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Case Essay

Inter-agency collaboration for fire disaster management in Nairobi City



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ABSTRACT

The County Government of Nairobi faces a myriad of capacity challenges that have impeded fire disaster management in the City. This is further compounded by the lack of a comprehensive legal and institutional framework for disaster management in Kenya. Whereas the County Government enlists assistance from other public, private and civil society organizations, the approach employed is skewed towards interagency coordination rather than a collaborative approach. This paper looks at the concept of collaboration and its overall application in disaster management. It gives an overview of the Kenyan situation in relation to fire disaster management in Nairobi. The paper indicates that the County Government the County government has no framework for inter-agency collaboration thus fire disaster operations involve coordination of the different agencies by either the County government or the National Disaster Operations Centre. This means that the interaction between the agencies involved is one in which formal linkages are mobilized because some assistance is required for fire disaster response rather than a joint decision making approach where power is shared and all agencies take collective responsibility. The paper concludes that given the County government's inadequate capacity for fire disaster management, there is need to embrace inter-agency collaboration to enhance fire disaster management in the city. It thus recommends the formulation and adoption of a fire disaster management policy; formulation and implementation of fire disaster management legislation; fostering partnerships with the private sector through Public-Private Partnerships (PPPs); and the development of an interagency fire management program/ plan, as suggestions to augment inter-agency collaboration for fire disaster management.

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1. Introduction

Disaster management in urban areas is particularly complex owing to urbanization and its associated impacts which often increase the exposure of people and economic assets to hazards and create new patterns of risks. Fire disasters in particular are a common occurrence in cities across the world. Dynes and Russel (2002) attribute the increasing risk of fire occurrences to increased development interactions in cities.

In Kenya, fires have contributed to the toll of man-made disasters with varying loss of property and life. Nairobi city in particular, has experienced its share of fires over the years leading to loss of hundreds of lives and damage to properties worth billions of Kenya shillings. Notable city fires which have occurred over the last decade include; 2009 Nakumatt down town fire, 2011 Sinai fire 2012 Kimathi House fire, 2013 Jomo Kenyatta International Airport fire and Westgate mall terror related fire,

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among other numerous slum fires across the city. Most of these fire disasters called for joint efforts between the County government, National government and Non-Governmental Organizations (NGOs) during response and recovery efforts.

Interagency collaboration is crucial to fire disaster management given that fire disasters require the activation of the fire service, police, emergency medical services and other relevant agencies. The coordination of interagency operations can become more complicated during large scale situations such as terror attacks (NEC Corporation, 2014). This therefore requires an understanding of agencies' organizational structures and their roles in fire management. This understanding, coordination, and cooperation will enhance efficiency across jurisdictional boundaries (National Interagency Fire Centre, 2005).

This paper examines the concept of collaboration and its application in disaster management. It gives an overview of the current situation of interagency disaster management in Kenya with a view of suggests possible solutions to implement inter-agency collaboration for fire disaster management in Nairobi City.

2. Concept of collaboration

An increasing number of organizations are coming together to address complex societal issues. Most intentional, interorganizational strategic alliances, articulate the collaborative effort as the primary method for achieving ideal short and/or long-term goals that would not otherwise be attainable as entities working independently (Gadja, 2004). Gadja however notes that, "collaboration" is a hard term to grasp. Although it has the capacity to empower and connect fragmented systems for the purposes of addressing multifaceted social concerns, its definition is somewhat elusive, inconsistent, and theoretical. She states that the term "collaboration" has become a catchall to signify just about any type of inter-organizational or interpersonal relationship, making it difficult for those seeking to collaborate to put into practice or evaluate with certainty.

McNamara (2012) agrees that collaboration is often used synonymously to cooperation or coordination; she notes; there is a tendency to categorize broadly interaction terms with little regard for the definitions that distinguish them from other types of interactions. In fact some theorists describe cooperation, coordination, and collaboration as falling along a continuum of increased interaction. McNamara, based on Keast, Brown, and Mandell, (2007); Mattessich, Murray-Close, and Monsey (2001) notes that at one end of the continuum, cooperation is defined as an interaction between participants with capabilities to accomplish organizational goals but choose to work together, within existing structures and policies, to serve individual interests. She further states that coordination is placed in the middle of the continuum and based on Jennings (1994); Keast et al. (2007); Mattessich et al. (2001) is defined as an interaction between participants in which formal linkages are mobilized because some assistance from others is needed to achieve organizational goals. At the other end of the continuum, McNamara notes that collaboration is defined based on Gray (1989) as an interaction between participants who work together to pursue complex goals based on shared interests and a collective responsibility for interconnected tasks which cannot be accomplished individually.

Selin and Chavez (1995) adopt Gray's (1985) conceptual definition of collaboration, which is "the pooling of appreciations and/or tangible resources e.g. information, money, labor, etc., by two or more stakeholders to solve a set of problems which neither can solve individually." Collaboration implies a joint decision making approach to problem resolution where power is shared and stakeholders take collective responsibility for their actions and subsequent outcomes of their actions.

Kamensky and Burlin (2004) state that collaboration occurs when people from different organizations produce something together through joint effort, resources, and decision-making, and share ownership of the final product or service. It consists of the following elements: a common purpose, separate professional contributions, and a process of cooperative joint thinking and communication (Morton, Taras, & Reznik, 2010). It is worth noting that the scope and nature of collaborations, however, varies in accordance with the needs and goals of collaborating parties (Kapucu & Garayev, 2011).

From the aforementioned it is clear that collaboration differs from cooperation and coordination in that it "requires much closer relationships, connections, and resources and even a blurring of the boundaries between organizations" (Keast, Brown, & Mandell, 2007).

Mayer and Kenter (2015) identify nine key components of collaboration; these include communication, consensus decision-making, diverse stakeholders, goals, leadership, shared resources, shared vision, social capital, and trust. Table 1 presents the summary definitions of the nine components.

Mayer and Kenter (2015) however note that these components are not meant to be exhaustive or mutually exclusive; in fact, many of them are mutually reinforcing, often contingent upon, or building on, one trait or another. McNamara (2012) on the other hand describes the elements of collaboration as outlined in Table 2.

From Tables 1 and 2, it is clear that the components of collaboration are in many ways similar across the board with key components being information sharing, power sharing within formal and informal structures, participative decision making, shared resources, shared goals and trust.

Jamal and Getz (1995) based on Gray (1985) corroborate the aforementioned by outlining five key characteristics of the collaboration process: the stakeholders are independent; solutions emerge by dealing constructively with differences; joint ownership of decisions is involved; the stakeholders assume collective responsibility for the ongoing direction of the domain; and collaboration is an emergent process, where collaborative initiatives can be understood as "emergent organizational arrangements through which organizations collectively cope with the with the growing complexity of their environments."

Table 1Definition of key components of collaboration. *Source*: Mayer and Kenter (2015).

Component	Description	
Communication	1. Frequent and open lines of communication help to promote healthy dialog, information-sharing, and increased social capital	
Consensus Decision-Making	1	
Diverse Stakeholders	1. Must be actively sought and can be integral to effective decision-making. Diverse stakeholders bring a variety of intellectual and tangible resources to a collaborative process	
Goals	1. Must be clearly articulated and attainable to provide an effective evaluative criterion. Also must balance individual and group goals to ensure an effective working environment5	
Leadership	1. Often shared, within both formal and informal structures. Strong leadership adds legitimacy and credibility to a collaborative process	
Shared Resources	1. The pooling of resources is one of the primary reasons people agree to collaborate. Shared resources lead to the creation of something greater than any one individual could produce on their own	
Shared Vision	 Can be the initial bond that brings stakeholders together. Shared vision leads to greater buy-in, fit, and incentive for stakeholders to work together for the greater good. 	
Social Capital	1. Critical in advancing collaboration beyond the formative stages. Social capital eases the process and has the ability to grow networks to increase organizational problem-solving.	
Trust	1. Based on mutual understanding and developed through significant dialog, trust is critical to bringing in stakeholders to share resources	

Table 2 Elements of collaboration. *Source*: McNamara (2012).

Elements	Description	
Design	1. Shared power arrangements	
Formality of the Agreement	1. Informal and formal agreements	
Organizational Autonomy	1. Not autonomous; policies to govern the collective arrangement are developed jointly by participants	
Key Personnel	1. Implementation of the partnership is based on the participants; a convener may help bring participants together	
Information Sharing	1. Open and frequent communications through formal and informal channels	
Decision Making	1. Participative decision making	
Resolution of Turf Issues	1. Participants work together to resolve conflicts	
Resource Allocation	1. Physical and non-physical resources are pooled in support of collective goals	
Systems Thinking	1. System integration does occur to better achieve collective goals	
Trust	1. Trust between participants is needed to sustain relationships	

3. Interagency collaboration in fire disaster management

The increase of frequency and scope of natural and human-made disasters during last decades made it clear that traditional emergency, crisis, and disaster management tools have proved to be ineffective. In this regard, traditional approaches characterized by hierarchy and centralization have been replaced by decentralized emergency management systems. This change was especially fostered by the need to collaborate during response to and recovery from extreme events and catastrophic disasters (Kapucu & Garayev, 2011).

Disaster management is one of the fields that has addressed collaborations and partnerships over the years. In response to catastrophic disasters, organizations realized that the response and recovery task, if it was to be performed fast enough to prevent further disaster from occurring, lay well beyond their capabilities as individual organizations and require a collective action among public, private, and non-profit actors (ibid). Indeed, Eide et al. (2013) note that a key factor in the successful handling of large-scale emergencies is the effective collaboration between emergency agencies and non-governmental organizations. However, how successfully agencies deal with disasters depends on their abilities to adequately and effectively collaborate during the different phases of emergency management (Samba, 2010).

With regard to fire disasters, interagency collaboration is vital to the full realization of fire management program objectives (Leonard, 1995). The ability of a single agency to implement a fire disaster management program of any complexity is thus limited without coordination and assistance from other organizations. Within a collaborative framework, National Interagency Fire Centre (NIFC) (2005) notes that successful implementation of any fire management program is dependent on good cooperation and coordination of shared resources and common activities with and between all organizational levels.

It is worth noting that building capacity for interagency collaboration requires that participating agency leaders remain steadfast in the process without giving in to personal preferences (Kapucu, Arslan, & Collins, 2010). This calls for a clear understanding of the roles each agency has, at each organizational level, in order to maximize the benefits of interagency collaboration and assure the fulfillment of agency responsibilities in fire disaster management (NIFC, 2005).

Kapucu, Arslan, and Collins (2010) however state that the use of collaborative efforts such as networks and partnerships are

complex and difficult to manage because they each have organizational restraints and are limited by their commitment to the effort. Whilst collaboration within and between emergency response agencies is essential, it is unfortunately difficult, because of not only the complexity of the incident, but the diverse composition of people and agencies working together, all of whom possess different skills, procedures, knowledge, and competencies (Eide, Haugstveit, Halvorsrud, Skjetne, & Stiso, 2012). The key challenges of multi-agency collaboration can be categorized into three: efficient communication across emergency agencies; establishing and maintaining shared situational awareness; and achieving adequate organizational understanding (Eide et al., 2012). As a result, almost without exception, reports and reflections after disasters express concerns over the emergency agencies' abilities to collaborate (Eide et al., 2012).

4. Kenyan policy context

The fourth schedule of the Constitution of Republic of Kenya (2010) outlines disaster management as a concurrent function for which both levels of government have roles to play. The schedule also expressly states that fire fighting services is a mandate of county government. Despite this definition of roles, implementation of mandates given is largely hampered by lack of a comprehensive legislative and institutional framework for disaster management. Nabutola (2013) notes, in the absence of a clear policy framework, disaster management lacks a definite planning structure or approach. This is reflected both in the lack of legislation and in the setting of priorities in government expenditure allocations. This is further emphasized by the IFRC (2012a) which notes that in Kenya, the legislative and institutional framework on Disaster Risk Reduction (DRR) is fragmented, uncoordinated and many of the institutional mandates overlap.

It should however be noted that a draft National Disaster Management Policy (NDMP) exists. This has however not been finalized and it still needs revision to reflect the requirements of the Constitution of Kenya 2010 (Nabutola, 2013). Aside from the National Policy on Disaster Management and the National Disaster Response Plan, there is no single or series of laws or regulations pertaining specifically to disaster management, but rather a series of sectoral Acts, Regulations and Rules that support disaster management (IFRC, 2012b).

The central purpose of the draft NDMP is to institutionalize disaster management in Kenya and mainstream disaster risk reduction in the country's development effort in a coordinated manner. It provides for the institutional architecture, roles, responsibilities, authorities and key processes required to achieve a coordinated, coherent and consistent approach. One of the key policy approaches the draft policy is based on is the development of a cooperative approach to disaster management through collaboration with all stakeholders. In fact one of the guiding principles to be observed in the implementation of disaster management initiatives is the primacy of coordination, collaboration and communication (Republic of Kenya, 2009).

The draft NDMP however places emphasis on coordination and communication at all levels amongst stakeholders by providing overarching frameworks for decision making and coordination across sectors and actors, (government ministries, civil society organizations, international organizations and the private sector) as opposed to collaboration. A large element of disaster coordination is however administrative, ad hoc and based on the good will and discretion of officials (IFRC, 2014).

The draft policy adopts an "all hazards" approach meaning that coordination mechanisms established under the policy seek to be relevant to all hazards and different disaster scenarios that may affect Kenya. The institutions are required to be designed to offer a level of flexibility depending on the type of disaster occurring. In addition, it adopts a "subsidiarity" approach with disasters being handled first and foremost by the communities affected and local institutions present at the community level. When a disaster's response needs exceed the capacity of local communities, the next level of administration assumes response roles. As such, response needs are delegated to the "least centralized level that has the capacity to respond to needs" (IFRC, 2014). Given the foregoing, it can be assumed that the same applies to fire disaster management.

5. The Nairobi City policy and practice

The County Government of Nairobi, being a primary disaster management institution in Nairobi City, plays a central role in fire disaster management. In this regard it should have an institutional and legislative framework; by-laws and building code and zoning regulations to govern disaster management in the city (UN/ISDR, 2007). According to Menya (2016), the County government lacks a fire disaster management policy to provide for institutionalization of fire disaster management. Additionally, the county government does not have any fire disaster management legislation. However, there exist fire safety by-laws, adopted from the defunct City Council; these only guide enforcement of fire safety regulations in the city. In the absence of a comprehensive fire disaster management framework, fire disasters have been handled in an ad hoc manner as manifested by delayed and uncoordinated disaster response and poor disaster scene management.

In a bid to provide an institutional and legal framework for fire disaster management, the County government is in the process of enacting the Nairobi City County Fire and Rescue Services Bill, 2015. The bill provides for the establishment of a Fire and Rescue Services Authority (FRSA) whose functions include: promotion of fire safety, advise on fire prevention; investigation of fire disasters; public sensitization on fire safety; secure provision of adequate personnel, services and equipment for fire services; secure provision of training of personnel; fire suppression; provide rescue services in the event of fire or any other accident or incident; provide humanitarian services, and development of and maintenance of statistical records relating to fire protection services (County Government of Nairobi, 2015).

The bill gives provision for interagency collaboration for fire service provision. It stipulates that the County Fire and Rescue Service Authority can enter into arrangements with other relevant stakeholders for the purpose of discharging its functions efficiently and effectively. In this regard, the FRSA shall formulate contingent and operational procedures for the handling of fire disasters. It may be assumed that the formulation of contingency plans and operational procedures will foster collaboration through clearly outlining the terms of engagement and the roles and responsibilities of each agency involved as well as Standard Operating Procedures (SOPs) for interagency collaborative efforts.

Col (2007) notes that even though all levels of government are generally involved in disaster management, the role and actions of local government are particularly critical. This can be attributed to the fact that local authorities frequently deal with the impacts of small and medium scale disasters and less frequently with large-scale events that arise from natural or man-made hazards. In most instances, local governments are the first line of response during disasters (UN/ISDR, 2012). Their disaster management abilities therefore affect the course of the initial response to a disaster (Fukasawa, 2002).

The Constitution of Kenya 2010, states that fire fighting is a mandate of County governments. The County Government of Nairobi is therefore required to play a leading role in provision of fire services. However, the manner in which it has handled these events – through its fire brigade – has exhibited the existence of major institutional and policy gaps as well as capacity deficiencies. In most cases, response to fire occurrences and indeed other high-risk events such as bombings, collapsed buildings, floods, and other major accidents tends to be slow, poorly co-ordinated and unnecessarily expensive (IRIN, 2010).

This has been attributed to basic institutional and rescue capacity, lack of equipment and emergency services needed in the event of a disaster, inadequate financial resources and lack of a comprehensive disaster preparedness policy (IRIN, 2010). Nabutola (2004) notes that the city's fire brigade has a poorly equipped fire station; additionally, its management and staff are not motivated and are ignored except when there is a fire incidence. Menya (2016) further notes that the fire brigade is inadequately staffed to serve Nairobi's population of 3.2 Million people. The fire brigade has a workforce of one hundred and fifty two (152 No.) staff members against an ideal requirement of 3200 fire fighters based on recommendation of NFPA standards (1 fire station for a catchment population of 200 000 persons). Over the years, the inadequacies of the city authority in fire disaster management have been manifested in the handling of various incidences in the city. These inadequacies have often warranted the need for other public, private and civil society organizations to assist in fire disaster response and recovery efforts (Menya, 2016).

Apart from the County government, other agencies involved in fire disaster management include National Disaster Operations Centre (NDOC), Kenya Red Cross, Kenya Police, St. John ambulance and occasionally the military during terror related disasters (Menya, 2016). The roles of these agencies are as indicated in Table 3.

Interagency fire disaster response in the city often adopts a 'subsidiarity' approach to fire disaster management, depending on the magnitude of a disaster. The County government fire brigade often assumes the primary role during fire disasters response efforts. Civil society organizations such as Kenya Red Cross and St. John ambulance as well as the Police service and private fire service companies often play a secondary role. During such disaster operations, the fire brigade plays a central role in coordinating the other agencies. Whenever fire disasters' response needs exceed the capacity of the city fire brigade and local communities, the next level of administration assumes response roles. In such circumstances, the National government through NDOC often takes over coordination of disaster response efforts except where military expertize is required.

The county government does not have documented operating procedures for interagency fire disaster operations; according to the fire chief at the City fire brigade, the roles of all disaster management agencies are well known to each agency thus once at a disaster scene, each agency executes its mandate accordingly (Menya, 2016). The lack of clearly stipulated and legislated agency roles occasionally hinders interagency disaster response operations at disaster scenes. This mainly occurs when NDOC has to take over the coordination of fire disaster response operations. The challenges faced relate to hierarchical issues brought about by the existence of NDOC and National Disaster Management Unit (NDMU). These are two national level agencies both charged with coordination of national disaster response. The chain of command is not clear and at times supremacy battles have impeded disaster response efforts at the scene affecting communication and coordination of operations (Menya, 2016).

6. Discussion

Traditional approaches to disaster management have been gradually replaced by new methods such as collaborative approaches that have been cultivated due to the increasing frequency and changing scope of disasters across the world. Collaboration, in a nutshell, is a process through which different organizations come together and share their knowledge, expertize and/or resources for a common goal. It implies a joint decision making approach to problem resolution through joint effort, resources, and decision-making, and share ownership of the final product or service where power is shared and stakeholders take collective responsibility for their actions and subsequent outcomes of their actions (Kamensky & Burlin, 2004).

The application of collaboration in disaster management has been fronted as an effective way of handling various disasters by disaster management actors/institutions. As Samba (2010) notes, when disasters strike, actors at all levels of government must be adequately trained and equipped with resources to collaborate across various jurisdictions in order to save lives and property. Through interagency collaboration, it is possible to achieve vertical and horizontal integration in disaster management. Vertical integration occurs within the bureaucratic structure of a single entity, for example, local/county government or between different levels of government (County and National governments). Horizontal integration occurs among distinct disaster management actors, for example, different levels of government, private sector, civil society organizations and other key disaster management stakeholders. This kind of integration through collaborative efforts is beneficial to disaster management as it can promote resource

Table 3Roles of various actors in fire disaster management.

Agency/Institution	Roles
County Government	1. First line responder to fire disasters
of Nairobi City (Fire	2. Search and rescue
brigade)	3. Fire disaster safety and prevention
	4. Ambulance services
	5. Post disaster recovery efforts
	6. Public sensitization
NDOC	 Co-ordination of disaster response at a national level
	Act as the command centre for all com- munications and information relating to disaster response operations
	3. Liaise with responsible ministries on national disaster response efforts.
	4. Search and rescue in the event of a dis- aster including undertaking rapid as- sessments, collection and dissemination of data
	5. Monitoring of disaster events on a 24- hour, 7-days a week basis.
Kenya Red Cross	1. Search and rescue
nenya nea eross	2. First aid
	3. Ambulance services
	4. Post disaster recovery efforts
St. John Ambulance	1. Ambulance services
St. John Ambulance	2. First aid
	3. Community awareness
Kenya National Police	Maintenance of law and order in the
Service	disaster scene
Kenya Defense Forces National Youth Service	Terror related disaster management Search and rescue
National Youth Service	.,
Deirota fina namina	2. Evacuation
Private fire service companies	 Assist in providing resources for fire fighting (financial, human, technical know-how and equipment)

mobilization and sharing of resources; joint decision making and collective responsibility throughout disaster prevention, preparedness, response, and post disaster recovery.

Lack of a comprehensive legal and institutional framework in Kenya has largely impeded disaster management in the country. This has largely influenced disaster management in Nairobi City; indeed the County Government of Nairobi lacks a legal and institutional framework for disaster management. This may be attributed to the lack of a national policy on which to anchor the city's disaster management policy. This has resulted to disaster management being a series of ad hoc decisions made administratively in a bureaucratic system of government.

It is worth noting that efforts have been made to salvage the situation through the formulation of a draft NDMP which advocates for interagency collaboration in disaster management. The County Government has also made efforts to formulate the Nairobi City County Fire and Rescue Services Bill, 2015 that is in the process of enactment. The bill gives provision for the county government to collaborate with other agencies in the provision of fire services. The implementation of the provisions of the draft policy and the city statute is yet to take place. In the mean time, the approach fronted is that of interagency coordination and communication as opposed to collaboration in its real sense.

Due to the limited capacity to handle fire disasters in the city, the county government has often enlisted the assistance of Kenya Red Cross, National Police Service, St. John's ambulance and private fire service companies to help in response and recovery; in such instances the fire brigade plays a primary role during the disaster operations. Whenever the magnitude of a fire disaster exceeds the city's fire brigade capacity, the county government often hands over the coordination of disaster operations to the national government through NDOC, which then assumes primary role of coordinating all other agencies/ organizations including the city's fire brigade.

It is clear that the principle of subsidiarity is widely applied in the management of fire disasters (and other disasters) in the city. This implies that the county government through its fire brigade is required to handle and coordinate fire disaster response operations within its jurisdiction without necessarily relying on the National government. However, if the magnitude of the fire disaster exceeds the capacity of the fire brigade to handle the incident, the national government may then take over to coordinate response and recovery efforts. Whilst operations are jointly done using various agency resources for the common goal of saving lives and property, it is clear that the approach embraced is centered on coordination, that is, interaction between participants in which formal linkages are mobilized because some assistance from others is needed to achieve organizational goals (McNamara, 2012).

7. Conclusion and recommendations

Fire disaster operations, particularly large operations, frequently involve a great many organizational and individual participants. Given the increasing frequency of fire disasters in the city, the changing nature of such disasters, and fire brigade resource shortages, it is essential for not only the county government, but also the national government to foster collaboration in order to integrate the delivery of fire services in the city. Collaboration has the capacity to empower and connect all key disaster management actors and thus achieve effective and efficient fire disaster management. A collaborative approach should aim at involving all stakeholders in preventing, preparing for, responding to and restoring communities after fire calamities.

This paper therefore recommends the following to foster interagency collaboration for fire disaster management in the city:

- i. Formulation and adoption of a fire disaster management policy to provide a clear legal and institutional framework geared towards interagency collaborative approach for fire disaster management.
- ii. Formulation and implementation of fire disaster management legislation to facilitate the operationalization of the fire disaster management policy.
- iii. The County Government should foster partnerships with the private sector through Public-Private Partnerships (PPPs) as a vehicle for collaboration in fire disaster management.
- iv. The County Government, in liaison with the national government, other public, and private agencies should develop an interagency fire management program/plan, to clearly outline areas, levels and roles and terms of engagement for interagency collaboration in fire disaster management.

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