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Interagency planning: a proposed process for managing complex social problems

Planificación interagencial: una propuesta de proceso para la gestión de problemas sociales complejos

Abstract: This article presents a proposal for an Interagency Planning Process (PPI), considering the main factors determining interagency collaborative work. While there is a vast literature on potential barriers or facilitators to collaboration, there remains a research gap on "how" collaborators operationalize unity of effort in interagency operations. Therefore, with the objective of developing a procedural model, this study was divided into three stages, according to Action Research methodology. First, a literary review was carried out to identify the main factors connected to interagency relations. Next, the knowledge obtained by the review was applied in a Planning Course, based on the Joint Planning Process (JPP) – from the Ministry of Defense – as well as Systemic Perspective Mapping and Dynamic Adaptive Process tools. Finally, the necessary adaptations, derived from the course results, were incorporated into the proposed Interagency Planning Process model. Since there is currently no consolidated planning framework for interagency work, this model will serve as a tool to guide successful collaboration.

Keywords: Collaboration, Interagency, Systemic Perspective Mapping, Dynamic Adaptive Process, Interagency Planning Process.

Resumen: Este artículo presenta una propuesta de Proceso de Planificación Interagencial (PPI), considerando los principales factores que influyen en los trabajos colaborativos interagenciales. Aunque existe amplia literatura sobre posibles barreras o facilitadores de la colaboración, todavía existe una brecha de investigación acerca de "cómo" los colaboradores articulan la unidad de esfuerzos en operaciones interagenciales. Así, con el objetivo de desarrollar un modelo procesal, este estudio se dividió en tres etapas, basándose en la metodología de la investigación-acción. Al principio, se realizó una revisión de literatura para identificar los principales factores asociados con las relaciones interagenciales. Luego, los conocimientos obtenidos en dicha revisión se aplicaron en un curso de planificación, basándose en el Proceso de Planificación Conjunta (PPC), del Ministerio de Defensa, así como herramientas de mapeo sistémico de perspectivas y proceso adaptativo dinámico. Por último, las adaptaciones necesarias, fruto de los resultados obtenidos en el curso, se implementaron al modelo propuesto. Como actualmente no existe una estructura de planificación consolidada para el trabajo interagencial, este modelo va a servir como instrumento para guiar una colaboración exitosa.

Palabras clave: Colaboración, Interagencial, Mapeo Sistémico de Perspectivas, Proceso Adaptativo Dinámico, Proceso de Planificación Interagencial.

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1 INTRODUCTION

Over the past two decades, most public management challenges started requiring high levels of collaboration and sociotechnical interactions, involving several state and non-state actors. Problems related to criminal organizations, cross-border crime, cyber threats, and environmental degradation, among others, are difficult, if not impossible, to be managed effectively by a single agency. In public policy, such problems are referred to as 'wicked,'[1] because there is no simple, definitive, short-term answer to these nearly intractable issues (Sydelko; Midgley; Espinosa, 2021, p. 250). Furthermore, they involve agencies with different perspectives, each with their own unique approach. Thus, success in addressing these multidimensional and interconnected problems ultimately depends on agencies finding ways to overcome the standard culture of "autonomy of action" and adopt a culture of "unity of effort,"[2] and the only way to achieve effective and consistent solutions is to combine resources and capabilities from different parties (Mäkipää, 2006, p. 71). This requires planners and decision-makers to be highly adaptive and shift their mindset from "solving" to "managing" such problems (Sydelko; Midgley; Espinosa, 2021, p. 251). Isolated interventions in specific segments of the problem must be replaced by systemic and innovative approaches, arising from the synergistic work of different agencies.

Therefore, this article seeks a deeper understanding of the practical dynamics of the challenges encountered in interagency work, arguing that agencies must increasingly achieve what Vangen and Huxham (2005, pp. 4-5) call the "collaborative advantage."[3] Working across agency boundaries has become a central part of the contemporary arrangement for public service provision. While there is a rich literature on the barriers and facilitators of interagency collaboration, there is little empirical research on the process of decision-making planning and structures within interorganizational management. There are few examples of the creation and implementation of interagency programs that allow for the exploration of "how-to" to mitigate barriers and, at the same time, explore the catalysts in collaborative processes. In this sense, the objective of this work is to present a proposed procedural model for interagency planning, based on a systemic approach.

To achieve the above objective, the research is guided by the following questions: 1) "How can we create a common understanding of a given problem, mitigating some barriers and exploring certain facilitators, in interagency collaborative work?", and 2) "What procedural tools should be adopted in interagency planning, considering the dynamic and adaptive nature

1 The term "wicked problem" was first used by Rittel and Webber (1973) in social policy issues, which should be understood as large, open systems, interconnected in networks, in such a way that the outputs of one become inputs to another. In this framework, isolated actions aimed at solving a problem in a particular segment of the network can lead to more serious problems in other segments.

2 "Unity of effort" ensures that all efforts are focused on a common target. It requires coordination and cooperation among all forces—even if they are not necessarily part of the same command structure—toward a commonly recognized objective. Actions occur simultaneously, united by intention and purpose (Lawrence, 1994-1995).

3 According to the authors, collaborative advantage has six fundamental foundations: 1) resource complementarity; 2) shared responsibilities; 3) increased productivity (efficiency); 4) reciprocal oversight (transparency); 5) mutual learning, and 6) the moral imperative of delivering public value to society.

of complex social problems?" The work is based on two research questions because there are two distinct concerns that deserve equal attention when applying a systemic approach to the process. The first is the issue of cross accountability, where, on the one hand, agencies defend their own perspective and interests faithfully, but, on the other, are challenged to engage in integrated solutions for collaborative efforts. The second issue is the fact that complex social problems cannot be predicted in detail, which requires planners and decision-makers to be flexible in implementing their interventions.

2 METHODOLGY

To identify and analyze the challenges of interagency collaborative work and, based on this analysis, develop a prototype for a specific planning process model for this activity, we used the action research methodology of Thiollent (2011). This method is based on the evaluation and improvement of a specific practice, following a systematic cycle of "observation, reflection, and change," guided by knowledge gained from prior scientific research, which lends greater credibility to the suggested changes to the practice (Tripp, 2005). We developed our method in three stages: the first was the exploratory phase, followed by the application and evaluation of the practice, and finally, the dissemination of the results.

In the exploratory phase, we prepared a literature review, which allowed us to delimit and contextualize the research questions by highlighting areas where further study on interagency collaborative work is needed. Furthermore, the information and knowledge gained from this review enabled the development of our theoretical framework. Thus, in the action research, the literature review served subserviently to the adopted practice, which stimulated changes and adaptations in the process.

After the exploratory phase, we began the second stage of the action research by defining the action guidelines for the practice. Therefore, in order to investigate how agency representatives deal with the challenges of collaboration in an interagency operation, we created a procedural framework based on the Joint Planning Process (JPP)[4] from the Ministry of Defense. By comparing JPP with the previous knowledge from the literature review, we identified the main differences and made the necessary adaptations to develop an Interagency Planning Process (IPP) prototype.

Considering that action research has as one of its principles the "learning by doing" methodology, we decided to apply the IPP prototype to the *1º Curso de Coordenação e Planejamento Interagências* (CCOPI – 1st Interagency Coordination and Planning Course), held at the *Escola Superior de Defesa* (Brazilian Defense College) in Brasília, Federal District. CCOPI was attended by 15 different Brazilian government departments, bodies, and agencies. The course allowed us to test new techniques, aiming to mitigate inhibiting factors and enhance the catalysts for interagency collaboration. Unlike traditional experimental scientific research—which typically follows the canons of

4 Planning done by a Joint General Staff (JMS), with representatives from at least two of the three Component Forces (Navy, Army, and Air Force), for the employment of military power in situations with varying degrees of complexity, requiring measures related to the movement, support, protection, coordination, and control of forces (Brasil, 2020).

controlled variables—action research allowed us to adopt a more interventionist and deliberative stance, making expert judgments about process improvements that would make the practice more effective.

Finally, in the third and final phase of dissemination of results—as a product of the first cycle of "observation, reflection, and change"—we decided to make two modifications to the planning process that would make interagency collaboration more effective. The first was the adoption of a systemic approach that supports critical thinking, combining systemic perspective mapping with Boundary Critique (Sydelko; Midgley; Espinosa, 2021). The second modification was the use of certain Dynamic Adaptive Planning (DAP) tools (Marchau et al., 2019), due to the dynamism of the situations upon which complex social problems are structured.

Boundary Critique, related to systemic perspective mapping, is rooted in the critical systems heuristic of Werner Ulrich (1983), which is a philosophical framework to support reflective practice. The purpose is to build a more holistic awareness of situations by throwing light on the boundaries that circumscribe our understanding. Thus, it allows us to consider different parties' opinions and concerns, mutually understand multiple perspectives, and deal more constructively with these differences. Its applicability fits well into the initial IPP phases, allowing different agencies—with distinct perspectives—to reach a common understanding of the problem and, thus, achieve common objectives.

DAP, on the other hand, is a process that differs from IPP because, as its name suggests, it is more dynamic, making it ideal for a Complex Adaptive System (CAS)[5]. It contrasts with the processes used in traditional, linear approaches, requiring managers to behave in a more innovative, dynamic, and synergistic manner. This has to do with linearity being incompatible with unpredictability, and such randomness encourages a certain degree of improvisation among planners and decision-makers.

3 MAIN POINTS OF THE LITERATURE REVIEW

The literature review formed our theoretical framework for the understanding and analysis of interagency collaboration. Approximately 143 publications were analyzed, covering a significant portion of books, articles, and academic papers that address both interagency programs and collaborative efforts in public administration.

Since the analyzed publications lack a precise and agreed-upon definition of the term "interagency work," we decided to specify this concept after conducting the review. We defined interagency work as occurring when people from different agencies produce something of public value through a unified effort, applying joint resources, participatory decision-making, and shared accountability for results. This definition encompasses six important characteristics of interagency work: 1) it involves the participation of more than one agency; 2) its primary purpose is to provide society with products and services of significant public value; 3) the targets and goals have to be shared by all participants; 4) there is complementarity of resources; 5) there is a balance of power in decision-making, and 6) everyone is equally responsible for the outcome, whether success or

5 Complex Adaptive Systems involve many components (agents) that adapt and learn as they interact (adaptation and evolution that improve performance), and are at the heart of important contemporary problems (Holland, 2006).

failure. It is worth noting that, for the term "agency," we adopted the definition provided in the Ministry of Defense's Interagency Operations Manual (MD33-M-12), which is "any organization, institution, or entity, based on legal and/or regulatory instruments, that has specific competencies, and may be governmental or non-governmental, military or civilian, public or private, national or international" (Brasil, 2017, p. 14, our translation).

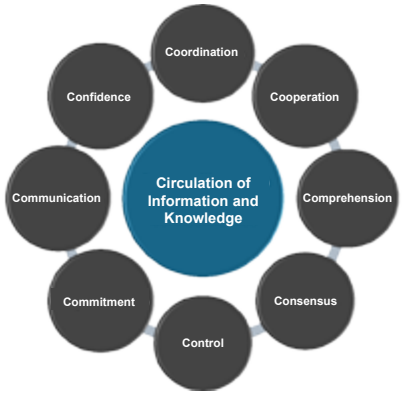
The term "collaboration" is defined by Agranoff and McGuire (2003) as the process of operating in multi-organizational arrangements to solve problems that cannot be solved – or easily solved – by organizations individually. Therefore, organizations share resources and information in order to coordinate activities and pursue mutually beneficial strategies (Thomas, 1997). In a broad and comprehensive manner, Thomson and Perry (2006) establish five key collaboration dimensions: 1) governance dimension – shared goals and responsibilities, balance of power, participatory decision-making, and information and knowledge sharing; 2) administration dimension – administrative structure that extends from governance to action, clearly defined responsibilities and boundaries, and good communication; 3) organizational autonomy dimension – reconciliation of individual and collective interests; 4) mutuality dimension – mutual benefits, interdependence, complementarity of capabilities and resources, and 5) trust and reciprocity dimension – fair treatment, good faith, and honesty.

With a focus on presenting more comprehensive results and enrich the analysis extracted from the literature review, we created our own framework with the main attributes of interagency collaboration, which we call the "9Cs," as explained below.

3.1 "9Cs" of Interagency Collaboration

The "9Cs" of collaboration emerged from a detailed study of the various analyses performed by researchers regarding the fundamental characteristics present in interagency collaborative work. Thus, we grouped into a conceptual framework the main essential attributes for the success of such programs: coordination, cooperation, comprehension, consensus, control, commitment, communication, confidence, and, at the heart of this arrangement, circulation of information and knowledge (Figure 1).

Figure 1 – "9Cs" of Interagency Collaboration



Source: Prepared by the author (2024)

1) **Coordination:** Although there is still some uncertainty in the literature regarding the difference or correlation between the concepts of "collaboration," "coordination," and "cooperation," we adopted for this study the definitions of Gulati, Wohlgezogen, and Zhelyazkov (2012), who understand "coordination" and "cooperation" as distinct and complementary facets of "collaboration." According to the authors, coordination is the deliberate and orderly alignment or adjustment of the actions of two or more participants to achieve jointly determined goals.
2) **Cooperation:** It is the joint implementation of previously agreed goals, within a shared understanding of the resources, contributions, and rewards associated with each participant (Gulati; Wohlgezogen; Zhelyazkov, 2012).
3) **Comprehension:** It is to understand the mission, structure, capabilities, and limitations of the other participants. It is known what each agency "brings to the table," allowing representatives from different agencies to see the full operational picture (Davis Jr., 2010).
4) **Consensus:** Agencies must be willing to support decisions made jointly and collaboratively, even if the decision was not unanimous among the participants. Consensus does not mean that everyone must agree with a particular solution, but that they must respect and enforce the decision with commitment and responsibility (Thomson; Perry, 2006).
5) **Control:** It is the ability to keep actions focused on common goals, maintained through shared knowledge, commonly acquired skills, and the reciprocal adjustment of actions to suit the requirements of the evolving situation (Comfort, 2007).
6) **Commitment:** It is a volitional psychological bond that reflects dedication and responsibility for specific goals (Klein; Cooper; Monahan, 2013). Commitment is closely related to accountability for results and the resources allocated to the collaborative effort ("sense of shared sacrifice").
7) **Communication:** It is the common thread in all interagency collaborative work. It plays a crucial role in the development of trust and mutual respect, strengthening of formal and informal relationships, information and knowledge sharing, creation of shared meanings, and update of frameworks of common understanding among participants (Yang; Maxwell, 2011).
8) **Confidence:** Given the sometimes arbitrary nature both of how collaborative efforts originate and of potential biases regarding the way other agencies work, this trust-building process is an essential social phenomenon in establishing effective partnerships. To overcome high initial distrust, Waardenburg (2020) suggests creating intermediate goals, where small victories achieved throughout the process can be celebrated together, strengthening group trust. Trust should also be analyzed from two distinct perspectives. The first is individual trust, which must be developed between individuals from different bodies; and the second is interorganizational trust, which is the trust

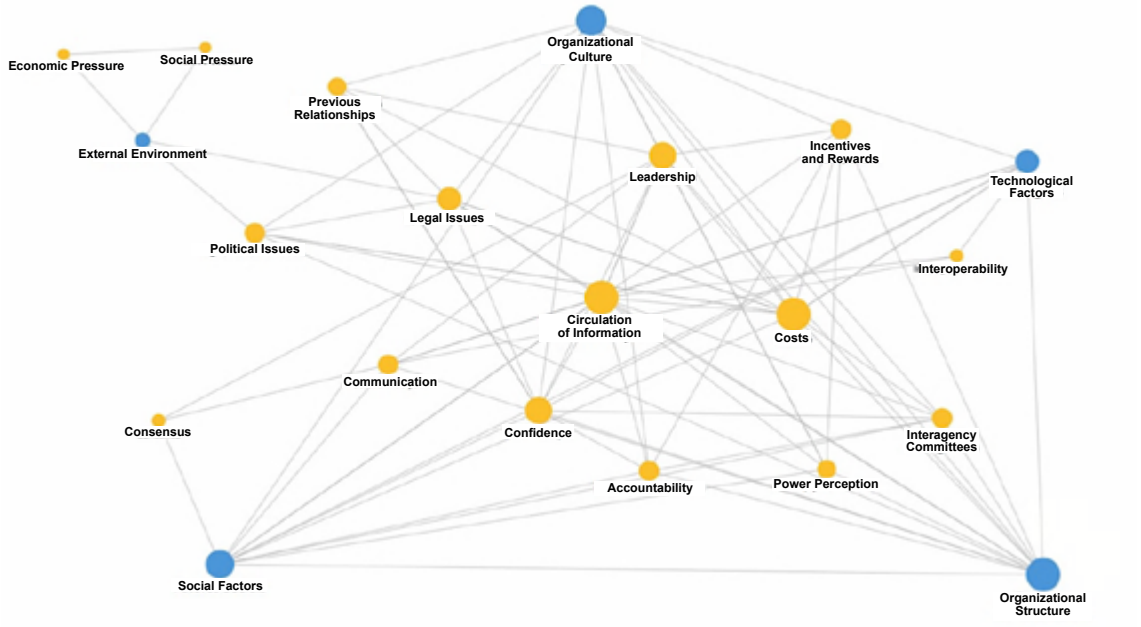
collective orientation that one agency maintains with respect to another (Zaheer; Harris, 2006).

9) **Circulation of information and knowledge** Latent ability to exchange information and knowledge between government bodies and programs, enabling decisions based on more comprehensive analyses (Dawes, 1996). To achieve this, it is necessary to: 1) design processes and tools that allow for the capture and exchange of information; 2) create an environment where people feel free to contribute their knowledge and seek knowledge from colleagues; 3) link performance evaluations to how well an individual contributes to generating, analyzing, and transferring knowledge, and 4) make knowledge available to all employees, except when there is a demonstrated need for confidentiality or privacy protection (Liebowitz; Chen, 2004).

3.2 Key factors influencing interagency collaboration

In addition to the "9Cs," the literature review also provided us with different insights into the factors that influence interagency collaboration. We decided to synthesize the analysis, dividing the study into five main dimensions: external environment, organizational structure, organizational culture, technological factors, and social factors. Certain factors may permeate more than one dimension. These areas of intersection between dimensions and the multiple connections between factors were schematized in a "node diagram," in which the larger the node, the greater its influence on the collaborative effort (Figure 2). In this article, we will address only those factors that played a crucial role in structuring the IPP model.

Figure 2 – Factors influencing interagency collaboration



Source: Prepared by the author (2022)

1) **External environment:** The factor associated with the external environment that most impacted the IPP modeling was legal issues. Legal issues refer to the laws, rules, and regulations that, in theory, should create an environment in which interagency collaboration becomes effective and legitimate. In addition to the need to clearly define each participating agency's roles and responsibilities, it is also essential to outline the resource provision and the issues related to information sharing. Explicit statutory authority would help eliminate agency hesitation to participate in collaborative work, lending legality to the process and providing collaborators with psychological safety (Landsbergen Jr.; Wolken Jr., 2001).
2) **Organizational structure:** Some structural issues pose barriers to collaborative efforts, such as: conflicting organizational goals; lack of understanding and respect between agencies, and significant diversity of cultures, structures, and philosophies (Estevez; Fillottrani; Janowski, 2010; Gil-Garcia; Chengalur-Smith; Duchesi, 2007). To minimize these problems, public administration theorists suggest the creation of interagency committees to coordinate communication, organize, and disseminate information, and keep agencies aware of the jointly determined rules governing their relationships (Thomas, 1997). It is important that these committees be supported by certain key roles, which need to be established within each agency. The most common and easily implemented example is Liaison Officers. They are experts in knowing who to consult within partner bodies to have requests granted and gain knowledge and the right and timely information. Depending on the established structure, Liaison Officers may form cells or fusion centers, thus concentrating the coordination of interagency activities in a single physical location (Yates; Paquette, 2011). Furthermore, studies reveal that the propensity to collaborate varies according to hierarchical stratification. According to Cohen (2018), there is greater collaboration at the line level, where the "lower-level participants" are located. This is because collaboration and sharing among lower-level participants take place on an interpersonal, informal, or ad hoc basis, while among senior management such collaboration is maintained at the formal level, through official agreements.
3) **Organizational culture:** Organizational culture refers to a system or set of shared norms, beliefs, values, procedures, and meanings held by an organization's members, which distinguishes it from others (Abubakar et al., 2019; Robbins; Judge, 2013). It plays a significant role in shaping organizational members' perceptions of the collaboration value, as well as in their compliance with or resistance to such activity. Thus, organizational culture must explore the logic of interdependence, alleviate the uncertainties affecting agencies, and demonstrate concrete mutual gains in an explicit manner (Mitchell; O'Leary; Gerard, 2015; Thomas, 1997, p. 221). Agencies will not change their objectives, and their executives will not sacrifice their autonomy without the expectation of obtaining

internal benefits, improving their public image, or expanding their influence over others. Kaiser (2011) cites some examples of these cultural transformations: encouraging a redesign of incentives and rewards for employees; intensifying training, educational programs, and integrated exercises among bodies; creating long-term epistemic communities, and developing compatible and reciprocal processes for knowledge and people exchange.

Senior management support is also a significant predictor of perceptions of a positive culture of collaboration, considering that employees are interested in acting in accordance with their leaders (Connelly; Kelloway, 2003). Therefore, the senior managers' attitudes and behaviors shape other employees' willingness to collaborate with other agencies (Cohen, 2018; Moynihan; Landuyt, 2009). Leaders should promote activities that encourage people not to appropriate the information they have access to, stimulating and rewarding its sharing (Jarvenpaa; Staples, 2000). This is because individuals see themselves as owners of their knowledge, believing that their advancement and status depend on demonstrating unique or exceptional knowledge. For this reason, people appear reluctant to share their knowledge due to a self-preservation mentality (Liebowitz; Chen, 2004). Information should be viewed more as an organization "product" than as individually owned "expertise" (Yang; Maxwell, 2011).

4) **Technological factors:** Information and communication technologies (ICTs) facilitate several interagency processes, such as open communication, secure and timely information sharing, and coordination with increasing speed and efficiency, among others (Al-Busaidi; Olfman, 2017). In this regard, technical interoperability is one of the most important measures for effective collaboration, as it defines compatibility standards to be adopted among the various information systems implemented within agencies. Different organizations have different types of hardware and software, and integrating heterogeneous information systems with different platforms, data standards, schemes, and qualities is a challenge. Although ICTs accelerate virtual connection between individuals and groups, an excessive focus on technology is the most common pitfall in collaborative efforts. If people rely exclusively on ICTs, physical meetings and face-to-face interactions may be neglected (Ngoc, 2005). The application of ICTs has to be in tune with the communal culture and social interactions of the environment, providing an exponential effect on collaboration.
5) **Social factors:** Personal relationships and social networks are critical factors for collaboration, as they foster mutual respect and trust, promoting a collaborative culture (Yang; Maxwell, 2011). According to Constant, Kiesler, and Sproull (1994), people may naturally want to collaborate, and the best organizational policy may simply be to create opportunities for them to talk and exchange information, opinions, and advice. Therefore, a conducive organizational environment to social interaction is also conducive to collaboration. Informal forums are often the environments where new insights and creative, innovative solutions to complex problems occur. Another important concept associated with the collaboration

social factors is epistemic communities. People with strong social identification, who share interests and work practices, are held together by a common bond of purpose and skills, and typically share the same desire to successfully achieve agreed-upon goals (McNabb, 2007). Epistemic communities also foster the cross-pollination of ideas, the transfer of best practices, and the generation of critical mass. However, to generate this critical mass, managers must seek individuals with longer tenures and more practical experience. Therefore, high turnover can be detrimental to collaboration (Subramaniam; Youndt, 2005). Typically, experts in certain areas are scarce, and when they leave for other positions or are overtaken by other commitments, collaboration becomes vulnerable, with potential loss of communication channels and reliability.

Based on the theoretical contributions identified in the literature review, we present the IPP proposal in the following section, whose steps, tools, and approaches were designed in light of the identified challenges and the need for practical, adaptive, and integrated solutions.

4 INTERAGENCY PLANNING PROCESS

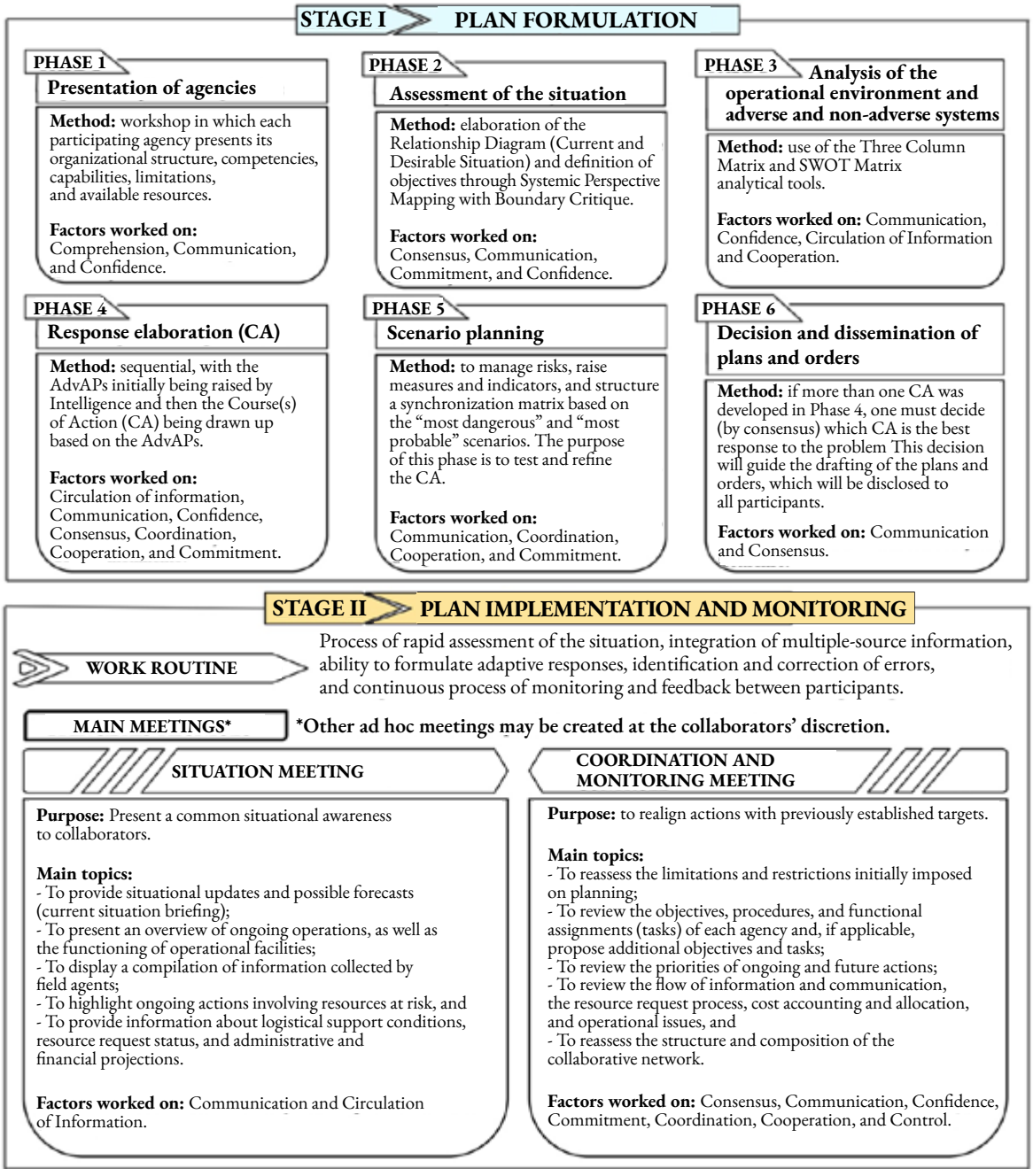
In this first IPP version, we focused on addressing the following challenges: 1) dynamically evolving situations in a complex interagency environment[6]; 2) adequate understanding of each agency's available capabilities and resources to support collaborative efforts; 3) problem framing, which encompasses the technically and politically challenging task of defining the problem that will be dealt with by interagency work; 4) reconciliation of different perspectives and interests to identify shared targets and goals, and 5) development of trust. It is important to emphasize that action research is characterized by continuity, and further refinements should be introduced in the future, increasingly enhancing the process and generating new IPP versions.

For IPP adaptation to the changes and uncertainties of the dynamic and complex environment in which social problems occur, our proposed model drew on tools from DAP, first described by Walker, Rahman, and Cave (2001) and later refined by Kwakkel, Walker, and Marchau (2010) and Marchau et al. (2019). In summary, DAP should be designed to quickly present a set of immediate actions, but also adapt according to changing circumstances and, already foreseeing ongoing responses, based on the results of a monitoring system. As new information becomes known, the plan should incorporate the ability to adapt dynamically through learning mechanisms. These learning mechanisms will fuel the incremental planning nature, which will be constantly refined and strengthened according to changes in the situation. Unlike IPP, which is divided into three stages, the DAP approach is developed in just two stages: 1) Plan formulation – it is the design stage, in which the plan, the monitoring system, and various

6 The interagency environment encompasses the relationships between different agencies involved in collaborative work. It is characterized by being complex, due to the heterogeneity and cultural differences between agencies, and dynamic, due to the volatility and uncertainty of the context in which these relationships develop (Ferreira, 2022).

pre- and post-implementation actions are elaborated, and 2) Plan implementation and monitoring – it is the stage in which the plan and monitoring system are implemented and corrective actions are taken, if necessary. Thus, IPP assumes the characteristics of a flexible (adaptive), iterative, and incremental process. Figure 3 presents the IPP structure, with its stages and phases.

Figure 3 – Interagency Planning Process



Source: Prepared by the author (2024)

4.1 Stage I: Plan formulation

The plan formulation encompasses the following phases: 1) Presentation of agencies; 2) Assessment of the situation; 3) Analysis of the operational environment and adverse and non-adverse systems; 4) Response elaboration; 5) Scenario planning, and 6) Decision and dissemination of plans and orders.

4.1.1 Phase 1: Presentation of agencies

The first phase of the plan formulation was designed to mitigate the impact of cultural differences between participating agencies and strengthen interpersonal relationships among collaborators. It will have the following main purposes: 1) to broaden the skills and knowledge necessary to qualify representatives for interagency work; 2) to provide opportunity for each agency to present its capabilities and areas of expertise, filling in other participants' knowledge gaps, and 3) to stimulate communication and trust.

This initial process phase addresses one of the most critical requirements for the success of a collaborative effort: ensuring that everyone understands each participant's capabilities and limitations. Agencies present their resources and modus operandi, as well as procedures that may involve other agencies, so that everyone can see a complete overview of capabilities and understand what their agency can rely on and how it can contribute. The goal is to establish a common operational framework, which, in practice, is a group knowledge base directed at collective action.

At this point, it is important the existence of a shared physical space for all agency representatives, as well as an open and inquisitive dialogue between them. This inquisitive approach is necessary because, at this initial stage, when there is still some apprehension about initiating communication, agencies will not disclose the necessary information unless asked. Likewise, each representative must be proactive in presenting relevant information about their agency, as it cannot be assumed that the others are familiar with its capabilities and limitations. Teams that share important operational concepts in an accurate manner are able to coordinate their activities more effectively and make decisions with fewer misunderstandings.

Notably, in an interagency environment, positional authority is not enough to convince other agencies' representatives. To persuade them, solid evidence and arguments are necessary to prove that what is being proposed will actually contribute to solving the identified problems. At this point, it is important to know which agency will assume the role of central coordinator. Ideally, there should already be a regulatory act that previously designated the person responsible for this coordination. Otherwise, the "Central Coordinator" will be chosen at this point through joint deliberation by the participants.

It is worth noting that the work carried out in this phase would be easier if there were already a history of prior relationships between the agencies. This could be achieved by conducting regular training and exercises, in which the agencies would already have acquired some knowledge of their partners' capabilities and limitations. Furthermore,

prior exercises allow for gaining experience, offering collaborators the opportunity to test certain approaches before even dealing with the actual problem. This is what Klein et al. (1993, p. 138) call the "recognition-primed decision making." Experienced leaders draw on a repertoire of previous actions—under similar conditions—and create viable strategies to adapt to the existing context, implementing more effective actions. Learning capacity will be even higher when opportunities for discussion, feedback, and reflection among collaborators on "lessons learned" or "best practices" are well explored, encouraged through techniques such as "after-action report" (Burke; Macler, 2020, p. 9). Thus, to increase adaptive capacity to deal with complex problems, agencies must learn from the results of previous dynamics (positive or negative).

4.1.2 Phase 2: Assessment of the situation

For instructive purposes, this section will be divided into two topics. The first will address the method used to frame and define the problem, and the second will discuss how to identify common goals and objectives across different agencies.

4.1.2.1 Problem framing and definition

Phase 2 of IPP begins with an analysis of the current situation, followed by the identification of a specific desirable situation, and then the definition of the problem and its root causes[7]. However, this is notoriously difficult for complex social problems, which are inherently resistant to a clear definition and an agreed-upon solution. Furthermore, the different purposes, perspectives, and values between the participating agencies further complicate problem framing. Therefore, it is appropriate to consider multiple perspectives to make collaboration attractive to all participants, without compromising the correct understanding and redefinition of the problem. The recommendation is to use a tool that simultaneously allows for systematic mapping of the problem elements and their relationships, as well as increasing mutual understanding, reducing conflict, and establishing trust among participants.

The term "problem structuring methods" was coined by Mingers and Rosenhead (2001) as a set of methods used to achieve a shared understanding of a problematic situation in which there is a high level of complexity, uncertainty, and pluralism of perspectives. For our IPP model, we decided to adopt one of these methods, described by Sydelko, Midgley, and Espinosa (2021) as Systemic Perspective Mapping. Several characteristics make this method useful and advantageous in the context of complex problems, including: supporting critical thinking about boundaries taken for granted by participants; providing collaborators with tools to explore the interconnections between the issues raised; considering the perspectives of multiple stakeholders, and achieving a correct understanding of the problem, clearly

7 The "current situation" is what is actually happening when the analysis is performed, including all relevant actors and relationships to that context. It is a holistic understanding of the systems that affect the problem under consideration, also seeking to identify behaviors, tensions, and trends. The "desired situation" encompasses all the inclusions, exclusions, and changes that should be made to the current situation, aiming to shape it into what is believed to be a successful outcome. Defining the "problem" is precisely identifying the "obstacles" that prevent the current situation from becoming the desired situation (Brasil, 2020, p. 41-44).

recognizing its degree of risk. This allows interagency work to move from a simple static set of procedures linked between different organizations to a dynamic process, based on synergistic approaches that are adaptable to changing conditions. To make our approach more critical—demarcating what is and is not relevant within a specific construct—we integrated some tools from Boundary Critique of Ulrich (1983) into our Systemic Perspective Mapping.

There are two ways to apply this method, and the time available to implement this systemic approach will determine which will be used. Ideally, this systemic approach should be divided into two stages, with agencies initially working individually and then consolidating their perspectives. Nevertheless, if time is limited, this approach will be conducted in a single workshop, with all representatives from the different agencies present, seeking a shared view of the situation and the problem. Regardless of the method used, the important thing is that at the end of this phase the following goals have been achieved: 1) all different perspectives, even conflicting ones, have been considered; 2) there has been a reduction, and if possible, neutralization, of imbalances of power and influence, and 3) the agency representatives' perspective on the interconnections of the problem was broadened, generating constructive debates and improved levels of mutual respect.

Below, we describe the ideal procedure, divided into two steps.

1) **Step 1:** To frame and define the problem, it is necessary to first conduct an exploratory analysis of the intervention context (situation). This analysis should be presented as a mind map, a relationship diagram, or any other visual model that presents the main elements (actors) and interconnections existing in the situation under study. At this point, a factor that can become particularly problematic is the variation in hierarchy among agency representatives, as junior participants may feel intimidated when senior colleagues vigorously express views with which they disagree. To avoid a possible initial conflict of ideas or the marginalization of certain agencies, the suggestion is that, initially, this visual model be developed individually (with each agency creating its own). This initial step is designed to allow collaborators to express their purposes and values freely, capture what they perceive to be the key elements of the problem (main actors), and identify, explicitly, what they consider to be the main interdependence between them. In other words, the agencies develop and explore their perspectives on the problem individually, without having to consider other agencies' conflicting perspectives, and without imposing any limits on themselves at this point. This will allow us, in a second step, to consider the different points of view and incorporate as many factors as possible into the systemic analysis. Next, the agencies should also assign a weight to each of the elements and each relationship between them, representing the level of importance in the situation under analysis. These weights become particularly significant in the next step, when the entire interagency group workshop takes place.

2) **Step 2:** At this point, multiple perspectives are brought together in a workshop to provide a broader focus and deeper understanding of the problem situation and possible approaches. Therefore, we emphasize the importance of the social interactions that take place during this workshop. Special care must be taken to prevent agencies with greater power (or influence) from simply taking their boundaries and values for granted and imposing them on the others. The purpose of bringing representatives from all agencies together in a collaborative exploratory analysis is to open them up to other perspectives, leading them to realize that their individual knowledge is inevitably biased. This is especially true when they begin to explore less familiar aspects of the problem situation, forcing them to admit areas of ignorance. All agencies that have mapped the problem individually and assessed the aspects they considered most important must now consider how their perspectives differ from those of others. While they may consider themselves experts, agencies often bring their own agendas to be followed when describing how they perceive the problem. One agency's absolute priority, stemming from its purposes and objectives, may be perceived as less important by another. This is where Boundary Critique becomes a relevant tool for participants to structure their understanding of the problem, exploring and justifying their preferred weights through dialogue. As agencies' purposes and values differ, so too do their judgments of the boundaries of what is relevant to the complex problem at hand, which often generates conflict. Boundary Critique seeks to transcend conflicts through dialogue and the collective exploration of different possibilities for delimiting the system of concerns.

Consequently, the different individual diagrams are merged into a single systems-perspective map that encompasses all the elements, relationships, and weights provided by each participating agency. This provides a first problem representation without marginalizing any of the agencies. The newly merged map then needs to be organized to reveal redundancies, inconsistencies, and conflicting weights. It is also necessary to verify the existence of certain discontinuities and differences in nomenclature or terminology. Therefore, agency representatives should meet to reconcile the differences in the merged map and present possible adaptations and changes to the elements, relationships, and weights. Typically, participants can reach a consensus on the elements and the relationships between them with relative ease. It is also natural that during this debate, the absence of a certain key element may be noted, which could only be verified through a collective analysis by all representatives. On the other hand, reaching consensus on evaluation must arise from more careful deliberation. This is because the degree of importance of each element and relationship may spark off the most heated debates. Therefore, the participation of a moderator or Liaison Officers may be essential to help interpret the different points of view and reach a common agreement on the different weights.

Once all disagreements have been resolved, the resulting map represents the breadth of perspectives from all agencies involved. At this point, each participant should

be able to see the situation through the eyes of a representative from another agency. This entire process provides collaborators with a more systemic perspective of the problem, leading to a new evaluation of how their actions can affect other parties and relationships. The next step, therefore, is to establish common targets and goals to be pursued by the interagency collaborative effort.

4.1.2.2 Establishment of shared targets and goals

Shared target and goals are the first major domain that emerges from the very definition of collaboration. The more aligned each agency's individual goals are with the goals of the collaborative effort, the greater the likelihood that agencies will invest the necessary resources in this work. Therefore, one of the critical moments of IPP is achieving a shared understanding of target and goals. The challenge is to capture the interests and leverage the agencies' commitment to the collaborative effort. Collaborators highly committed to agreed targets expend greater effort and show more persistence to achieve them, and are more likely to develop strategies related to such targets. It is also worth noting that not only should goals be shared, but successful governance arrangements also share responsibility for results.

One way to replace each agency's linear solutions with a synergistic and innovative approach—focused on common goals—is through mutual concessions. Hence the important relation between shared goals and consensus. The ability to get everyone to agree to reach a consensus is a significant skill that must be mastered in the interagency environment. Consensus is "a collective opinion." Interagency decisions only work this way. If an agency does not believe a consensus has been reached, it may not participate in the proposed solution. Willingness to harmonize is essential to the success of a collaborative effort. It means giving up some points to reach a commitment solution.

4.1.3 Phase 3: Analysis of the operational environment and adverse and non-adverse systems

In Phase 3 of IPP, participants use two analytical tools to deepen their understanding of the environment where the plan actions will be carried out, as well as the adverse and non-adverse systems that may influence the achievement of targets and goals.

The first tool is the "Three-Column Matrix: fact, deduction, and conclusion" (Chart 1). This tool is simple but explores methodically collaborators' critical thinking, reaching conclusions that will be useful for planning. Facts are data or events, real or verifiable (evidence), that must be directly linked to the achievement of the established targets and goals. In other words, only "relevant" facts should be considered in the analysis, which are those directly linked to the problem at hand. Deductions are subsequent unfolding of the relevant facts, generally expressed in terms of advantages, disadvantages, limitations, or possibilities. The conclusion is the result of the analysis, presenting what will be done in relation to the plan, resulting from the deductions obtained. It could be a procedure

or action to be introduced into the plan, the identification of a risk that must be managed, or even an information or knowledge need that must be met for planning improvement.

Chart 1 – Three-column matrix

RELEVANT FACT	DEDUCTION	CONCLUSION
Of all the data and pieces of information I have, which ones impact the achievement of established targets and goals?	What is the impact or importance of this (these) fact(s) on/for my planning?	What can or should I do?

Source: Prepared by the author, based on Brasil (2020).

The analysis by means of the "Three-Column Matrix" should be performed both for relevant facts associated with the operational environment[8] and for those related to adverse and non-adverse systems. Once this analysis is complete, the next step is to develop a SWOT Matrix, which stands for strengths, weaknesses, opportunities, and threats, respectively.

The SWOT Matrix represents a synthesis of the most relevant conclusions obtained by the "Three-Column Matrix." It will indicate which weaknesses and threats (vulnerabilities) should be mitigated, and which strengths and opportunities should be explored. These are generally expressed in terms of strengths, difficulties, capabilities, or disabilities.

These factors of strength, weakness, opportunities, and threats will serve as the basis for identifying "intermediate objectives." We observed in the literature review that intermediate results or "small wins" drive successful collaboration (Ward et al., 2018). These small wins can fuel the collaborative process, encouraging a virtuous cycle that builds up trust and strengthens commitment. The idea is that the sum of these "intermediate objectives" will lead to the achievement of broader joint objectives. The SWOT Matrix should also—along with the Adverse Actor Possibilities (AdvAPs)—support the development of a response to the problem, called a course of action (CA)[9]. These concepts will be developed in the next phase of IPP.

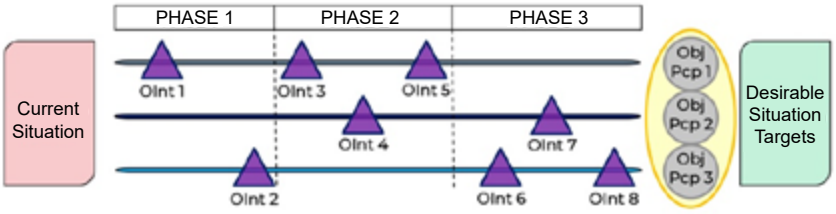
At the end of this phase, all the elements that have been worked on so far—current situation, desirable situation, targets, and goals (broad and intermediate)—will be presented in a "drawing," which depicts the operational approach[10] adopted in response to that problem (Figure 4).

8 The operational environment is the combination of conditions, circumstances, and influences that affect the space where interagency capabilities are used (Brasil, 2020).

9 AdvAPs are actions that adverse actors are capable of taking, and courses of action (CAs) are possible alternatives or solutions to the problem. The ultimate purpose of AdvAPs is to refine the CAs. When AdvAPs are faced with CAs, it is possible to identify flaws, vulnerabilities, and risks (Brasil, 2020).

10 The operational approach is a general idea of "what must be done" to achieve the desirable situation (Brasil, 2020).

Figure 4 - Operational approach design



Source: Prepared by the author (2022)

4.1.4 Phase 4: Response elaboration (course of action)

An important lesson learned during the practice developed at CCOPI was the importance of integrated intelligence between agencies. There was a consensus that investing in training and technological improvements in intelligence, in addition to improving the planning and performance of actions, was a way to save resources and avoid fruitless activities. Timely information and knowledge are essential for making effective responses. The objective is that agencies work not based on the adversary's "intention," but rather on what they actually "are" or "could be" doing[11].

Therefore, before preparing the CA (or CAs), agencies must discuss the AdvAPs. Once we know what the adverse agent is capable of doing, response actions will be designed to confront these possibilities. For an AdvAP to be valid, it must meet two requirements: 1) the adverse agents must have the necessary means and resources to realize or maintain it, and 2) once maintained or realized, this adverse action will compromise the achievement of the targets and goals of the interagency operation. It is worth noting that, in certain contexts involving complex social problems, there will not be a clear and tangible presence of an adverse agent with the requirements described above. In these cases, we must work with the "conditions" that represent the antithesis of our targets and goals. These will provide material for constructing our scenarios in the next phase of IPP.

With the AdvAPs, as well as the information gathered from the SWOT Matrix (prepared in the previous phase), collaborators already have sufficient material to start elaborating the CA(s). CAs are alternatives, or different approaches, to achieving the desired outcome. Basically, they are a set of initial actions to be carried out by the participating agencies, aiming to achieve the desired outcomes and reach the established goals. Thus, they express the integration, coordination, and synchronization of all activities and tasks conducted by the collaborators. Typically, two Cas—that is, two response options—are elaborated to give decision-makers flexibility to choose the one they believe will best accomplish the mission. However, at CCOPI, the participants had great difficulty creating two distinct alternatives (CAs). When they finished elaborating the two options, they realized that they were not parallel paths leading to the same goals, but rather

11 Intention represents the belief about the adversary's purpose. It is dangerous to infer what the adversary intends to do, rather than what they might do. A possibility is an action that the adversary might take because they have the means to do so and have already gained credible information and knowledge that lead to this understanding (Brasil, 2020).

complementary ones. Therefore, the best thing to do was to combine them, rather than choose one of the options. This is due to the agencies' ability to act synergistically, accommodating all intervention possibilities within a single CA.

The next step now is to test and refine the CA(s), managing risks and uncertainties, within a wargaming technique called Scenario Planning.

4.1.5 Phase 5: Scenario planning

Scenario planning is a wargaming[12] technique that aims to test, refine—and, if necessary, compare—different CAs by simulating their implementation in specific scenarios. In the preliminary creation of these scenarios, probabilistic, trend-based approaches are employed to identify probable futures. Scenarios must be plausible, that is, there must be some basis in the present to suggest they could occur. There are dozens of different scenario planning methods, but what they all have in common is that they allow for imagining multiple possible futures and, thus, provide a framework for evaluating how to act in the present. Typically, in IPP, two types of scenarios are designed: the worst-case scenario (or the most dangerous scenario), and the most probable scenario. Based on these scenarios, two important activities are done in order to strengthen the response made for the problem faced: 1) risk management, and 2) the monitoring system.

Risk management is the process used to manage the risks present in interagency operations. It comprises the identification, analysis, assessment, and treatment of risks (threats). The identification and analysis stages consist of identifying risk sources, events, their causes, and their potential consequences, in an effort to understand the nature of a given risk. In the assessment, the risk is classified on a scale of probability of occurrence and severity of impact. In the final treatment stage, control measures are formulated, with implementation of mitigation or coverage actions, and subsequent monitoring of the effectiveness of such measures. Both mitigation and coverage actions aim to reduce the identified risk. The difference is that mitigation actions reduce the likelihood of a threat occurring, while coverage actions reduce the severity if the threat materializes.

Risks can be used to refine the CA(s) (response), and also the opportunities identified during the scenario planning (which were not previously identified in Phase 3 of IPP). Actions added to the response to explore existing opportunities are called exploitation, capitalization, or exploration actions.

Another activity done during Phase 5 is the development of a monitoring system. Its purpose is to support the assessment and monitoring of the plan after its implementation. Therefore, ways to measure changes in the operational environment must be identified, as well

12 According to Perla (1990), wargaming is a simulation based on modeled events that offers improvements to planning, such as: risk management; exploration of joint, combined, or interagency capabilities; uncovering of unintended consequences; hypotheses testing; development of trust; exploration of innovation; stimulus to "what if" questions; development and refinement of force structures and modus operandi, among others.

as specific information needed to infer whether such changes are occurring toward the desirable situation. To this end, performance and effectiveness measures and indicators will be created[13]. Performance measures aim to assess whether planned actions are being performed or maintained correctly (evaluate whether they are doing things right). Effectiveness measures, on the other hand, should analyze whether the expected effects from carrying out those actions are being achieved (analyze whether they are doing the right things). Indicators are specific pieces of information that infer the condition, state, or existence of something, providing a means, with reasonable reliability, to verify the performance or effectiveness of a proposed measure (Brasil, 2020).

It is worth noting that, starting in Phase 4—Response Elaboration—the planning team should also identify corrective or defensive actions to be taken during the plan implementation and monitoring, if any measures adopted in the monitoring system are not being met. Corrective or defensive actions serve as contingent measures—or a "plan B"—in the event that the initial measures fail.

Next, we will address the final phase of Stage I, which consists of formalizing and disseminating all the work done to that point to all participating agencies.

4.1.6 Phase 6: Decision and dissemination of plans and orders

Phase 6 of Stage I of IPP is marked by the formalization of the approach that will be adopted in response to the problem presented. If a single CA was developed in Phase 4, the formalization will be its description in a document called the Operational Concept. However, if more than one CA was developed, at this point the interagency team must decide, by consensus, which will be the best response to the problem. After the decision, the chosen CA will also be detailed in an Operational Concept.

Other documents may also be prepared at this stage, addressing specific aspects of interagency work, such as: logistics, financial administration, communication and control, civil affairs, rules of engagement, social communications, and intelligence, among others. After all the necessary documents for that specific situation have been drafted, they should be distributed to the representative agencies.

In general, plans and orders should be as succinct and objective as possible, as they are expected to be implemented without delay. The dynamism and complexity of the interagency environment itself encourages an adaptive and incremental nature to the plan, and if there is a need for improvements (and there will be), they will be carried out in Stage II—implementation and monitoring.

4.2 Stage II: Plan implementation and monitoring

This stage aims to ensure that the planned actions are appropriate to the dynamics of the problem and that they have the appropriate resources to be carried out. Therefore,

13 Performance measures and indicators are also known as *effort or performance measures and indicators*, just like effectiveness measures and indicators are also known as *results measures and indicators*.

the interagency team must monitor and support the plan implementation, ensuring the necessary resources and knowledge for effective decision-making. Resource availability is essential to the successful plan implementation. To this end, in the previous stage, special attention must be paid to the timely adaptation of the necessary resources in synchronization with the planned actions (according to the established priority). In other words, the timing of the actions must coincide with the time of mobilization of the necessary resources. Furthermore, a structure must be established to guide future actions as a result of necessary changes and adaptations. This is because the pattern of interagency collaboration is largely determined by the evaluation and adaptation of various actions to events as they unfold, which requires agencies to adopt a co-evolutionary approach.

There are two key requirements for this stage: monitoring and communication. Monitoring takes place through a process of rapid situation assessment, integration of multiple-source information, identification and correction of errors, and the ability to formulate adaptive responses. Communication plays a crucial role in the continuous monitoring and feedback process among participants, and in updating shared knowledge structures.

Feedback provided by field agents is essential for the follow-up of the operation, as this information serves as input for the monitoring system. Therefore, if the monitoring system indicates that one of the performance or effectiveness measures has not been met—according to a predetermined assessment level—corrective or defensive actions must be taken to ensure the plan remains on track with its targets and goals. For a critical analysis of the progress of planned actions, as well as of the results achieved within a given pre-established operational cycle or period, two daily meetings are held: the status meeting and the coordination and monitoring meeting.

This does not preclude other ad hoc meetings from being held throughout this stage, at the planners' and decision-makers' discretion. It is important that, during this meeting cycle, participants have access to tools that allow them to monitor, evaluate, and manage ongoing actions, and also redefine future actions.

The status meeting should clarify and help ensure that all participants understand the progress and evolution of the situation. Since the main purpose of this meeting is to provide a shared situational awareness for collaborators, hasty decisions should be avoided, as the information disclosed at this time will still be processed by each participating agency. Therefore, decisions should be left to the coordination and monitoring meeting.

The coordination and monitoring meeting occurs after the agencies have received the monitoring system information and have conducted a more in-depth analysis of the results. Therefore, it is at this meeting that decisions are made to adapt the plan to the dynamics of the situation. The purpose is to realign actions with previously established targets. When the need to adjust ongoing operations is identified, these improvements must be incorporated into the next operational cycle or period through a coordination order.

Finally, during the plan implementation, representatives from different agencies need to be in the same physical space and must be familiar with the tools and technologies designed to coordinate and monitor actions and share information and knowledge. This concern aims

to avoid what Comfort (2007, p. 192) calls "asymmetric and dysfunctional information processes." Asynchronous information dissemination occurs when different agencies receive critical information at different times and initiate their own actions without being aware of the impact it may have on other agencies or groups. Therefore, a central coordination cell—with representatives from all participating agencies—should be established during the plan implementation and monitoring, functioning as a "common knowledge base" to support collective action.

This cell operates by identifying the main sources of information, the main analysis and interpretation processes, and the main transmission routes. The flow of information is multifaceted, but becomes more efficient through a series of integrated analytical activities. Such integration is essential to: support the monitoring system by providing indicators to assess the plan progress; create uniform situational awareness for participants, and improve systemic decision-making. Furthermore, this cell enables, through timely search processes, information exchange and feedback, creating an interorganizational learning system.

Regarding its structure, it must be supported by appropriate technology and have a team with adequate capacity to process the volume of information received. Our proposed model is based on the "hub-and-spoke" architecture, with operational activities and information sharing coordinated by a central organization. This architecture reduces point-to-point connections, which can also mitigate the impacts associated with ICT limitations. In practice, this cell will function as a mini-fusion center, designed for information collection, analysis, and dissemination. The concept of "fusion" refers not only to the process of collecting and sharing information, but also to the physical facility in which this process takes place.

5 CONCLUSION

Interagency collaboration is becoming imperative for public administrators. Most social policy challenges exceed a single agency's capabilities and therefore new approaches to address them in an integrated manner are necessary. Given the need to operationalize a collaborative effort, this paper presented a proposal for an Interagency Planning Process (IPP), allowing different agencies to work with unity of purpose. This model was based on the Joint Planning Process (JPP), used by the Brazilian Armed Forces. However, due to the peculiarities of the interagency environment, it underwent some methodological adaptations.

The first was the inclusion of systemic perspective mapping with boundary critique to facilitate the process of problem framing and the definition of shared targets and goals. Developing an interorganizational understanding of complex social problems is vital to any successful interagency collaboration program. Therefore, it is essential to respect and consider the different—and sometimes conflicting—perspectives and values of the agencies involved in programs of this nature, seeking to generate a common understanding among participants.

The second adaptation implemented was the adoption of some dynamic adaptive process (DAP) tools to make the process more agile and flexible.

Several discoveries and lessons learned from the literature review were significant for formulating the IPP proposal. The starting point was the regulatory issues, which, although not directly linked to IPP, impacted its implementation in a considerable manner. Therefore, to provide psychological safety for collaborators, the political and strategic levels have to issue formal documents that guide the interagency collaboration.

Another essential finding for the IPP proposal was the urgency for collaborators to understand other participating agencies' mission, structure, culture, capabilities, and limitations. Hence the need to strengthen interagency capacity in non-crisis situations, intensifying training, educational programs, and integrated exercises among agencies.

Regarding the structure of the interagency network, it must be developed to explicitly promote interdependence, communication, and collaborative behaviors. Structures and processes that allow team members to establish behavioral predictability with other members, foster trust, and contribute to greater commitment to agreed objectives. Furthermore, the organizational culture must also be reformulated to assimilate the necessary transformations arising from the interagency environment. This highlights the role of senior leaders in stimulating practices that bridge cultural gaps, promoting activities that encourage people not to appropriate information at their disposal, and investing in training and easy-to-use ICT in favor of collaborative efforts.

Finally, regarding social factors, it was observed that participants may naturally want to collaborate, and the best organizational policy may simply be to create opportunities for them to talk and exchange information, opinions, and advice. Information and knowledge should be made available to all participants, at all levels, except when there is a proven need for confidentiality or privacy protection. This is because, in contemporary public management, the necessary information and knowledge to make good decisions cannot be fully centralized in a single decision-maker. Besides, high staff turnover must be avoided to exclude the possibility of losses of communication channels and reliability, which take time to consolidate.

Regarding the limitations of the research, several difficulties are faced in the attempt of making an accurate and reliable assessment of the success of interagency collaborative arrangements, their design, evolution, and impact. We understand that the IPP proposal in this work is an initial and experimental model, having undergone only one round of "observation, reflection, and change." Therefore, we cannot classify it as a tool that can be generalized to any interagency work, and further study is necessary. However, because action research is a method that allows for continuous improvement, the model should be reapplied, evaluated, and refined in future practices. To carry out reliable, comprehensive, and systematic evaluations, the suggestion is that future research analyze the use of IPP not only in courses but also in real operations that require interagency planning.

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