193 improved landing centres; 890 minor fish landing centres; a fishing fleet of 51,127 boats, and marine fishing household population of 824,680. The Coastal Zone includes some of the richest biodiversity areas in the country, including coral reefs, extensive sea-grass beds, mangrove forests, salt marshes, beaches, coastal wetlands, highly productive estuaries, lagoons and sanctuaries, five sea ports, and more than 80% of the tourism-related infrastructure (Samaranayake 2007, 168). These statistical data show the extent of responsibility coming under the scope of marine environment protection in Sri Lanka.

Threats and Deficiencies in Marine Environment Protection: The studies conducted in marine environment in Sri Lanka illustrate the existence of threat to the sustainability of healthy marine environment in Sri Lanka and the ineffectiveness of law enforcement is evident from many sources. The European Commission has banned imports of fisheries products from Sri Lanka, due to deficiencies in implementation of control measures (<http://europa.eu>, 2014). The Marine Environment Protection Authority (MEPA) has reported frequent occurrence of dumping of ship generated waste in the ocean, causing serious environment and economic damages (www.mepa.gov.lk 2014). The *National Report of Sri Lanka on the Formulation of a Transboundary Diagnostic Analysis and Strategic Action Plan for the Bay of Bengal Large Marine Ecosystem* (BOBLME, nd) has identified seven threats to the coastal and marine environment and its living resources namely; coastal and marine environment, coastal and marine habitats, shoreline stability, coastal and marine fisheries, brackish water fisheries and culture, coastal and marine biodiversity and threats with transboundary effects (BOBLME n.d., 31-38). The poaching by hundreds of Indian fishermen in northern waters of Sri Lanka, using large mechanized trawlers and banned fishing method of bottom-trawling is a well known fact reported regularly by media for many years, and poaching Indian fishermen causes an annual loss of Sri Lankan Rupees 5 Billion to Sri Lanka (Sunday Times, 11-10-2015, 16).

RESEARCH METHODOLOGY

According to Yin (2009) the case study research strategy could be adopted; when research questions of “how” and “why” form, and “what” questions of exploratory form are involved in the research; research is contemporary; and researcher does not have control over behavioural events. Since the study involved; a contemporary issue; researcher does not have control over behavioural events; and the research questions mainly focus on “how” and “why” aspects; the qualitative strategy of inquiry and case study research strategy was adopted in the research. Based on the definition adopted by Gazley (2008), the “purpose-specific organizational capacity” in the study refers to the “ability of a member organization to secure human, physical, technological, political, or other necessary resources that allow it to participate and sustain in the collaborative effort”.

The population of the research consisted of four mandated public agencies; Marine Environment Protection Authority (MEPA), Department of Fisheries and Aquatic Resources (DFAR), Coast Conservation Department (CCD), and Department of Wildlife Conservation (DWC), which possess the authority and powers over specific functions in marine environment protection in Sri Lanka; and two supportive agencies, Sri Lanka Navy (SLN) and Sri Lanka Coast Guard (SLCG) which possess certain authority for law enforcement, delegated by mandated agencies. The unit of analysis was public agency and the purposive sampling was utilized to select representatives from each agency. The Primary data were obtained through in-depth interviews conducted among 18 respondents occupying higher level positions in six stakeholder agencies, utilizing semi-structured questionnaire to facilitate the flexibility in interviews. The secondary data were obtained through review of Acts, legislations, regulations, international conventions, and

published reports. The content analyses based on themes were used (Yin 2009) to analyze the data, and the trustworthiness was established through reliability procedures and triangulation.

DATA ANALYSES AND DISCUSSION

The data analysis resulted in identification of two distinguishable main perspectives; the maritime perspective and the law enforcement perspective, and six themes; legitimacy, operational, technical, logistic, training and development, and structure, process and policies; which illustrate the extensiveness of complexities exist in “purpose-specific organizational capacity”. The data analysis is presented through six identified themes, encompassing maritime and law enforcement perspectives separately under each theme, and summary of findings.

Capacity in Legitimacy - Maritime Perspectives

The Merchant Shipping Act (1971 and 1988), and regulations made under sections 126 and 321 of the Act by extraordinary gazette (2013, 1818/37) are applicable to organizations or persons engage in maritime functions in Sri Lanka for commercial purposes, which comprehensively encompass all functions such as; obtaining license; acquiring and operating ships; employing personnel with required competency certificates of applicable categories and levels to operate ships at sea etc. Similarly the International Maritime Organization (IMO) has adopted a convention on Standards of Training, Certification and Watch-keeping for Seafarers (STCW, 1995), and according to the convention, all professional mariners need to comply with STCW 95 standards. According to Merchant Shipping Act (1988, 2), complete exemption of this Act has been granted to ships of Sri Lanka Navy and other government entities, if their maritime functions are not for commercial purposes and any alternative governing body also does not exist as present to regulate such maritime functions of such government entities. It is common knowledge that the navies in the world are governed by well established and comprehensive rules and regulations and the naval ships are operated by highly professional personnel, and there is no maritime risk for world shipping from the navies. But it is not the case with other public agencies where such comprehensive system is not available. The exception provided in Act (1988, 2) for government agencies imply that, if the purpose of operation is not commercial, any government entity is authorized to operate fleet units at sea, without the approval of any maritime governing authority, rules or regulations, and it creates a very inappropriate and complex state in maritime field, affecting the safety of shipping at sea. This complexity in legitimacy of maritime functions, has surfaced due to the blanket exemption made in the Merchant Shipping Act (1988, 2) for government agencies, and nonexistence of any alternative government authority, rules or regulations to govern the fleet units of government agencies.

Capacity in Legitimacy - Law Enforcement Perspectives

The responsibility of marine environment protection in Sri Lanka is directly vested with four public agencies; Department of Wildlife Conservation (DWC); Coast Conservation Department (CCD); Marine Environment Protection Authority (MEPA); and Department of Fisheries and Aquatic Resources (DFAR); and a brief summary on divided mandate are illustrated in Table 1. The public agencies are vested with authority and powers in law enforcement functions such as; stopping and searching fishing vessels, seizing of boats and gear, making apprehension

(Fisheries and Aquatic Resources Act 1996, 46); entry into any land in the coastal zone, surveying, investigating, demolishing unauthorized structures (Coast Conservation Act 1981, 26 and 31); detaining ships, investigating, seizing of equipment, apprehension of offenders (Marine Pollution Prevention Act 2008, 10-13); entry into ship, investigating, seizing of equipment, apprehension of offenders (Department of Coast Guard Act 2009, 5).

The document review revealed that the Navy Act (1950) does not empower navy with law enforcement powers, but the President may order all or any of the members of the Navy to perform such non-naval duties as he may consider necessary in the national interest (Navy Act 1950, 21). This implies that navy has the legitimate authority only when the President of Sri Lanka makes such order. The Fisheries and Aquatic Resources Act (1996, 66) empowers naval personnel above the rank of petty officer to function as authorized officers of Department of Fisheries and Aquatic Resources (DFAR) and Marine Environment Protection Authority (MEPA) empowers any member of armed forces to act as an authorized officer when the authority is given in writing (Marine Pollution Prevention Act 2008, 10-13), but the Coast Conservation and Coastal Resource Management Act (1981) and Fauna and Flora Protection Ordinance (1937 and 1993) do not delegate law enforcement role to Navy. This scenario creates complexity about the legitimacy of law enforcement role entrusted to Navy as an organization. Similarly the Department of Coast Guard Act (2009, 4-5), provides its personnel the authority for law enforcement such as; stop, enter, board, inspect and search any place, structure, vessel and to arrest and detain any vessel; but none of the mandated agencies has delegated law enforcement authority to Coast Guard. These factors show the inconsistency and complexity in legislations with respect to delegation of law enforcement role to the Navy and Coast Guard.

Table 1: Summary of Legislations on Marine Environment Protection

Legislation	Provisions	Authority
Fauna and Flora Protection Ordinance No. 2 of 1937; as amended by Act No. 49 of 1993 and Act No. 12 of 2005; and Regulations	Act and regulations provide for the conservation of plants and animals, which have been declared as protective species, and declaration of National Parks and Marine Reserves.	Department of Wildlife Conservation
Coast Conservation and Coastal Resource Management Act No. 57 of 1981 and amended Act No. 49 of 2011	Survey of the coastal zone and the preparation of a Coastal Zone Management Plan, and to regulate and control development activities within the coastal zone.	Coast Conservation Department (CCD)
Marine Pollution Prevention Act No. 35 of 2008	Prevention, control and reduction of pollution in territorial waters of Sri Lanka or any other maritime zone,	Marine Environment Protection Authority

	and coastal zone.	(MEPA)
Fisheries and Aquatic Resources Act, No. 2 of 1996	Provide for Management, Regulation, Conservation and Development of the Fisheries and Aquatic Resources in Sri Lanka	Department of Fisheries & Aquatic Resources (DFAR)

Source: Author Construction

The maritime operations are isolated in nature and conducted far away from the shore and the mandated agencies need to conduct operations in the same geographical area relevant to marine environment protection. Hence the possibilities are great to detect offenders committing several offences coming under different Acts, as well as one offender committing many offences coming under several Acts. In both situations one mandated agency which makes the detection of offences coming under the Acts of other mandated agencies, is not in a position to initiate action, as the offences being committed are beyond mandated functions of the detecting agency. For an example if a fishing vessel simultaneously engaged in illegal fishing and dumping of ship waste-oil at sea far away from the coast; Department of Fisheries and Aquatic Resources (DFAR) is not mandated to take action on dumping of ship's waste-oil, whilst Marine Environment Protection Authority (MEPA) is not mandated to take action on illegal fishing. If two agencies DFAR and MEPA could delegate the authority and law enforcement powers to a supportive agency like the Navy as mentioned earlier, possibilities should exist for all agencies to make such delegation to other mandated agencies as well. This significant finding enlightens the complexities created, when the respective Acts do not delegate the authority of law enforcement functions to other agencies (at least the authority for apprehension and initial investigation), to other mandated agencies, though all agencies operate in the same geographical area far away from shore. This complexity has been created due to lack of comprehensiveness in legislations, and failure in assessing the entire marine environment protection spectrum, inclusive of vast geographical extent and practical issues encounter in law enforcement at sea.

Operational Capacity – Maritime Perspectives

The study reveals that maritime operational capacity provides the platform to launch law enforcement operations at sea and, it is analyzed and presented in three sections; maritime fleet units; ability of operating ships and craft; and operational support.

Strength of Maritime Fleet Units: Sri Lanka Navy possesses the largest fleet of ships and craft exceeding 300 and efficient shore-based maritime supporting facilities to undertake repair and maintenance work (Director Operations Navy 2014, pers. Comm., 05 April) and the Coast Guard (SLCG) possesses a small fleet of 15 patrol craft (Director Operations Coast Guard, 2014, pers. Comm., 08 April), and none of the mandated agencies has ships or craft. This maritime constraint restricts law enforcement operations of mandated agencies to land-based actions and shows their dependence on Navy and Coast Guard to facilitate the law enforcement at sea.

Table 2: Personnel Necessary for Operating Ships and Craft

Department	Navy Ships	Merchant Ships
Deck	Commanding Officer	Master
	Executive Officer	Chief Officer
	Gunnery Officer	2 nd Officer
	Navigating Officer	3 rd Officer
	Communication Officer	4 th Officer
	Additional Officers	Radio Officer
	None-officer category staff	None-officer category staff
Technical	Engineering / Electrical Officer	Chief Engineer
	Assistant Engineer Officers	2 nd Engineer
	Artificer Marine Engineering	3 rd Engineer
	Artificer Electrical / Electronic	4 th Engineer
	Other technical staff	Other technical staff
Logistic	Supply Officer	Purser
	Other logistic staff	Other logistic staff

Source: Author Construction

Ability of Operating Ships and Craft: The study reveals that professionally competent and experienced personnel are required to take-charge and operate the ships and craft at sea. The Table 2 which was constructed based on the information gathered from Director General of Merchant Shipping (2014, pers. Comm., 08 April) and Director Project and Plans at Navy Headquarters (2014 pers. Comm. 05 April), illustrates the different professionals required to operate ships. The Director Project and Plans at navy headquarters revealed its professional capacity stating that:

“The navy has professionally qualified and competent officers and sailors with years of experiences in operating ships and craft. These personnel serve in different type of ships ranging from small craft to big ships and become fully competent personnel to operate any type of ship. Since these professionally qualified personnel are bonded with navy to serve

specific period, their services available to navy continuously to meet the navy's maritime requirement".

According to the Deputy Director - Department of Fisheries and Aquatic Resources (DFAR) there had been one deep-sea fishing trawler "*Wennappu Maru*", owned by DFAR in 1980s and it had been subsequently handed-over to the navy due to incapacity of DFAR to operate the ship (2014 pers. Comm., 26 April). This fact was confirmed by Director Operations of the Navy (2014, pers. Comm., 5 April), who stated that:

"Navy took over "*Wennappu Maru*", and utilized the ship to transfer fresh provisions to naval bases, and in addition to that navy used to provide maritime assistance to public agencies in the past, such as operating fisheries training vessel "*Samudra Maru*" of DFAR, and "*MT Mahaweli*" and "*MT Maduru Oya*" of Ceylon Petroleum Corporation, on behalf of those agencies".

According to Director General of Merchant Shipping in Sri Lanka (2014, pers. Comm., 08 April), obtaining professional qualifications involve professional examinations as well as serving onboard ships for a specified period of time in each level, to gain experiences in ship-operations, and personnel with such maritime professional qualifications and experiences are offered lucrative remuneration packages in the range of US\$ 5,000 – 10,000 per month in the shipping industry, which is many times the salary scale in public sector. The analysis of data, as illustrated in column two of Table 4 reveals that, except the Navy and Coast Guard none of the other agencies has professionally competent and experienced personnel to operate ships, and due to the low salary structure in public agencies they are unable to employ such professionals and this had been a reason for them to handover "*Wennappu Maru*" to Navy (Operations Manager MEPA 2014, pers. Comm., 25 March; Director General CCD 2014, pers. Comm., 25 March; Deputy Director DFAR 2014, pers. Comm., 26 April).

Operational Support: The Director Operations of Navy (2014, pers. Comm., 05 April) making a comment stated that:

"Maritime operations require effective and efficient operational support including 24-hour operations room with staff to monitor ships deployment, coordinate and arrange urgent operational, technical and logistic support for fleet units at sea, at any given time and navy has the necessary capacity to provide operational support covering the entire coastal belt of Sri Lanka".

According to Director - Monitoring Controlling and Surveillance (MCS) at Department of Fisheries and Aquatic Resources, it has 21 MCS stations around the coast of Sri Lanka to monitor, but it is confined to providing communications facilities for fishing boats at sea (2014, pers. Comm., 26 April), and none of the other agencies has facilities for operational support.

Operational Capacity - Law Enforcement Perspectives

The operational capacity in law enforcement perspective was captured in two contexts; the subject knowledge and experiences; and the law enforcement process, in marine environment protection.

Subject Knowledge and Experiences in Marine Environment Protection: The scope of the knowledge in marine environment protection extends to many diverse fields and areas such as; knowledge on applicable legislations, regulations, authority, powers, international laws and conventions; awareness and acquaintance in marine and ecosystem, mangroves, coral reefs, biodiversity, marine reserves; knowledge in coastal fishing, prohibited fishing areas, species and methods (Deputy Director DFAR 2014, pers. Comm., 16 April); awareness in types of marine pollutions, main contributing sources of pollution, pollution investigation process, computing costs of pollution to claim damages (Operations Manager MEPA 2014, pers. Comm., 25 March); familiarity in procedures and process involved in development activities, management plan and commercial activities in coastal zone (Director General CCD 2014, pers. Comm., 25 March). The findings from the study, as illustrated in column two of Table 3 reveals, the capacity of mandated agencies in subject knowledge and experiences confined to the mandate-specific functions of the own agency, and do not possess capacity in functions of other agencies, as no knowledge transfer takes place among mandated agencies. Similarly the Navy and Coast Guard which have the dominance at sea, possess only limited knowledge related to fisheries and aquatic resources, with no experiences in the marine environment protection. (Director Operations Navy 2014, pers. Comm., 05 April; Director Operations Coast Guard, 2014, pers. Comm., 08 April),

Table 3: Comparison of Capacity in Marine Environment Protection

Organization	Capacity in Subject Knowledge	Capacity in Law Enforcement Process			
		Surveillance	Detection	Apprehension	Legal Process
Sri Lanka Navy	Very limited	Very high capacity	Very high capacity	Very high capacity	Nil
Sri Lanka Coast Guard	Very limited	Limited	Limited	Limited	Nil
Coast Conservation Department	Function specific only	Limited; only land-based	Limited; only land-based	Limited; only land-based	Only Function-specific capacity
Marine Environment Protection Authority	Function specific only	Limited; only land-based	Limited; only land-based	Limited; only land-based	Only Function-specific capacity

Department of Fisheries & Aquatic Resources	Function specific only	Limited; only land-based	Limited; only land-based	Limited; only land-based	Only Function-specific capacity
Department of Wildlife Conservation	Function specific only	Limited; only land-based	Limited; only land-based	Limited; only land-based	Only Function-specific capacity

Source: Author Construction

Table 4: Summary of Maritime Capacity - Availability of Competent Personnel

Organization	Maritime Capacity – Competent Personnel		
	Operational	Technical	Logistic
Sri Lanka Navy	Yes	Yes	Yes
Sri Lanka Coast Guard	Yes	Limited	Limited
Coast Conservation Department	Nil	Nil	Nil
Marine Environment Protection Authority	Nil	Nil	Nil
Department of Fisheries and Aquatic Resources	Nil	Nil	Nil
Department of Wildlife Conservation	Nil	Nil	Nil

Source: Author Construction

Law Enforcement Process in Marine Environment: The law enforcement process involves four inter-connected tasks; surveillance, detection, apprehension and legal process. The legal process incorporates investigation, evidence processing, and initiating legal action in courts, and it is essential to follow the correct procedures and process in each inter-connected stage to facilitate an effective prosecution in courts (Legal Officer MEPA 2014, pers. Comm., 25 March). The analysis of data, as illustrated in Table 3 reveals that all agencies except Navy and Coast Guard possess very limited land-based capacity in surveillance, detection and apprehension, mainly due to non-availability of maritime fleet units. Similarly the navy which has the dominance at sea possesses capacities in surveillance, detection and apprehension, but do not possess the mandate or competency in legal process (Director Operations Navy 2014, pers. Comm., 05 April). Each mandated agency possesses only the mandate-specific capacity in legal process, and do not possess capacity for the mandated functions of other agencies and this prevents one agency even taking primary law enforcement action such as apprehension and

investigation, for any offence coming under the purview of another mandated agencies, though all agencies are suppose to operate in the same geographical area away from the coast.

Technical Capacity - Maritime Perspective

According to the Director Engineering - Navy (2014, pers. Comm., 05 April) repair and maintenance work of fleet units is an enormous task, involving precise maintenance work; routine maintenance schedules at every 50 / 100 / 250 / 500 / 1000 running hours of all machinery; major repair and maintenance work; annual docking; as well as many varieties of marine, electrical and electronic spare parts. Navy has three large bases with technical capacities in Colombo, Galle and Trincomalee, and the maintenance work are undertaken by ship's technical staff onboard the ship, and skilled personnel in shore-based workshops, and such maintenance work requires myriad of physical resources and skilled personnel. The data gathered through interviews reveals that except for the Navy and Coast Guard none of the other agencies has the maritime technical capacity as illustrated in column three of Table 4. The Director General Engineering (2014, pers. Comm., 05 April) at Navy Headquarters, with over 25 years of experience, made a enlightening comment stating that;

“Since fleet units are exposed to a highly corrosive environment, it is essential to have precise and systematic maintenance schedules from daily maintenance routine to annual docking. The maintenance work involve many different spare parts in different types of machinery, brands and models, as well as workshops with necessary machinery, equipment and tools in all major berthing locations, and it has become a huge and complex task which is unseen from the surface. Additionally it requires highly skilled and experienced personnel in marine engineering, electrical, and electronic engineering fields to undertake such complex maintenance work in shore-based workshops as well as onboard ships and the navy has the capacity to provide all necessary technical support. We generally undertake all repair work and very rarely outsource repairs to private entities due to very high costs involved in ship repairs”.

The data analysis reveals that a maritime fleet consists of variety of ships and craft, fitted with different types of engines ranging from small outboard motors (OBMs) to large inboard engines, and each ship contains main engines, auxiliary engines, propulsion systems, pumps, electric motors, electrical and electronic equipment and many other sophisticated systems (Director General Engineering 2014, pers. Comm., 05 April). These factors highlight the complexities of technical capacity in maritime perspective and these complexities are created due the extensiveness of physical resources and skilled human resources with experiences, needed for maintenance of fleet units.

Technical Capacity – Law Enforcement Perspective

Since the law enforcement process involves surveillance, detection, apprehension, investigation, evidence processing and initiating legal action, it is necessary to possess the required technical capacity to support all possible activities of the law enforcement process. The technical capacity includes the necessary physical resources such as testing equipment, accessories for taking

samples, laboratory facilities for sample testing etc., as well as personnel with required technical competencies to adopt correct procedures and processes, in sampling and testing (Operations Manager MEPA 2014, pers. Comm., 25 March and Operations Manager DFAR 2014, pers. Comm., 26 April). For an example in the event of dumping of oil waste from a ship, it is necessary to follow the guidelines promulgated by International Maritime Organization (IMO) and it involves; taking samples from the all waste tanks, sludge tanks and bilges of the offending ship; establishing of ship's position through global positioning system (GPS); taking photographs at various points from different locations and expanded photographs of drifting oil; storing oil samples in correct storing devices; preservation of samples in appropriate location with correct temperature settings; labeling and shipping of the samples adopting correct procedures (Operations Manager MEPA 2014, pers. Comm., 25 March). The detection and investigation process, involves preparation of scientific reports which require specific technical knowledge and correct procedures such as; inspection reports - which contain the observations made and evidence gathered at the site, (e.g. taking measurements); and the analytical reports - which are prepared to highlight the violations, compliance or to provide explanations, which includes measurement of physical parameters, strength and quality standard (Gunawardena 2009, 126-128). Similarly the agencies should possess technical expertise and, competent and experienced personnel to compute and prepare the reports containing the costs involved in compensation claims to recover the cost of damage caused by the offender, and preparation of such reports is a complex process (Operations Manager MEPA 2014, pers. Comm., 25 March).

The comments made by interviewed officers reveal that the mandated agencies possess good technical capacity, knowledge and experiences relevant to the subjects relevant to own agency, but not the subjects relevant to other agencies (Operations Manager MEPA 2014, pers. Comm., 25 March and Operations Manager DFAR 2014, pers. Comm., 26 April). Complexities are evident in technical capacity, as mandated agencies are unable to deploy own expertise at sea, due to none availability of maritime fleet units, whilst the Navy and Coast guard with dominance at sea in surveillance and detection, are unable to initiate action due to non-availability of required physical resources and personnel with technical expertise (Director Operations SLN 2014, pers. Comm., 05 April). These complexities are formed due the extensiveness of technical processes and the nature of technical expertise, skills and experiences involved, and the inability of the agencies to provide collective law enforcement effort comprising both maritime and law enforcement capacities.

Logistic Capacity - Maritime Perspective

The Director Logistics (2014, pers. Comm., 05 April) at navy headquarters explained the complexities in providing shore-based logistic support stating that;

“Providing shore-based logistic support is a highly complex task which involves huge inventories containing many different varieties of spare parts. Supplying of such a number of different spare parts of different models, ranging from small springs to engines is a highly complex process. In addition to the spare parts, large quantities of fuel, rations and fresh water are required at berthing locations around the country, and logistic operation of such

magnitude requires the structure, process and highly competent and experienced logistic staff and we have the capacity to provide such logistic support”.

The logistic support involves supplying variety of marine engineering, electrical and electronic spare parts for many different types of ships, brands and models to facilitate smooth maintenance schedules, and many of these spare parts involved foreign procurement. According to Director Logistics of the navy (2014, pers. Comm., 05 April), these spare parts are distributed efficiently to ensure that right spare parts, in right quantities, are available at the right location at the right time, to facilitate smooth and uninterrupted maintenance work. Achieving this huge task requires highly skilled, competent and experienced staff to handle the logistic requirement and as illustrated in last column of Table 4, none of the agencies except the navy has such capacity. These complexities are formed due the extensiveness of logistic requirements and processes involved, as well as the nature of expertise, competencies of personnel required for the logistic operation.

Logistic Capacity - Law Enforcement Perspective

The logistic capacity required for law enforcement in marine environment protection includes capacity in providing necessary standard physical resources such as equipment and accessories for testing, taking samples, sample preserving, visual evidence recording, laboratory facilities for sample testing etc., and all mandated agencies except navy and coast guard possess the necessary equipment and accessories required for their mandated functions in marine environment protection except laboratory facilities, and they are made available throughout the coastal belt, through their regional network but unable to extend such facilities at sea due to non-availability of maritime capacity (Operations Manager MEPA 2014, pers. Comm., 25 March; Operations Manager DFAR 2014, pers. Comm., 26 April). Since the required equipment and accessories are standard equipment of few varieties, not much complexity is involved in logistic capacity under normal circumstances, but in the event of a disaster, such as oil spill from an oil tanker, the logistic capacity involved would be a complex issue needing a massive resources and collaborative effort.

Capacity in Training and Development - Maritime Perspectives

The professionally qualified officers and seamen in the fields of deck and engineering (marine, electrical, electronic and shipwright) are required to operate and maintain fleet units, and providing such qualifications requires training institutes and ships to facilitate continuous training and development facilities during different stages of the career, to obtain the competency and experience at required levels (Merchant Shipping Act 1971, 1988 & 2013). According to the Director Training of the navy (2014, pers. Comm., 05 April) the training directorate in the navy, plan and implement training schedules of the navy, through own training institutes to instill the required professional competency. Since the naval personnel are governed by strict regulations of the Navy Act (1950), the services of such trained naval personnel are available to the navy for a longer period until they are permitted to leave the service. According to the navy, establishing and operating a training institute which incorporates deck, marine engineering, electrical and

electronic engineering departments, requires substantial amount of investment on its resources which includes myriad of working models, equipment and tools, and professionally qualified lecturers and instructors, and it is highly impossible for small agencies to establish and operate maritime institutes. The study revealed that none of mandated agencies except the navy has maritime training institutes to provide maritime training (Director DFAR 2014, pers. Comm., 26 April; Operations Manager MEPA 2014, pers. Comm., 05 April; Director General CCD 2014, pers. Comm., 30 April). Though private maritime training institutes exist in Sri Lanka for other agencies to obtain maritime training for their personnel, there is no guarantee that such trained personnel would remain in the agency after obtaining the maritime professional qualifications, in view of lenient governing regulations of public agencies and lucrative employment opportunities in merchant shipping industry for such personnel (Director DFAR 2014, pers. Comm.).

Capacity in Training and Development – Law Enforcement Perspectives

The mandated agencies need to provide training and development relevant to the mandated functions and law enforcement process, to enhancement the professional knowledge of members in mandated agencies. The study reveals that mandated agencies provide limited training and development facilities for their staff locally and in foreign countries, but a comprehensive training and development process, as well as an assessing of previous law enforcement actions to ascertain the strengths and weaknesses of previous actions and updating of own training process based on feedbacks, do not exist in mandated agencies (Director DFAR 2014, pers. Comm., 26 April; Operations Manager MEPA 2014, pers. Comm., 05 April). Though all agencies operate in a common geographical area and possibilities exist for detection of multiple offences coming under different agencies, the training programmes of agencies do not incorporate mandated functions of other agencies, depriving the opportunity of extending comprehensive knowledge in marine environment protection and law enforcement, to authorized officers of all the agencies. The navy has its own training institutes and comprehensive training schedules for naval subjects, but excludes subjects related to marine environment protection, depriving the opportunity of extending knowledge in marine environment protection to naval personnel (Director Training Navy 2014, pers. Comm., 05 April). The mandated agencies provide limited training on marine environment protection for naval and coast guard personnel attached to ships intermittently, but such persons are transferred to other naval establishments after one year according its policy, depriving the utilization of their gained competency.

Capacity in Organizational Structure, Process and Policies - Maritime Perspective

Since any collaborative effort is focused on specific purpose and objectives, the internal organizational structure, processes and policies should be supportive for the collaborative purpose. The analysis of data collected from naval sources reveals that maritime agencies need supportive structure, processes and policies at different hierarchical levels to plan and implement maritime operations, and navy's command structure consist of; headquarters with separate directorates for operational, marine engineering, electrical engineering, logistics, project and plans, personnel, and training; regional commands covering the entire country with many ships and bases under each command; and well-established and proven processes developed according to the navy's policies; which are supportive for maritime functions relevant to naval missions and

objectives (Director Personnel of the navy, 2014, pers. Comm., 05 April). The Coast Guard also has a similar structure, processes and policies though not in the same caliber of Navy and, none of other mandated agencies has the structure, process and policies supportive of maritime functions, as illustrated in Table 5.

Table 5: Comparison of Capacity in Organizational Structure and Process

Organization	Structure, Processes and Policies					Law Enforcement Functions
	Maritime Perspective					
	Operations	Technical	Logistic	Training		
Sri Lanka Navy	Yes	Yes	Yes	Yes	Very Limited	
Sri Lanka Coast Guard	Yes	Limited facilities	Limited facilities	Limited facilities	Limited	
Coast Conservation Department	Nil	Nil	Nil	Nil	Only for own mandated functions	
Marine Environment Protection Authority	Nil	Nil	Nil	Nil	Only for own mandated functions	
Department of Fisheries & Aquatic Resources	Communication network only	Nil	Nil	Nil	Only for own mandated functions	
Department of Wildlife Conservation	Nil	Nil	Nil	Nil	Only for own mandated functions	

Source: Author Construction

Capacity in Organizational Structure, Process and Policies - Law Enforcement Perspective

The data gathered from mandated agencies revealed that mandated agencies possess organizational structure, process and policies supportive for the mandated law enforcement functions of the own agency, but functions coming under the purview of other agencies, are not incorporated (Director DFAR 2014, pers. Comm., 26 April; Operations Manager MEPA 2014,

pers. Comm., 05 April; Director General CCD 2014, pers. Comm., 30 April), and for an example the training and development processes and policies do not catered for imparting knowledge on functions coming under other mandated agencies. The organizational structure, processes and policies of the navy are not supportive for law enforcement role, and marine environment protection aspect has not been incorporated in navy’s training schedules. The navy’s personnel deployment and transfer policy is established to provide exposure for the naval personnel in different locations and tasks, and naval personnel are transferred between ships and shore establishments every year in rotational basis (Director Personnel Navy 2014, pers. Comm., 05 April). The same policy is implemented in the Coast Guard as well (Director General SLCG 2014, pers. Comm., 08 April). This implies that one person in the navy or coast guard would not serve in the same ship and same area continuously for more than one year. Hence, limited training on marine environment protection provided intermittently by mandated agencies for naval and coast guard personnel attached to ships, become ineffective as such personnel are available only for a period of one year. These complexities have been formed due to the absence of purpose-supportive structure, process and policies in both mandated and supportive agencies.

SUMMARY OF FINDINGS

The summary of findings is presented in two perspectives; the empirical perspective and the theoretical perspective.

Empirical Perspective: A summary of empirical findings containing the complexities exist in organizational capacity and, how and why such complexities were formed, are illustrated under two main perspectives separately in Table 6 (maritime perspective) and Table 7 (law enforcement perspective).

Table 6: Summary on Complexities in Organizational Capacity - Maritime Perspective

Capacity	Nature of Complexity	How and Why Complexities are Formed
Capacity in Legitimacy	Blanket exemption in maritime functions, inclusive operating ships has been given to Government entities, posing complexity in maritime operations.	a) Merchant Shipping Act / regulations are confined to merchant shipping, in commercial aspect, and it does not regulate the agencies involved in non-commercial maritime functions. b) Though government entities are exempted from Merchant Shipping Act, no other authority exists to regulate the maritime functions of exempted entities.
Operational Capacity	This is the platform to launch marine law enforcement activities, and a huge disparity exists in capacities of Navy, Coast Guard, and directly mandated agencies,	Navy and Coast Guard have all operational capacities whilst mandated agencies:- a) Do not possess maritime fleet units, competent personnel and operational support to operate fleet units to cover the vast sea area.

	affecting operational capacity	b) Are unable to employ competent personnel due to extensiveness in obtaining maritime competencies, absence of own training facilities, and low salary scales in public sector in Sri Lanka.
Technical Capacity	Though technical capacity is essential to operate ships and, all agencies except the Navy do not possess technical facilities and expertise, and competent personnel for repair / maintenance work of ships/craft.	All the agencies except Navy /Coast Guard are unable to provide facilities for repair and maintenance work of fleet units, due to extensiveness in; maintenance and repair work; shore-based workshops; machinery and tools; myriad of spare parts; personnel with technical competencies. Small organizations similar to the mandated agencies are unable to outsource repairs due to very high costs involved in ships repairs.
Logistic Capacity	Maritime operations need logistic support in many aspects, covering the entire coast and, all agencies except the Navy do not possess logistic capacity.	No agency except Navy / Coast Guard, are able to provide such logistic facilities for maritime operations due to the extensiveness involved in; requirement of myriad of spare parts of different categories / models / brands; procurement procedures; inventory controlling; distributing network; competent, skilled and experienced logistic staff.
Training and Development Capacity	Agencies need to provide training and development schedules, in training institutes and ships, to achieve and sustain maritime capacity, but none of the agencies except Navy has such capacities.	a) Extensiveness in resources and facilities required to establish maritime institute, make it difficult for small mandated agencies to establish such institutes. b) Though private institutes are available for mandated agencies to train personnel, a doubt exists about the possibility of retaining such trained personnel due to lenient regulations with respect to bonds and low salaries in agencies.
Capacity in Purpose-supportive Structure, Process and Policies.	The organizational structures, processes and policies of all agencies, except Navy and Coast Guard are not supportive for maritime functions and disparities exist among agencies.	The organizational structure, processes and policies of the Navy and Coast Guard are supportive for maritime functions as they are in line with own primary missions and tasks. All mandated agencies do not have supportive structure and processes for maritime functions as it is not their primary missions, as well as the inability of small agencies to have such structure and process.

Source: Author Construction

Table 7: Summary on Complexities in Organizational Capacity - Law Enforcement Perspective

Capacity	Nature of Complexity	How and Why Complexities are Formed
Capacity in Legitimacy	Paradox and ambiguity in the law enforcement role entrusted to navy.	Due to inconsistency in incorporating law enforcement role to the navy by Navy Act and due to delegation of such authority to Navy by Acts of mandated agencies.
	Disparity in delegating law enforcement powers to Navy and Coast Guard	Flaws in legislations of mandated agencies during incorporating law enforcement role for Navy and Coast Guard; not maintaining consistency in formulating legislations with respect to delegation of authority.
	Inability of mandated agencies to take action for offences coming under another agency in multiple-offences	a) Failure to appreciate interdependency of mandated agencies / isolated nature of sea operations conducted in a vast geographical sea area far away from the shore. b) Promulgation of legislations without comprehensive assessment of practical law enforcement issues at sea.
Operational Capacity	Mandated agencies and supportive agencies are unable to enforce the entire law enforcement process at sea, and unable to deploy experienced and competent personnel at sea, to comprehensively address all the issues in law enforcement.	a) Both mandated agencies and supportive agencies do not have capacity in the entire law enforcement process (surveillance to legal process) hampering enforcement. b) Maritime incapacity of mandated agencies prevents deployment of their competent personnel at sea. c) Inability of navy to provide subject knowledge and experiences to naval personnel denies presence of operationally competent naval personnel at sea. d) None existence of knowledge sharing in all subjects among all agencies, deny the capacity of agencies in providing personnel with all-round competency.
Technical Capacity	Presence of technical expertise at sea for law enforcement is denied, and disparities in physical resources; and technical skilled and experiences personnel exist among agencies.	a) Maritime incapacity of directly mandated agencies prevents utilization of its physical resources and competent personnel with technical expertise at sea. b) Though Navy and Coast Guard have maritime capacity, they are unable to provide technical resources and technically competent personnel for enforcement action due to extensiveness of; technical expertise; technical procedures; investigating process involved.

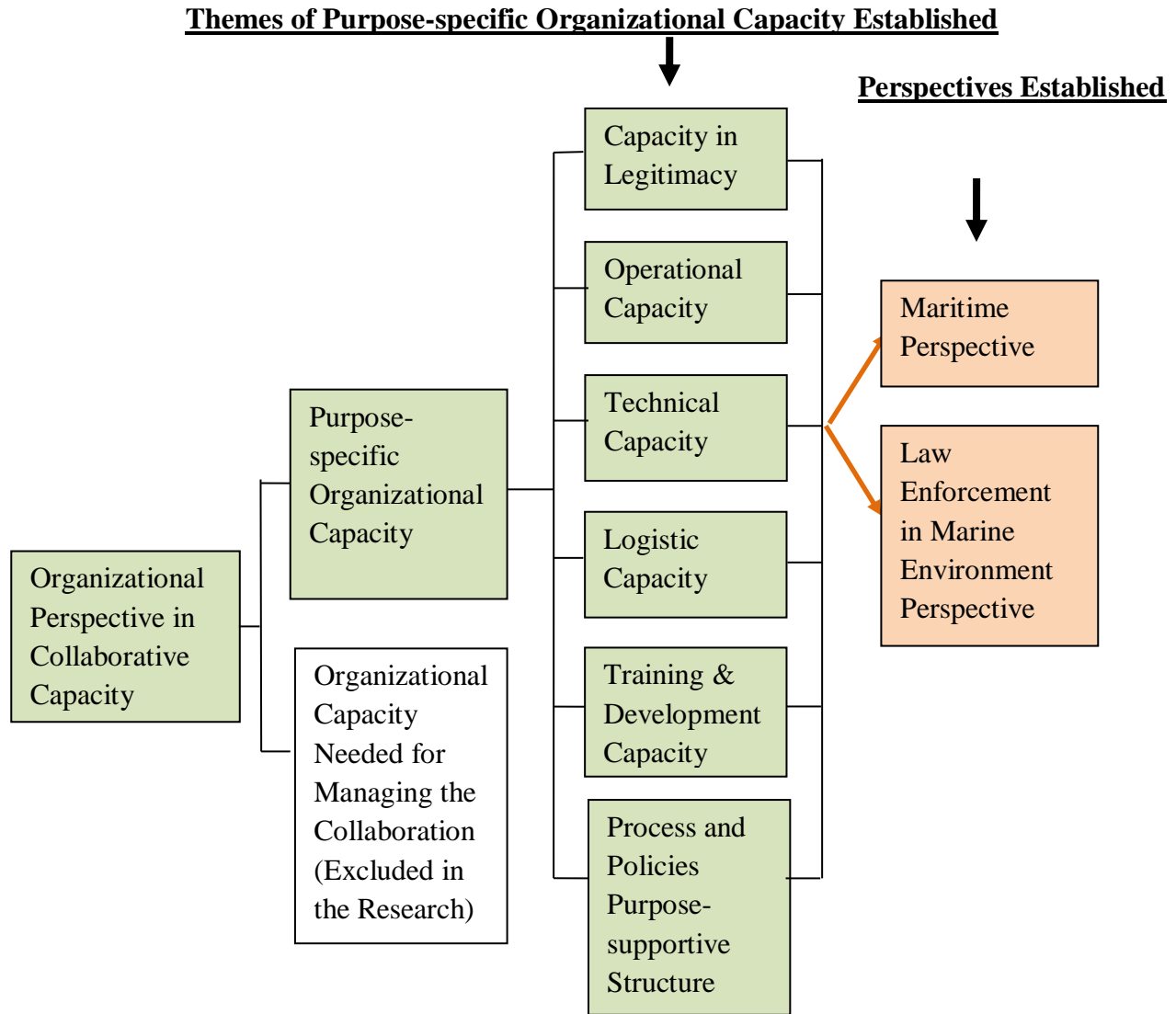
<p>Logistic Capacity</p>	<p>Law enforcement process needs physical resources and services, at sea, and the disparity in logistic capacity in mandated / supportive agencies deprives needy logistics at sea.</p>	<p>a) Since mandated agencies do not possess maritime capacity, law enforcement is confined to land-based operations in coastal area and unable to utilize its logistic capacity in law enforcement at sea.</p> <p>b) Though Navy and Coast Guard have maritime capacity, they do not possess logistic capacity to provide needed resources and services required for law enforcement at sea.</p>
<p>Training and Development Capacity</p>	<p>Disparities exist in training / development in law enforcement aspects, and action has not been taken to include the functions of all mandated agencies in training schedules of all the agencies.</p>	<p>a) Confining the training and development schedules of the navy to naval subjects, deprives naval persons gaining competencies in law enforcement aspects.</p> <p>b) None existence of feedback information system to transfer lessons learnt from previous actions deprives updating training, to enhance success in enforcement.</p> <p>c) Confining of training of mandated agencies to own functions deprives the comprehensive knowledge in marine environment protection to other agencies.</p>
<p>Capacity in Structure, Process and Policies</p>	<p>The organizational structure, processes and policies of all agencies are not supportive for law enforcement functions, and the policy on training in marine environment protection is not comprehensive.</p>	<p>a) The organizational structure, processes and policies of each mandated agency is supportive only for own mandated functions.</p> <p>b) Though Navy dominates the sea, its organizational structure, processes and policies are not supportive for law enforcement role and functions.</p> <p>c) The policy of mandated agencies to exclude the subjects related to functions of other agencies in own training and development schedules deprives all of them possessing comprehensive knowledge on all functions of marine environment protection.</p>

Source: Author Construction

Theoretical Perspective

The established theoretical framework is illustrated in Figure 1, which incorporates two main perspectives; the maritime perspective and the marine law enforcement perspective; and six themes (capacity in legitimacy; operational capacity; technical capacity; logistic capacity; training and development capacity, and purpose-supportive structure, process and policies) which explore and understand the complexities in “purpose-specific organizational capacity”;

Figure 1: Theoretical Framework - Themes of Purpose-specific Organizational Capacity



Source: Author Construction

CONCLUSIONS

The study reveals the existence of two clearly distinguishable main perspectives of “purpose-specific organizational capacity”, identified as maritime capacity and law enforcement capacity. The involved agencies need both capacities to facilitate law enforcement, and complexities are visible in both perspectives, due to inability of the agencies to acquire and sustain both capacities; the mandated agencies possess only law enforcement capacity whilst supportive agencies, Navy and Coast Guard, which have the dominance at sea possess only maritime

capacity; making the law enforcement in marine environment protection a highly interdependent and complex scenario.

The complexities exist in both maritime and law enforcement perspectives, are visible in six identified themes of organizational capacity; legitimacy, operational, technical, logistic, and training and development, and structure process and policies. The complexities in legitimacy have been formed due to failure in appreciating; the reality in ground situation, and the entire spectrum of law enforcement in marine environment protection at sea; and inconsistency and lack of comprehensiveness in existing legislations. The complexities in operational, technical, logistic, training and development are created due to extensiveness of physical resources, human resources and expertise and competencies involved in “purpose-specific organizational capacity”, and nonexistence of purpose-supportive structures, processes and policies in all agencies for imparting capacities in both main perspectives. This implies the significance in exploring and identifying the complexities exists in organizational capacity during pre-collaborative stage and addressing the issues prior to the implementation of the collaboration.

It is highly unlikely that comparatively small mandated agencies would be able to accomplish required maritime capacity, but possibilities exist for supportive agencies, Navy and Coast Guard to accomplish law enforcement capacity - if backed by purpose-supportive policies and processes. It is impractical and unproductive for each mandated agency to operate independently in this vast geographical area, confining the law enforcement role exclusively for the own mandated functions, when provisions exist to delegate authority. There is high potential to establish a collaborative mechanism consisting mandated agencies and supportive agencies, to boost the presence of competent personnel at sea, to facilitate effective law enforcement in marine environment at sea. This could be achieved, by delegating required legitimate authority to all relevant agencies, and formulating and conducting comprehensive training programmes encompassing all functions related to marine law enforcement of all agencies, and this would facilitate optimum utilization of both maritime capacity and law enforcement capacity of all the agencies.

The identified themes of organizational capacity; legitimacy, operational, technical, logistic, training and development, and structure, process and policies; were established as suitable themes for in-depth studies to explore and understand the embedded complexities in “purpose-specific organizational capacity”. Since these complexities have been identified, the scope of future research could be extended to ascertain the options available to overcome the complexities exist in six identified themes.

Since the presence of capacity needed for the management of collaboration and “purpose-specific capacities” are common in many research contexts, the “disintegrated perspectives approach” established in the study could be utilized for exploring other capacities, as well as capacities in different research contexts, to facilitate the rational comparison of research findings. Similar contexts are available in many developing countries, which need to utilize the full potential of maritime dominance of Navy and Coast Guard in marine environment protection

functions, as developing countries are unable to provide large public agencies with high maritime capacity, exclusively to protect the marine environment in a vast geographical area. Hence the findings are significance in regional and global context, as possibilities exist to utilize “disintegrated perspectives approach” in such research contexts, paving the way for generalizability.

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