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Innovating Incident Command System for Nepal: Adopting Global Practices to Local

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Abstract

Nepal's geographical and geological conditions, intensified by climate change, render it susceptible to frequent and severe natural hazards, leading to numerous cascading disasters that cause significant loss of life and economic damage yearly. Notwithstanding attempts to enhance disaster preparedness and response, current systems frequently fail to cope with the intricacies of managing complex disaster scenarios. The study, utilizing qualitative methods such as a comprehensive literature review, content analysis of existing laws, regulations, and policies, as well as interviews with key informants, concludes that a robust mechanism, specifically an Incident Command System, is essential for effective national response. This system offers a standardized, hierarchical framework that unifies personnel, facilities, equipment, and communications, enhancing coordination and efficiency in disaster response efforts. The system prioritizes standardized terminology, a feasible span of control, and thorough resource management, facilitating seamless collaboration among all responding agencies. The lack of a command structure results in coordination challenges, information deficiencies, and ineffective resource distribution during emergencies.

Introduction

Nepal's geographical and geological conditions, intensified by climate change, render it susceptible to frequent and severe natural hazards, leading to several cascading disasters that inflict significant loss of life and economic damage each year. Not with standing attempts to enhance disaster preparedness and response, current systems frequently fail to cope with the intricacies of managing complex disaster scenarios. The study, utilizing qualitative methodologies such as a comprehensive literature review, content analysis of existing laws, regulations, and policies, along with interviews with key informants, concludes that a robust mechanism, specifically an Incident Command System (ICS), is essential for effective national response. This system offers a standardized, hierarchical framework that amalgamates personnel, facilities, equipment, and communications, thereby enhancing coordination and efficiency in disaster response efforts. The system prioritizes standardized terminology, a feasible span of control, and thorough resource management, facilitating seamless collaboration among all responding organizations. The lack of a command structure results in coordination challenges, information deficiencies, and ineffective resource allocation.

The frequency of disasters in Nepal has escalated in recent years due to the combined effects of seismo-tectonic processes and the Asian monsoon. These occurrences have heightened the susceptibility of the populace. Appropriate strategies, laws, and technological expertise can mitigate risk. The Government of Nepal has established various laws, ordinances, rules, and frameworks to tackle difficulties in disaster management (Government of Nepal [GoN], 2024). These documents direct the catastrophe risk reduction and management process in Nepal, nevertheless, execution is constrained for effective response. Numerous duplications exist in the roles and obligations of the performer and the institution. Consequently, it can be contended that there is an absence of a strategic vision for enhancing Nepal's emergency preparedness and response system, thereby transitioning from a reactive to a more methodical approach to readiness for response (GoN, 2022).

In the field of Disaster governance, Nepal employs four major disaster governance paradigms: (1) response and recovery; (2) disaster risk reduction and management; (3) integrated climate change adaptation and disaster risk reduction; and (4) federalized disaster risk reduction where Nepal moved from one paradigm to another while maintaining the prior ones. These changes now demand a structured framework for dealing with emergencies (Vij et al., 2020). The Disaster Risk Reduction and Management Act of 2017 recognizes evidence-based decision-making as crucial for the transition from response-oriented to anticipatory and preventive strategies. The Local Government Operation Act,

2017, has empowered and required local government to perform several functions for Disaster Risk Reduction (Adhikari & Gautam, 2022). Nevertheless, an effective reaction to the crisis is severely constrained by the lack of a recognized hierarchical framework. ICS has proven useful in numerous nations for successful emergency response (Wang et al., 2012). The ICS is a standardized methodology often organized into five functional domains: command, operations, planning, logistics, and finance. The system facilitates the integration of persons, facilities, equipment, procedures, and communications within an organizational framework. The incident commander must reconcile the organization's size and structure with the quantity of units and staff (Federal Emergency Management Agency [FEMA], 2008).

The National Incident Management System (NIMS), established by Federal Emergency Management Agency (FEMA) in the United States, offers directives for public agencies during all four phases of event management: mitigation, readiness, response, and recovery (FEMA, 2014). ICS is a crucial element of NIMS, offering a standardized hierarchical framework to enhance communication across sectors. The core tenets of the ICS include a definitive chain of command with assigned team roles and a versatile, scalable framework. The ICS is a prevalent management framework for structuring and managing emergency response operations. It offers a standardized framework and procedural guidelines that enable various authorities and groups to collaborate efficiently during emergencies. This system is essential for controlling and responding to incidents, facilitating a coordinated and organized strategy to safeguard the individuals involved and mitigate any danger or loss (Hartono et al., 2020).

Moyanihan (2009) asserted that ICS represents a hybrid of network and hierarchy, hence facilitating efficient and effective communication, resource management, and agency coordination. Various nations possess divergent viewpoints regarding the ICS due to discrepancies over its nature, the magnitude of disasters, and the execution of the ICS. ICS improved organizational coordination by establishing clear command lines, providing a structured framework, integrating diverse responders, and enhancing the efficacy of emergency response operations by addressing coordination, organizational, and command clarity issues. As a management system, it addresses incidents of any nature or magnitude. It enables professionals from diverse agencies to integrate swiftly into a unified management framework utilizing clear terminology. It optimizes logistical and administrative support for operational personnel by eliminating redundant efforts and ensuring accountability through a structured planning procedure as mentioned in the National Disaster Response Plan (NDRP), 2018. Although Nepal possesses many Disaster Risk Reduction and Management

(DRRM) plans and strategies, it lacks a definitive mandate for the ICS system. The study aims to evaluate the current disaster response efforts and examine the ICS in Nepal during catastrophes. This study examined the condition of the Incident Command in Nepal. This research would be beneficial for policy development and disaster response initiatives in Nepal.

Review of Literature

ICS is an essential structure for managing catastrophe response and coordinating across multiple agencies. Originally created to tackle the complexities of emergency management, ICS has developed into a vital instrument for coordinating and directing resources during events of diverse magnitudes. This literature review seeks to consolidate existing research on ICS, particularly in the USA, Australia, the Philippines, and India, emphasizing its legal framework, components, and advantages. Before that, the fundamental terminology must be understood.

ICS is a standardized framework generally organized into five functional domains: command, operations, planning, logistics, and finance. The system facilitates the integration of individuals, facilities, equipment, procedures, and communications within an organizational framework (Wang et al., 2012). ICS enables users to construct an organizational framework suitable for any scenario, irrespective of jurisdictional limits. The ICS is highly adaptable and can expand or contract to accommodate the evolving requirements of an incident. This renders it pertinent to both minor and major occurrences (Ullah, 2010).

ICS is a standardized methodology for the command, control, and coordination of on-scene incident management, establishing a common hierarchy that enables individuals from many organizations to operate effectively (FEMA, 2014). ICS delineates an organizational framework for incident management that amalgamates and synchronizes various procedures, persons, equipment, facilities, and communication systems. Utilizing ICS for each incident enhances and preserves the skills required for efficient coordination of actions. ICS is utilized by all tiers of government, many Non-Governmental Organizations, and various commercial sector entities. ICS transcends disciplines, facilitating seamless collaboration among incident managers from various organizations (FEMA, 2008).

The complete organization of the ICS framework is extensive. Nevertheless, the complete organization is infrequently executed. The organization can scale up or down based on the current personnel need. In a significant crisis, such as Hurricane Katrina, the entire framework may be activated, but in a minor occurrence, only one, two, or three of

these roles may be occupied. A single individual can assume multiple roles. The commander is consistently the initial position established and the final post deactivated. Typically, an incident commander designates a command staff and general staff (FEMA, 2014).

The risk of disaster arises when hazards converge with pre-existing physical, social, economic, and environmental vulnerabilities. The HFA has functioned as a vital tool for augmenting public and institutional awareness, cultivating political commitment, and directing efforts towards empowering and energizing activities among various stakeholders at all levels. Ten years after the implementation of the HFA, catastrophes continue to hinder sustainable development efforts due to escalating economic losses. International legal frameworks regarding the ICS vary by nation and region. Some nations have specific laws or regulations regarding the application of ICS in disaster management. ICS is mandated by law for emergency response and incident management involving federal agencies in the United States (Rimstad et al., 2014).

During the execution of the Hyogo Framework for Action (2005-2015), a comprehensive, people-centered, multi-hazard, and multi-sector approach was essential for achieving efficient and effective disaster risk reduction. The Sendai Framework for Disaster Risk Reduction (2015-2030) delineated four priorities to rectify the shortcomings of the Hyogo Framework: understanding disaster risk, enhancing disaster risk governance, investing in disaster risk reduction for resilience, and augmenting disaster preparedness for effective response, alongside the principle of Build Back Better (BBB) in recovery, rehabilitation, and reconstruction. Governments and organizations are recognizing the growing number of individuals' affected by natural disasters (United Nations Office for Disaster Risk Reduction [UNDRR], 2015).

Nepal engaged with and supported the objectives and five priorities for action from 2005 to 2015. The primary objectives of the Hyogo Framework for Action (Ministry of Home Affairs [MoHA], 2019) included the integration of disaster risk reduction into sustainable development, the enhancement of institutions to foster resilience against hazards, and the establishment of programs for emergency preparedness, response, and recovery.

The establishment of policy and legislative frameworks on catastrophe matters in Nepal commenced in the early 1980s with the enactment of the Natural Calamity (Relief) Act of 1982. The Constitution of Nepal, 2072 initiated a significant transfer of authority from the federal government to the provincial and local levels. DRRM constitutes one of the 22 distinct competencies presently assigned to devolved agencies for implementation. The DRRM, 2017, recognizes the significance of evidence-based decision-making in

the transition from response-oriented to proactive and preventive strategies. The Local Government Operation Act of 2017 has empowered and required local government to perform several functions for Disaster Risk Reduction (Adhikari & Gautam, 2022).

Schedule 9 of the constitution delineates the DRRM tasks across all three tiers of government: federal, provincial, and local, emphasizing substantial decentralization to facilitate decision-making, resource management, and service delivery systems. The constitutional authority of local governments with disaster management is delineated in Section 8, which pertains to local government jurisdiction (Constitution of Nepal, 2015). Disaster Management is also included in the concurrent list for federal, state, and local jurisdictions. Moreover, prompt readiness for rescue, relief, and rehabilitation from all forms of natural and anthropogenic disasters is included in the concurrent list for federal and state authorities.

Nepal has encountered numerous challenges in its pursuit of fulfilling the principles of SFDRR. Activities that enhance stakeholders' motivation to mitigate catastrophe risk or bolster trust in the strategy, government procedures, and implementing agencies will facilitate the plan's objectives. The government of Nepal has developed a National Strategic Action Plan (NSAP) for Disaster Risk Reduction (2018-2030), prioritizing DRR initiatives in alignment with the four goals of the SFDRR. Nepal has made significant advancements in disaster risk management over the past few decades. A multitude of legal, institutional, and policy frameworks are currently established. The Constitution of Nepal has included regulations for disaster management across all governmental tiers (Wanner, 2022).

This is more thorough and encompasses the intricate dynamics of all stages of catastrophe management. After the 2015 earthquake, Nepal promptly restructured its institutional framework for disaster management. Section 11 of the Disaster Risk Reduction and Management (DRRM) Act 2017 explicitly delineates the functions, responsibilities, and authorities of the National Disaster Risk Reduction and Management Act (NDRRMA), with the concluding point in the section stipulating that it must collaborate with sectoral ministries while executing these activities. The current policies primarily emphasize a broad strategy, such as the institutionalization of DRRM, yet fail to delineate the methods for implementation that would benefit the intended demographic. Nepal has achieved substantial advancements in enhancing its disaster risk reduction and management policies in recent years. Nonetheless, the capabilities of operational authorities and stakeholders must be enhanced before the comprehensive implementation of the DRRM policy framework. Endorsed policies must be modified per feedback from the community level. Despite the DRRM Act 2017 intending to enhance the authority of the NDRRMA, its restricted access

to the cabinet, reliance on the Ministry of Home Affairs (MoHA) for cabinet decisions, constraints in financial decision-making, limitations in controlling security mobilization during humanitarian crises, restrictions in human resource recruitment and mobilization, and deficiencies in decision-making power regarding foreign aid mobilizations pose significant challenges (Bhandari et al., 2020).

At present, there is insufficient cooperation across various tiers of government. A comprehensive Disaster Risk Reduction assessment framework tackles inadequate coordination and organization of several elements. Furthermore, the endorsement of global initiatives aimed at mitigating disaster risks must be systematically incorporated into policies, strategies, and programs for sustainable development. Nonetheless, it may be contended that the ongoing transition from government to governance over the past thirty years has resulted in a polycentric and dispersed array of actors. Given these commendable governance attributes, Nepal can advance in effectively controlling and administering future disasters (Vij et al., 2020). The organizational structure of NDRRMA bears some resemblance to the ICS. Nonetheless, it possesses other elements that impede the efficacy of the Incident Command System. The DRRM Act 2017 mandates the establishment of a national council, executive committee, authority, and incident commander while specifying roles, functions, and accountabilities for disaster management (Bhandari et al., 2020).

The ICS is a standardized framework generally organized into five functional domains: command, operations, planning, logistics, and finance. The system facilitates the integration of persons, facilities, equipment, procedures, and communications within an organizational framework. The system is well-established and has been utilized by companies for an extended period to facilitate the effective management of industrial events (Wang et al., 2012).

The ICS is a prevalent management framework for structuring and managing emergency response operations. It offers a standardized framework and procedural guidelines that enable various authorities and groups to collaborate efficiently during emergencies. This system is essential for controlling and responding to incidents, facilitating a coordinated and organized strategy to safeguard the individuals affected and to mitigate any injury or damage (Hartono et al., 2020).

ICS is primarily a management framework specifically developed to address incidents involving many responders. It facilitates cohesive communication and strategic planning by creating an attainable span of control. An ICS categorizes emergency response into five important functions: command, operations, planning, logistics, and finance and administration. Through the implementation of the ICS, emergency response teams may

coordinate effectively and distribute resources efficiently to reduce the impact and safeguard the community (Homeland Security Department, 2008).

Perry (2003) stated that the incident commander performs seven functions: 1) perform initial situational assessments and ongoing evaluations, 2) initiate, sustain, and regulate communications, 3) identify incident management strategies, formulate action plans, and allocate resources, 4) request more resources, including activation of the Emergency Operation Center, 5) establish an organizational command structure, 6) continuously assess, evaluate, and amend the incident action plan, 7) facilitate the continuation, transfer, and termination of commands.

ICS aims to establish a methodical framework that enhances the organization, speed, and simplicity of incident response. The United States Department of Labor, Occupational Safety and Health Administration (OSHA) website characterizes ICS as "a standardized on-scene incident management framework specifically designed to enable responders to implement an integrated organizational structure commensurate with the complexity and requirements of any singular or multiple incidents, unimpeded by jurisdictional limitations". ICS is a form of incident management system. The ICS encompasses distinct processes and procedures, including a scalable command structure, defined nomenclature, and uniform forms (Krueger, 2017).

Nonetheless, we observe diversity in certain elements. The terminology and organization may differ from nation to nation. Chang (2017) asserted that various countries possess divergent opinions of the ICS due to 1) disagreement concerning the essence of the ICS, 2) the magnitude of disasters, and 3) the execution of the ICS. ICS components primarily consist of five sections: administration, operations, logistics, planning, and safety. Branches are created beneath sections and signify functional tactical domains pertinent to each part (Perry, 2003).

Similarly, Clark-Ginsberg et al. (2023) identified five domains that collectively constitute the essential components of public health incident management. Each component signifies a unique process essential for the management of public health emergencies. The framework was established to serve as a foundation for formulating realistic metrics of event management, potentially enhancing comprehension of incident management in healthcare settings and improving performance and efficacy in addressing real-world incidents.

Research Methodology

The research employs a qualitative design. The researcher utilized both primary and secondary data. Primary data were obtained from Key Informant Interviews (KII), whilst

secondary data were acquired through a comprehensive literature review and content analysis. An in-depth analysis was conducted on the ICS from two industrialized countries and two developing countries where the system has been effectively implemented, focusing on its components, functions, significance, and relevance. The published and unpublished reports, along with scientific articles on catastrophe risk reduction and ICS, were examined and assessed. An analysis of the existing laws, acts, regulations, policies, and assessments, including the Disaster Risk Reduction and Management Act, Disaster Risk Reduction and Management Rules, National Policy for Disaster Risk Reduction, National Disaster Response Framework, and strategies about the response mechanism and provisions related to ICS, was conducted. Comprehensive consultations were conducted with governmental and non-governmental officials in the catastrophe sector to comprehend the current processes.

Five major key informants were chosen for their contributions to the field of disaster management to elucidate the context and prospective developments in the domain of ICS. A semi-structured questionnaire was created for KII key informant interviews. It took about a month to conduct the KIIs. Then, the collected data were subsequently transcribed, coded, and analyzed to discern essential themes regarding the needs, components, and status of the System in Nepal.

Findings and Discussion

Malešič (2020) indicated that the ICS is executed in Norway, Japan, New Zealand, France, China, and Taiwan. Nonetheless, the term has been adaptable and altered. ICS has been implemented in numerous countries (Chang, 2017). This study analyzed ICS in the USA, Australia, India, and the Philippines. In Australia, it is known as the Australian Inter-agencies Incident Management System [AIIMS], 2017); in India, it is referred to as the Incident Response System (Government of India, 2010); and in the Philippines, it is designated as the Incident Management Team (Department of National Defense, 2018).

USA

In 1983, FEMA incorporated the ICS into its curriculum at the National Fire Academy in the United States. The ICS, originally utilized by the fire department, progressively extended to encompass numerous non-fire agencies. In the wake of the insufficient international reaction to the 1985 Mexico City earthquake, the U.S. Department of State investigated the implementation of the ICS for subsequent disaster response and international relief initiatives.

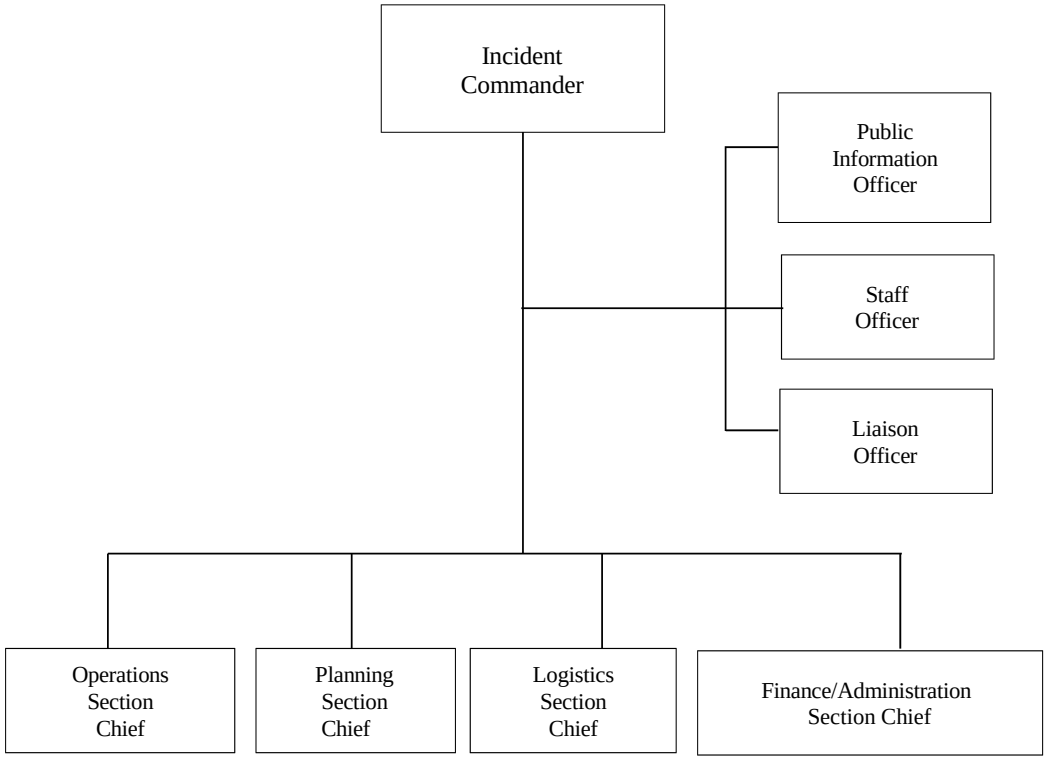
The National Incident Management System (NIMS), extensively utilized across the United States, integrates optimal management methods from the commercial, military, and

public safety domains. It underscores the necessity for the explicit delineation of roles and duties, particularly those not conventionally included in standard job descriptions, to be established during emergencies. NIMS empowers workers based on their experience and competence rather than solely on hierarchical status.

Moreover, most US states have adopted the ICS as the standard protocol for addressing various disasters, and federal legislation in the US presently requires its use for managing incidents involving hazardous substances. The ICS is considered a best practice for emergency and disaster management since its implementation in the United States (Miranda, 2020). Positions within the ICS are assigned based on situational evaluations and the presence of qualified candidates, each designated with standardized titles, responsibilities, and reporting structures. Effective command people receive preliminary training, engage in strategic planning exercises, and consistently participate in reactions to ensure preparedness (Brice et al., 2015).

Figure 1

Incident Command Structure of USA



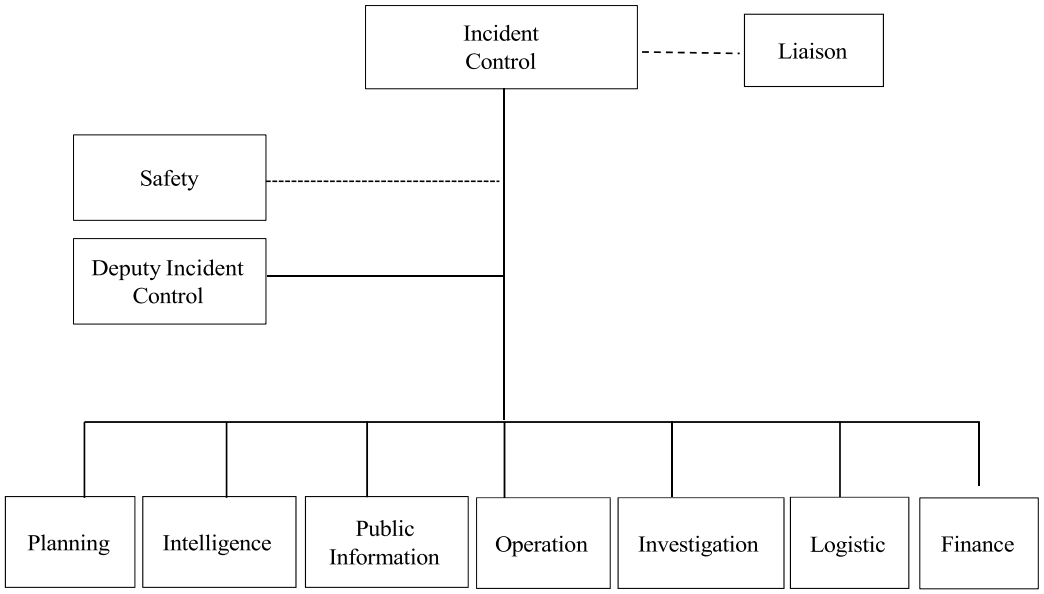
Source: Federal Emergency Management Agency (2014)

Australia

Australia established the Australasian Inter-Service Incident Management System (AIIMS) in the 1980s, utilizing the U.S. National Incident Management System (NIMS) as a reference and significantly incorporating the ICS as its basis. The framework enhances incident management efficiency by clearly delineating roles and duties (Figure 2). The Australian government in modifying the system, utilized distinctive nomenclature such as "Incident Controller" instead of "Incident Commander" and amalgamated the functions of safety advisor rather than appointing a separate safety officer. Furthermore, the intelligence and investigative department has been expanded. These modifications guarantee that AIIMS stays flexible and efficient in addressing Australia's changing emergency management requirements (AIIMS, 2004).

Figure 2

Australian Inter-service Incident Management Structure



Source: Australian Fire and Emergency Services Authorities (2017)

AIIMS was originally designed as a holistic instrument for treating diverse emergencies, as detailed in its third version from April 2004. Implementation commenced in the early 1990s, predominantly by fire and land management organizations. Although AIIMS originally served particular industries, its advantages as a comprehensive model for all emergency response agencies have gained greater acknowledgment. This transition is evident in Australian legislation, governmental directives, and disaster and emergency

management strategies, which increasingly prioritize coordinated responses among all public safety authorities. This evolution highlights the significance of standardized incident management protocols and efficient communication among various emergency response organizations in (Australian Fire and Emergency Services Authorities [AFAC], 2017).

The Australian Government Disaster Response Plan employs the AIIMS as its operational foundation. AIIMS, established in Australia in the 1980s, was influenced by the American National Interagency Incident Management System. Since its establishment, AIIMS has played a crucial role in overseeing increasingly frequent and intricate multi-agency operations that cross state boundaries. AIIMS is designed to efficiently manage a diverse range of crises, encompassing natural catastrophes, industrial accidents, and civic emergencies. It functions as a multifaceted framework relevant to diverse emergency management situations by offering a cohesive strategy for organizations engaged in disaster response efforts. The most recent iteration of AIIMS 2017 received an endorsement from the National Council for Fire and Emergency Services in Australia and New Zealand in 2017. It underscores management by objectives and a functional framework, hence improving coordination across fire emergency services and government sectors (AFAC, 2017).

India

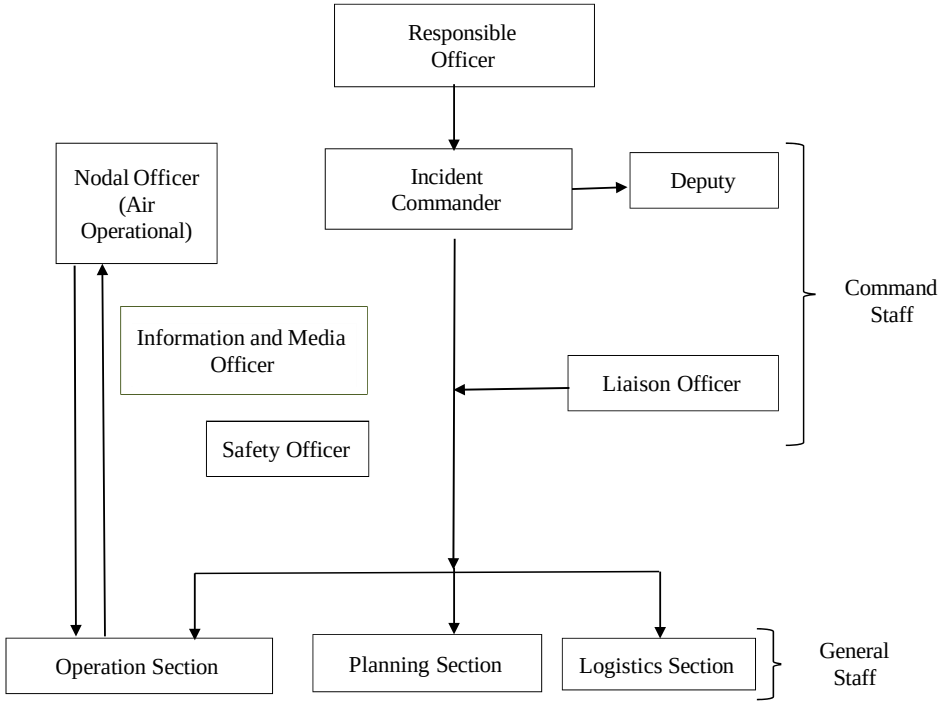
India's engagement in disaster management began with the establishment of a High-Powered Committee (HPC) by the Government of India from 1999 to 2001. The committee's mandate was to analyze disaster management strategies from other countries, identify relevant issues, and provide solutions. The HPC's conclusions prompted further strategic measures to enhance India's disaster preparedness and response capabilities. The implementation of the ICS established a standardized, multi-tiered, comprehensive method for managing on-site incidents. The Disaster Management Act 2005 created a legal framework for the unification of all stakeholders, and the establishment of a National Disaster Management Policy 2009 facilitated effective collaboration. India established an extensive legal framework with central, state, and district-level institutions, along with a system for coordinating various agencies and tiers (Ullah, 2008). The National Disaster Management Authority (NDMA) has promulgated the Guidelines on the Incident Response System (IRS), according to Section 6 of the DM Act, 2005, to provide effective, efficient, and comprehensive disaster management in India. The objective is to reduce casualties and property damage by enhancing and standardizing the national disaster response framework (The Asia Foundation, 2022).

In 2003, the Indian government implemented an incident command system in partnership with USAID. It has established the ICS as an IRS. The IRS anticipates a

multifaceted team comprising many divisions to address all potential response needs. The IRS appoints officials to execute specific jobs and provides training for their roles, thereby mitigating chaos and confusion during the reaction phase. The IRS is a flexible system, and not all sections, branches, and units need to be active simultaneously. They should be engaged solely when necessary. The IRS operates through the Incident Response Team (IRT) in the field. Responsible officers (RO) are appointed at the state and district levels to oversee incident response management. The RO allocates responsibility to the Incident Commanders, who will subsequently handle the incident through the IRTs. The IRS is a needs-based, adaptable institution. Not all components must be active concurrently. Only the parts, branches, and units necessary for the specific calamity should be enabled. Every activated section, branch, or unit must designate an individual responsible for executing its function. In certain instances, due to insufficient manpower, a single supervisor may be assigned responsibility for many groups, units, or sections. Obsolete organizational parts should be decommissioned to minimize organizational size and guarantee optimal resource utilization (Government of India, 2010).

Figure 3

Organization of Incident Response System of India



Source: Government of India (2010)

Philippines

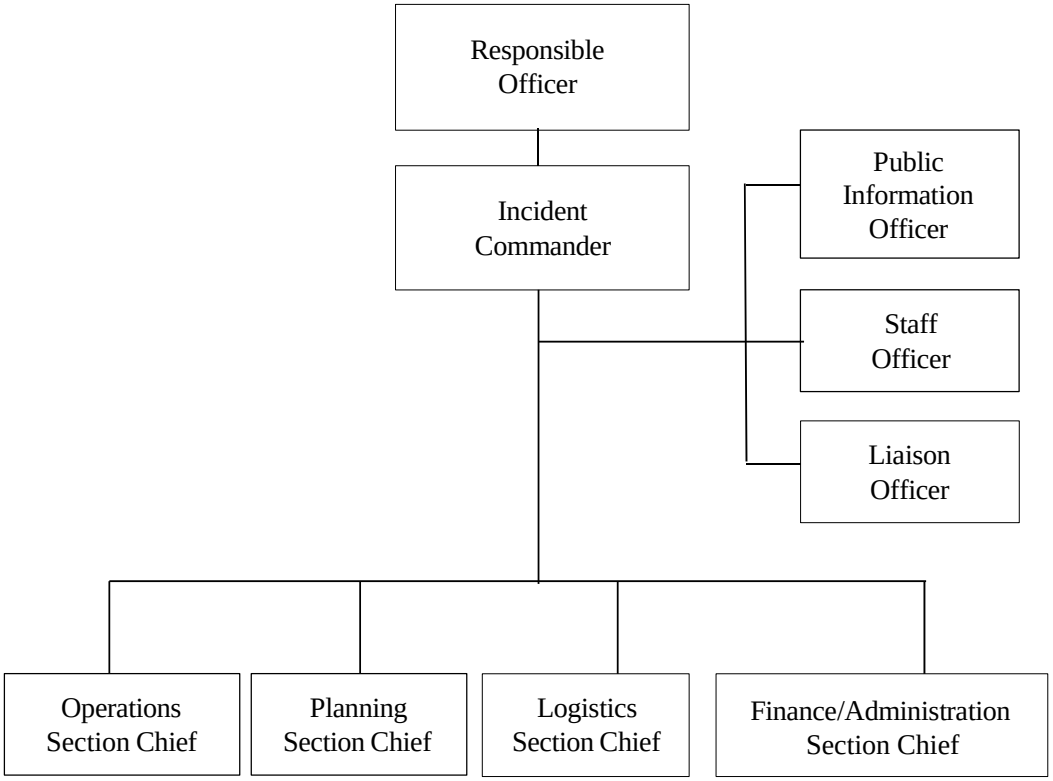
ICS was presented to the Philippines at the inaugural ASEAN Committee on Disaster Management Meeting (ACDM) in Brunei Darussalam in 2003. During that period, ACDM officially endorsed the ASEAN-US Cooperation on Disaster Management Program, emphasizing the enhancement of ICS capabilities for ASEAN member states. The ICS established a framework for an effective model for on-scene disaster response and management, facilitating coordinated emergency response and interoperability among ASEAN member states. In 2010, it was officially incorporated as the framework to promote interoperability among ASEAN member states during catastrophes via the ASEAN Agreement on Disaster Management and Emergency Response (AADMER). Subsequently, it was authorized to establish standard operating procedures for regional collaboration and national initiatives (Department of National Defense, 2018).

The Philippine government incorporated the Philippines Disaster Risk Reduction and Management System with the ICS for disaster response as an on-site incident management framework. The Philippines established and formalized the ICS to avert a "disaster in a disaster" when the overwhelming number of responding entities creates significant operational difficulties, as illustrated in Figure 4. The Philippine Disaster Risk Reduction and Management Act of 2010 was enacted to enhance the country's disaster risk reduction and management system, framework, funding, and strategic planning. A paradigm shift transpired in governance and collaboration, transitioning from a reactive to a proactive methodology, from catastrophe coordination to risk mitigation and disaster management. Office of Civil Defense is required by section 9(g) of the law to establish standard operating procedures for the deployment of rapid assessment teams, facilitate information interchange across government agencies, and ensure collaboration at all levels before, during, and after disasters. Rule 7(h) of the implementing rules and regulations supported the OCD's decision to build ICS as part of the Philippines' on-scene disaster response system to ensure effective management of disaster or emergency consequences (Miranda, 2020).

Ohara and Sawano (2015) demonstrate that the ICS has been implemented across all tiers of government, including national, regional, provincial, municipal, and barangay, which is the lowest administrative unit in the country. Every tier of local government has integrated the ICS into its contingency plan. An Incident Management Team (IMT) is formed to coordinate the reaction to a disaster (Department of National Defense, 2018).

Figure 4

Basic Organization of Incident Management Team



Source: NDRP for Earthquake and Tsunami (2018)

Status of Incident Command System in Nepal

The status of ICS in Nepal is rather uncertain. The phrase is utilized in the medical domain by the Ministry of Health and Population-Hospital Emergency Operation Center (MoHP-HEOC) 2021, while other statutes, regulations, and frameworks remain unaddressed. The National Disaster Response Framework (NDRF) 2019 has established a disaster response framework; nonetheless, its implementation is notably deficient at the operational level. Section 11 of the DRRM Act, 2017 explicitly delineates the functions, responsibilities, and authorities of the NDRRMA in coordination with sectoral ministries. It encompasses a stipulation for a Disaster Response Controller for the ICS. The National Policy on Disaster Risk Reduction (NPDRR) 2018 signifies a prospective intention to expand and execute ICS. This indicates that although ICS is acknowledged in crisis management, its application across different industries is still restricted and primarily anticipatory. The diverse elements of the ICS are dispersed among multiple acts and frameworks, as demonstrated in Table 1.

Table 1

Legal Provision Regarding the Status of Incident Command System

SN	Legal Provision	Status of ICS	Remarks
1	DRRM Act 2017	No	Provision of disaster response controller
2	DRRM Rule 2017	No	
3	NPDRR 2018	No	Point no. 7.44 ICS will be extended and implemented
4	NDRF 2019	No	
5	MoHP-HEOC Network of Nepal: The voyage and the vista	Yes	Health-related hazard

Source: Adapted and modified from MoHA (2017), (2018a), (2018b), (2019) and MoHP (2021)

Table 1 indicates that the ICS has not been extensively adopted within Nepal's key legal and policy frameworks for disaster management. NPDRR (2018) recognizes ICS and outlines objectives for its future implementation; nonetheless, its current utilization is constrained. The health sector, via the MoHP-HEOC Network, is the sole domain where ICS is presently implemented. ICS must be widely implemented across all sectors for enhanced catastrophe response and management. Consequently, the comprehensive research indicates that the legal framework for ICS is deficient.

The feedback from key informants indicates that the implementation of ICS is inconsistent and fragmented, as illustrated in Table 2. Certain features like to ICS may be included (Informant I), and there is a partial implementation that is not incorporated into the official command structure (Informant II). Nonetheless, two interviewees (III and IV) assert that ICS is absent. This indicates a necessity for more systematic and structured initiatives to thoroughly adopt ICS within the pertinent frameworks and command structures in Nepal. KII (II) partially concurred with the lack of ICS. Nonetheless, he also underscored the enhancement of the ICS system. The remaining two important informants were also unconvinced of the existence of ICS in Nepal. The MoHP-HEOC Network has implemented the ICS for health-related emergencies, demonstrating an effective and distinct integration of ICS concepts within the health sector.

Table 2

Response of Key Informants in Status of Incident Command System (Interview)

SN	Key Informants	Status of ICS	Remarks
1	I	Partial	Somehow similar but not organized
2	II	Partial	Not in the chain of command
3	III	Yes	Limited effectiveness
4	IV	No	-
5	V	No	(Still on discussion)

Source: Field work (2024)

One of the Key Informants, KII (I), specified that

> *NDRF has given the framework which is similar to the ICS and NDRRMA has been established comprising a similar structure including planning and finance but they are not functional. Hence, I can say there is not a complete ICS system.*

Another Key Informant, KII (II), said

> *ICS has been identified as one of the key activities. Act has identified CE as the incident commander. There is a very limited understanding of it. Many neighboring countries have used ICS. In Forest fires, ICS has been used. Yet to be established. Preliminary task has been done.*

In a nutshell, the key informants are also not fully convinced about the complete implementation of ICS; however, they all focused on the urgent need for an ICS system in Nepal.

Structure of Incident Command System in Nepal

There is a significant necessity for effective coordination, information dissemination, and resource management during disaster response; participants suggested the institutionalization of ICS as a potential answer. Multiple stakeholders must collaborate cohesively to build an ICS as a standardized response framework, hence enhancing cooperation.

The ICS frameworks in India, the Philippines, and Australia exhibit parallels, notably in their omission of the finance component, which distinguishes them from the more extensive system utilized in the USA. This suggests a potential emphasis on operational

efficiency and inter-agency cooperation in India, Bangladesh, and Australia, whereas the USA incorporates financial management as an essential element of its incident response system (Table 3). India utilizes an IRS encompassing all components except finance, under the DM Act of 2005. The Philippines' CIS includes all elements as outlined in NDRRMC Memo 4 (2012). The National Incident Management System of the USA consolidates all elements as per FEMA 2003. AIIMS encompasses all components, with an added emphasis on intelligence and investigation, as delineated in AIIMS Version 17.

Table 3

Incident Command System Components in Different Countries

SN	Country	Form of ICS	Components of ICS				
			Operational	Logistic	Planning	Finance	Command
1	India	Incident Response System	Yes	Yes	Yes	No	Yes
2	Philippines	Incident Command System	Yes	Yes	Yes	Yes	Yes
3	USA	National Incident Management System	Yes	Yes	Yes	Yes	Yes
4	Australia	Australian Inter- Service Incident Management System (AIIMS)	Yes	Yes	Yes	Yes	Yes

Source: Adapted and modified from GoI (2005), NDRRMC (2012), FEMA (2003) and AFAC (2017)

The uniform application of operational, logistic, planning, and command elements across these nations highlights the essential features of ICS, however, the disparate integration of Finance indicates diverse national objectives. Nepal, intending to expand and apply ICS more extensively as outlined in the National Policy on Disaster Risk Reduction 2018, should utilize the comprehensive models from the Philippines and the USA as appropriate benchmarks. These models underscore the necessity of integrating all ICS components to establish a resilient and coordinated catastrophe management system. Following the analysis of ICS from India, the Philippines, the USA, and Australia, a proposal for implementing an Incident Command System in Nepal can be made.

Nonetheless, there remain overlaps in mandates that induce uncertainty, and coordination among the three security agencies and between governmental and nongovernmental organizations is significantly deficient (Government of Nepal, 2022).

The Disaster Risk Reduction and Management Act 2017 designates the NDRRMA as the principal disaster response agency. The National Emergency Operation Center (NEOC), while aligned with the NDRRMA, primarily receives directives from the disaster management division of the Ministry of Home Affairs. This indicates a preexisting disconnection between the NDRRMA and the Emergency Operation Center system at the highest level. There exists a disconnect in the chain of command among the NEOC, Provincial Emergency Operation Centers (PEOCs), Local Emergency Operation Centers (LEOCs), and District Emergency Operation Centers (DEOCs). This discrepancy arises because NEOC and DEOCs operate under the NDRRMA, while PEOCs are governed by Provincial Governments and LEOCs by the Palikas. Consequently, LEOCs do not adhere to the directives issued by NEOC and DEOC. Likewise, PEOCs do not promptly adhere to the directives issued by the NEOC. In principle, the EOC offices are expected to adhere to a singular line of command; however, this is not the reality. Ambiguities persist in the chain of command and communication flow, while information management remains deficient (GoN, 2022).

Table 4

Provision of the Various Components of Incident Command System

Components	Provision	Provision
Commander	The Chief Executive shall function as the disaster response controller in time of disaster.	Article 12 (7)
Operation	NDRRMA	Article 10
	PDMC	Article 14
	DDMC	Article 16
	LDMC	Article 17
Logistic	Disaster and Conflict Management Division	Under the Ministry of Home Affairs
Finance	Disaster Management Fund	Article 22 and Article 23

Source: MoHA (2019)

KII (I) indicated that existing ICS systems require enhancement. The tables indicate that the ICS element is functioning effectively; nonetheless, FEMA has noted a deficiency in the structural integrity of the incident command system in the context of Nepal. Likewise, KII (II) concentrated on the localization of the current framework within ICS.

> *The ICS requires localization. In traffic situations, the traffic police serve as the commanding authority. It ought to be predicated on magnitude and intensity. Large-*

scale catastrophes necessitate the involvement of substantial institutions. Situated and institutionalized. It should now be trained throughout all sectors, including staff colleges, security forces, and new bureaucrats. The NDRF is performing the functions of the ICS. Research remains to be conducted.

The other key informant interviews likewise suggest the absence of an ICS; nevertheless, some limited implementation has been observed. The elements of the ICS are distributed across different agencies. Various sectors are involved. The legal documents must specify the method for coordination with the ministry by the chief executive of NDRRMA. Furthermore, Article 12 of the DRRM Act 2074 designates the Chief Executive as the disaster response controller, so assigning responsibility for disaster management. However, the absence of a definitive structure hindered the Incident Commander's ability to respond effectively to the crisis. ICS undoubtedly plays a crucial part in effective disaster response. The components of the ICS should be consolidated under NDRRMA, with the cooperation and involvement of all stakeholders.

Consequently, in Nepal, the ICS is presently undergoing development and partial implementation, exhibiting disparate levels of adoption across various industries and regulatory frameworks. The execution of ICS in Nepal seems to be irregular and deficient.

Other key informant interviews similarly suggest the absence of an ICS; nonetheless, some limited adoption has been observed. The elements of the ICS are distributed across different agencies. Various sectors are involved. The legal documents must specify the method for coordination with the ministry by the chief executive of NDRRMA. Furthermore, Article 12 of the DRRM Act 2074 designates the Chief Executive as the disaster response controller, assigning responsibility for disaster management. Nevertheless, the absence of a definitive framework hindered the incident commander’s ability to respond effectively to the crisis.

Conclusion

Nepal lacks a unified ICS system, with its components scattered across various agencies, highlighting the urgent need for integration under NDRRMA to ensure a well-coordinated and effective disaster response. While some legal frameworks and policies hint at the future incorporation of ICS, and there is a specific adoption within the health sector, a comprehensive and organized implementation of ICS across all sectors is lacking in the field of disaster. The KII indicates a fragmented approach to disaster management, which

could hamper the efficiency and effectiveness of Nepal's disaster response and coordination efforts. By establishing a standardized system for managing resources, ICS could facilitate the efficient allocation and deployment of personnel, equipment, and supplies during emergencies, optimizing the utilization of available resources. ICS provides a hierarchical structure with clearly defined roles and responsibilities, ensuring that decision-making and information flow are streamlined, reducing confusion and improving the overall effectiveness of disaster response operations. Also, there is a need for further study in the structure of ICS that aligns with the disaster federalism in Nepal. Thus, for a safe, coordinated, and effective response, the ICS ensures a clear role and swift action in the context of Nepal.

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