Understanding the dynamics of multisectoral policy: An examination of implementation networks and governance practices of tobacco control in India

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Abstract

Multisectoral action (MSA) has been a long-standing priority of health systems. The objective is to improve health status and health equity through policy implementation and organizational practice. The United Nations Sustainable Development Goals reinforced the realization that health inequities cannot be addressed by one sector alone. Despite the key importance of the need to work across sectors, there remains little evidence to indicate how these multisectoral processes actually function in implementation or in the local policy environment. This gap in our knowledge on local governance has repercussions for our understanding and influence on policy outcomes and effectiveness. Thus, there is a need to harness local level knowledge and create enabling environments at higher levels that nurture local, multisectoral governance.

In this thesis, I address and bridge this knowledge gap by mapping, understanding, and explaining the implementation of a multisectoral policy in health. Using the case study of the district level implementation of the National Tobacco Control Policy in India, I examine the multi-level context (national and state) and political processes to better understand how multisectoral action and governance practices at the local level are implemented. Furthermore, by detailing multi-level issues related to providing a supportive policy environment, this research aims to show how the more effective implementation of such important public health policies can have a better impact on outcomes.

The dissertation begins with a review of the literature on multisectoral action which goes beyond the health literature alone. The meta-narrative review presents a conceptualization and enquiry of multisectoral action across different applied knowledge domains in health, public administration, political science, and environmental sciences. Second, an analysis of the national and state-level policy context by means of a policy landscaping study of the National Tobacco Control in India was conducted, including a review of key drivers for collaboration. Third, a mixed-methods explanatory design study considers local implementation of multisectoral action in tobacco control in two districts in the southern Indian state of Karnataka. This district-level study maps the actual implementation structure, the key actors involved and the relationships between them using social network analysis (SNA) and then using a qualitative enquiry enables understanding of perspectives and experiences of

actors regarding their perceived roles and multisectoral governance practices using complexity-oriented network governance theory.

The overall thesis findings suggest that multisectoral policies and practices need to be supported by a nurturing multi-level (national and state) policy environment that provides adequate decision space and leadership at the local level, leaving space for experimentation and adaptation in line with local conditions. The district-level implementation highlights adaptive governance practices used to navigate hierarchical and authoritative structures. There is evidence of an early shift in these districts towards a more agile form of governance, which maybe more conducive to multisectoral implementation. At the national and state level, policy formulation and adoption require a collaborative effort through leadership across multiple levels and sectors. These processes are politically embedded; however, the presence of a legal framework, adequate implementation structure, advocacy and mobilization can provide momentum for national and state level action and support local level action and adaptation.

The research presented in this thesis contributes to a better understanding of a multisectoral policy's actual governance practices at a district level, in a LMIC context. The knowledge generated around policy implementation processes contributes to health systems and policy research and helps facilitate thinking and action on multisectoral policies in diverse LMIC settings.

Résumé

L'action multisectorielle (MSA) est depuis longtemps un pilier de l'organisation des systèmes de santé qui vise à optimiser la mise en œuvre et les pratiques organisationnelles afin d'améliorer l'état de santé des populations et l'équité. Les objectifs de développement durable ont renforcé la constatation selon laquelle les inégalités en santé ne peuvent pas être abordées par un seul secteur. En dépit de ça, il y a peu d'études qui permettent de voir comment ces processus multisectoriels opèrent dans l'implantation des politiques et le fonctionnement des environnements politiques. Cette lacune dans nos connaissances sur la gouvernance locale a des répercussions sur la compréhension de l'efficacité des politiques et sur leur mise en œuvre.

Cette thèse vise à combler ces lacunes en cherchant à mieux décrire, comprendre et expliquer l'implantation d'une politique multisectorielle dans le domaine de la santé. À partir d'une étude de cas de contrôle du tabagisme en Inde, l'étude examine le contexte multi-niveaux et les processus politiques afin de mieux comprendre l'action multisectorielle et les pratiques de gouvernance locales. De plus, en étudiant les enjeux liés à la mise en place de conditions favorables au développement de politiques dans un environnement multi-niveaux, cette recherche vise à montrer comment on peut maximiser l'impact de la mise en œuvre de politiques de santé.

La thèse s'amorce par une recension des principaux travaux de recherche sur l'action multisectorielle qui vise à approfondir la compréhension du concept d'action multisectorielle dans différents domaines d'études appliquées (santé, administration publique, science politique, sciences de l'environnement). La deuxième partie consiste en une analyse des contextes de politiques aux niveaux national et étatique dans le cadre de la mise en œuvre de contrôle du tabagisme en Inde, en ciblant les principaux facteurs qui favorisent la collaboration. La troisième partie examine l'implantation de contrôle du tabagisme dans deux districts de l'État de Karnataka. Cette étude au niveau local adopte un cadre analytique multi-méthodes pour illustrer la structure d'implantation et identifier les principaux acteurs et les relations entre eux, en utilisant un cadre d'analyse fondé sur les réseaux sociaux. L'objectif de la quatrième partie est d'expliquer d'avantage les agencements de ces réseaux, les

perceptions des acteurs et les pratiques de gouvernance multisectorielle en appliquant une théorie de la gouvernance axée sur la complexité.

La thèse suggère que les politiques et les pratiques multisectorielles ont besoin d'être appuyées par un environnement politique multi-niveaux favorable qui doit permettre l'expérimentation et l'adaptation en fonction des conditions locales. L'implantation des politiques au niveau local met en relief les pratiques de gouvernance flexibles qui peuvent s'adapter aux structures hiérarchiques complexes, plus propice à la mise en œuvre efficace de politiques multisectorielles. Au niveau national et des États, la formulation et l'adoption des politiques exigent un effort de collaboration et un leadership qui transcende les niveaux et secteurs administratifs. Ces processus dépendent des structures politiques, la présence d'un cadre légal, et la mobilisation des parties prenantes qui peuvent favoriser les actions nationales et étatiques, tout en appuyant l'action et l'adaptation au niveau local.

Cette thèse vise à approfondir la compréhension des pratiques réelles de gouvernance d'une politique multisectorielle, au niveau des districts locaux, dans le contexte d'un pays à revenu faible ou intermédiaire. L'amélioration des connaissances sur les processus de mise en œuvre des politiques contribue à la recherche sur les systèmes de santé et permet de mieux orienter la pensée et l'action sur les politiques multisectorielles dans divers contextes.

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Preface

Contribution to original knowledge

The research presented in this thesis shares an original contribution in the field of implementation and governance of multisectoral policies by advancing theory, practice, and filling a knowledge gap. It is a manuscript-based dissertation that includes four papers. It first explores the theoretical development, frameworks, and empirical enquiry in other disciplines on the complex phenomenon of MSA to develop clarity and seek better alignment between theory-building and applied research in health.

Using the case of the multisectoral National Tobacco Control Policy in India, the dissertation then interrogates and analyzes its policy evolution, adoption at the national and state level, and then focuses in on the mapping and documenting of implementation and governance practices at the local level. The national and state level landscapes trace the policy development, identifying important actors, their engagement and contribution in the policy process and point towards key drivers for collaborative action. The study of two districts provides insights on implementation networks by mapping the actors and their relationships, and then deepens the enquiry by delineating and documenting the adaptive governance practices at the local level.

This thesis makes a novel methodological and empirical contribution towards mapping and studying local level multisectoral implementation by framing and situating the local practices in a multi-level governance context (state and national).

Contribution of authors

I was responsible for the conception of the thesis and research design, as well as the analysis, interpretation, and writing of each manuscript included in this thesis. This is a manuscript-based thesis with four co-authored manuscripts. The study design, methodology and field data collection benefited from the close association and critical insights from Dr. Upendra Bhojani at the Institute of Public Health, in Bengaluru, Karnataka, the study collaborator in India. My research was also enriched by various stakeholder input, especially the State and District Anti-Tobacco Control Cell. The study supervisors and thesis committee members provided close oversight and guidance to undertake this thesis. I declare that the conception, analysis, interpretation, and writing of this thesis is my original doctoral work.

Manuscript 1: Learning from intersectoral action beyond health: a meta-narrative review

Shinjini Mondal, Sara Van Belle and Antonia Maioni

SM conceptualized the study and received inputs from SVB and AM. SM conducted the review, synthesized and wrote the initial draft of the manuscript. SM and SVB conducted the critical appraisal of the study, and AM provided oversight for the appraisal. SVB provided input on methodology. All authors provided feedback and approved the final version of the manuscript.

Manuscript 2: Policy Processes in Multisectoral Tobacco Control in India: The Role of Institutional Architecture, Political Engagement and Legal Interventions.

Shinjini Mondal, Sara Van Belle, Upendra Bhojani, Susan Law, Antonia Maioni

SM conceptualized and designed the study, developed study instruments, collected the data, conducted the analysis, and wrote the first draft of the manuscript. SVB, UB, SL and AM provided oversight for the study design, analysis and interpretation of the data, providing important intellectual content, editing and approval of the manuscript. All authors read, edited, and approved the final manuscript.

Manuscript:3 Using Social Network Analysis to Understand Governance within Multisectoral Policy: A Case of District-level Tobacco Control Program Implementation in India.

Shinjini Mondal, Upendra Bhojani, Samantha Lobbo, Susan Law, Antonia Maioni, Sara Van Belle

SM designed the study, developed study instruments, collected the data, conducted the analysis, interpretation, and wrote the manuscript. SLB helped with the data collection and interpretation. UB, SL, AM and SVB provided feedback on the design, analysis, interpretation, and writing of the manuscript. All authors read, edited, and approved the final manuscript.

Manuscript:4 Local dynamic decision space promoting adaptive governance practices in multisectoral tobacco control implementation: a mixed-methods study in India.

Shinjini Mondal, Sara Van Belle, John Porter, Upendra Bhojani, Samantha Lobbo, Susan Law, Antonia Maioni

SM designed the study, interview guides, collected data, conducted the analysis, interpretation, and wrote the draft manuscript. SLB helped with the data collection and interpretation. UB, SL, JP, AM and SVB provided feedback on the design, analysis, interpretation. All authors provided feedback and approved the final version of the manuscript.

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List of abbreviations

COTPA	Cigarettes and Other Tobacco Products Act
DLCC	District level Coordination Committee
DTCC	District Tobacco Control Cell
ENDS	Electronic Nicotine Delivery System
FCTC	Framework Convention for Tobacco Control
FCV	Flue Cured Virginia
HiAP	Health in All Policies
HIC	High-Income-Countries
ISA	Intersectoral Action
JUG	Joined-Up-Government
LMIC	Low-and-Middle-Income Country
MoHFW	Ministry of Health and Family Welfare
MSA	Multisectoral Action
NHM	National Health Mission
NTCP	National Tobacco Control Program
PIL	Public Interest Litigation
SNA	Social Network Analysis
SATC	State Anti-Tobacco Cell
SDG	Sustainable Development Goal
SNA	Social Network Analysis
UN FCCC	United National Framework Convention on Climate Change
UN-REDD+	United Nations-Reducing Emissions from Deforestation & Degradation
WHO	World Health Organization

Glossary

Actor: Any person who is regularly attempting to influence the subsystem affairs directly or indirectly (Jenkins-Smith et al., 2014 p. 190).

Decision space: *"decision space" as the range of effective choice that is allowed by the central authorities to be utilized by local authorities. This space can be formally defined by laws and regulations (and national court decisions). This space defines the specific "rules of the game" for decentralized agents. The actual (or "informal'") decision space may also be defined by lack of enforcement of these formal definitions that allows lower level officials at each level to "bend the rules."* (Bossert 1998)

Bottom-up Governance*: "The bottom-up approach takes the view that policy and action cannot simply be separated; hence, policy implementation is an essentially political process. It is concerned with the dynamism that bureaucrats and street-level service providers bring to the policy process. Bottom-up approaches to governance emerged as an antidote to rationalist, prescriptive, top-down models where policy is devised by elites and mechanically implemented by passive bureaucrats and service providers. Bottom-up approaches examine the active impact of public servants on whether a policy is successfully realized and demonstrate that policy making does not stop once a policy is approved because it is continually being remade as it is administered. Conflict and bargaining, previously seen as dysfunctional, are embraced as inevitable features of the implementation process.*" (SAGE Encyclopedia of Governance)

Civil society: *"including a wide range of social organizations such as civil society organizations (CSOs), non-governmental organizations (NGOs), private voluntary organizations (PVOs), plays a vital role as participants, collaborators, legitimizers and watchdogs to ensure effective policy implementation.*"(WHO 2001)

Complexity in Public Policy: *Represents the dynamism and actors in the policy area (formulation and implementation) who are continuously adapting and changing to arising evolutionary changes in the arena* (Geyer, & Rihani 2010).

District: the basic unit of health service organization in India. The district level represents the operational level where service delivery is coordinated, in line with the WHO's definition of health districts (WHO, 1987).

Governance: (1) "*the sum of regulations, including policies, programs and decisions designed to remedy a problem via a collective course of action, (2) the actors and processes that make up the collective course of action and (3) structures, including the comparatively stable institutional, socio economic and ideational parameters, as well as the historically entrenched actor constellations that shape policy processes in a particular contex*t" (Zürn, 2010).

Inter-sectoral action (ISA)/Multisectoral action (MSA): *"A recognized relationship/mandate for working with more than one sector of society to act on an area of shared interest, to achieve more effective, efficient or sustainable outcomes that is difficult to achieve by one sector alone. Actors may include government departments (such as health, education, environment and other social sectors); actors*

from civil society organizations and the private sector." ((Adapted from WHO (1997), Health Canada (2000), Perera (2006))

Multisectoral policy: A policy that seeks collaboration among sectors/departments/institution to take joint multisectoral action. Multisectoral policies are a tool to promote MSA. (WHO 2018)

Inter-sectoral convergence: Local term used in Indian context to represent ISA, defined as "*strategic and coordinated policy decisions and program actions in multiple sectors, to achieve a common goal*." (Ved & Menon 2012)

Implementation: *"[the] study of implementation is about how policy is put into action and practiced*" (Parsons 1995: 461). Focusing on processes and interactions between actors in inter-sectoral policy.

Macro level: "*macro-level analysis analyzes the architecture and oversight of systems*" (Sheikh et al 2011).

Multi-level governance: *"The multi-level governance concept contained both vertical and horizontal dimensions. 'Multi-level' referred to the increased interdependence of governments operating at different territorial levels, while 'governance' signalled the growing interdependence between governments and nongovernmental actors at various territorial levels."* (Bache and Flinders 2016)

Network: "*Networks are forms of social organization distinct from formal hierarchies– Network actors benefit from an exchange of resources that they might not have had access to in the absence of ties among them. They differ from formal hierarchies in their voluntary membership, relatively diffuse systems of authority, and the rarity of a formal contract that binds them together.*" (Shiffman et al 2015)

Non-governmental organization (NGO): "*A non-profit organization that operates independently of any government, typically one whose purpose is to address a social or political issue* (Oxford dictionary)."

Polycentric: "*Polycentric connotes many centers of decision-making which are formally independent of each other. To the extent that they take each other into account in competitive relationships, enter into various contractual and cooperative undertakings or have recourse to central mechanisms to resolve conflicts."* (Ostrom, Tiebout, and Warren 1961, 831)

Public Interest Litigation: *"a legal action initiated in a court of law for the enforcement of public interest or general interest in which the public or class of the community have pecuniary interest or some interest by which their legal rights or liabilities are affected".* (Black's Law Dictionary)

Top-down Governance*: "The top-down approach, described as an "iron fist" or "velvet glove" mode of governance, is characterized by a powerful, hierarchical state where a political elite devises policy that is then implemented through a strict, sequential, and stable chain of command via bureaucrats and service providers. It emphasizes national planning, rationality, command, control, obedience, and*

constraints, and evokes notions of red tape and bureaucracy". (SAGE Encyclopedia of Governance)

Chapter 1: Introduction

1.1Background

It is widely recognised that improvements in health and well-being depend on a wide range of social, political and economic developments (1,2). The collaboration across organizational and sectoral boundaries is widely recognized as a critical aspect of policies, programs, and interventions to address complex challenge in public health (3–7). This is partly because the determinants in a holistic vision of health are shaped by decisions beyond the health sector (3,8–10). As most social determinants of health fall outside the health sector, integrated action through partnerships and collaboration with sectors beyond health, defined as multisectoral (MSA), is paramount. Moreover, addressing these determinants of health is considered to be fundamental to improving health equity (11–13).

The Alma Ata declaration of 1978 recognized the attainment of health and well-being as a larger social objective (14), requiring action from social and economic sectors beyond the health sector itself. Health thus gained recognition as a social goal requiring sustained interaction and contribution from other sectors. The WHO 2008 Commission on Social Determinants of Health Report, *Closing the gap in a generation: Health equity through action on the social determinants of health* further widened the scope of multisectoral connectedness and action to address the gaps in inequity and emphasized coherence in policy making and action in the achievement of the larger goal of equity in health and well-being (11). These inequities in health are avoidable and arise because of the conditions in which we live, grow, age and work, and therefore collaborating with social sectors to improve health and well-being becomes imperative for the attainment of a better quality of life.

The recent global commitments made through the Adelaide Statement (2010) and the Helsinki Statement (2014) also highlight the need for a social contract between all social sectors for sustainable human development that leads to better health outcomes (15,16). These commitments endorse a ‘joined-up government’ and ‘Health in All Policies’ approach to promote partnerships across sectors and implement policy innovations through specific mechanisms and instruments for resolving the complex nature of achieving policy coherence.

Moving into the era of Sustainable Development Goals (SDGs) (2015), the recognition of the importance of collaborative partnerships across countries and

stakeholders has been further developed, well beyond the Millennium Development Goals (17). The comprehensiveness of the SDGs highlights the interlinked and integrated nature of the efforts needed across different sectors to achieve these goals. This requires that the health sector and its institutions pivot towards greater collaboration with other sectors. Partnering and steering the process of collaboration to achieve the common objective of promoting joint policies and programs that address population health require specific skills, knowledge, and instruments.

The problem addressed in this thesis resides in the implementation of a multisectoral policy; implementation is considered one of the most challenging terrains in the policy process. Public health systems and policies, especially in low-and-middle-income countries (LMICs), have often fallen short of the intended goals and strategies for multisectoral action due to implementation challenges and, so far, there has been little evidence to guide improvement (18).

1.2 Rationale

An in-depth understanding of multisectoral policy implementation processes is needed to understand how and whether these processes lead to change in the direction of improved service delivery, and how outcomes can be improved. In the policy literature, the factors affecting the implementation phase of policymaking have been summarized as: (1) clarity and consistency of objectives; (2) assumptions of policy makers or the policy logic; (3) implementer capacities, support from interest groups; (4) enabling socio-economic conditions; and, (5) enabling legal structures (19,20).

The WHO guide on implementation science uses theories, concepts, and frameworks to underline what, why and how interventions work in real-life settings (21). Implementation science equally stresses an understanding of 'real-world conditions', with particular attention on context, factors affecting the process, and results that can inform decisions on health programs, policies and practices (22,23). In the case of multisectoral policy, the analysis of such implementation processes and governance practices lead to a better understanding of 'how' these collaborations 'function', and overcame barriers to fulfil mandated roles and responsibilities (3,24).

In my doctoral research, I intend to contribute towards building knowledge on local level implementation networks and governance practices in a multisectoral policy, using the case of tobacco control policy in Karnataka, India. I engage with

stakeholders and policymakers to embed my research in context and, draw on lessons from lived experiences, practical knowledge, and the accumulated understanding of realities, using multiple methodologies. This thesis examines local level interactions and investigates how the creation of enabling environments at higher policy making levels can nurture local, multisectoral governance. In this study, I explore and document insights into the practices and negotiations that contribute to successful multi-sectoral action and also towards building evidence on how policies can be better implemented, to help further refine future policy directives and practices.

1.3 The policy context in India-priority for multisectoral action

In India, MSA is commonly referred to as 'inter-sectoral convergent action' or 'inter-sectoral convergence' and has been a long-held goal of policymakers. As early as the Bhore Committee in 1948 (26) and as recently as the National Health Mission (NHM) (2012-2017), it has been seen as a means of delivering equitable, affordable and quality health services (27). The NHM also recognizes inter-sectoral convergent action to address the social determinants of health and as a guiding principle for the mission (28). In India, health is a state-level responsibility; guidelines are formulated at a national level, but the application and implementation are affected at the state level. Each state is administratively divided into districts, which function as the organizational unit for managing and delivering social services, including health. Under the 73rd and 74th constitutional amendments of 1992, more importance has been given to the district level as the appropriate administrative unit for decentralized planning. Districts are considered to possess the required local knowledge of heterogeneous populations and the ability to provide a more manageable scope to conduct training and implementation relevant to local needs and with the capacity to increase productivity within organizations that would provide services (29). Districts also manage the implementation of all health policies and programs, provide resources and training, and monitor the delivery of services (28). The research for this thesis considers the district as the main unit of analysis.

The tobacco control policies and programs in India promote multisectoral action in their policy formulation and implementation. Implementation of these tobacco control policies requires coordination and cooperation between various ministries and their departments at national and subnational levels (30). At the national level, these policies demonstrate a good example of leveraging multisectoral action through joint

efforts of trade, taxation, production, and the implementation of tobacco control laws (31). India is also signatory to an international tobacco control treaty, the *Framework Convention on Tobacco Control* (FCTC), which requires and obligates the participation of sectors beyond health in achieving its goals (32). In implementing the National Program, the Ministry of Health coordinates and seeks cooperation from different ministries at three levels: national, state and district (33). Manuscript 2 of this thesis details the policy landscape at the national and state level.

1.4 Organization of the dissertation

This dissertation is organised into eleven chapters. The first chapter introduces the thesis. In chapter 2, I present a review of literature, define multisectoral action, identify the gaps and introduce the scope for study. In chapter 3, I present the overall research aim and objectives of the study. In chapter 4, I share the theoretical framing of research and research approach adopted in the dissertation. In chapter 5, I describe the methodology, detailing the methods for literature review, policy landscape analysis at the national and state levels and a mixed-methods explanatory study at the district level.

Chapters 6 through 9 present four manuscripts. Chapter 6 is a meta-narrative review across the knowledge domains of health, political science, public administration, and environmental sciences. Chapter 7 is a policy analysis of the Tobacco Control Program in India, at the national and state levels. It outlines the phases in policy formulation for adoption and highlights key drivers for collaborative action. Chapter 8 presents the district level implementation analysis in two districts, through the first phase of mixed-methods explanatory study design. It starts by mapping the implementation structure at the district level and identifying the key actors and relationships. Chapter 9 is the second phase of mixed-methods and follows through on previous findings, using qualitative methodology to understand implementation and governance practices at the local level.

In chapter 10, I provide a synthesis of findings from the four manuscripts, discuss implications for implementation and governance practices, and reveal the limitations of the study. In conclusion, Chapter 11 discusses the contribution of the thesis, draws conclusions for policy and provides future directions for research.

The Appendices contain the ethical certificates, permissions for the study, data collection tools, and bibliography.

Chapter 2: Review of literature

This doctoral research on the implementation and governance of tobacco control in India is informed by the advances in available thinking and knowledge on MSA. To anchor the research, the following section on literature review shares a scan of available studies and evidence particularly, (1) defining MSA for the purpose of the thesis; (2) the terrain of MSA, (3) the local level implementation considerations for MSA, (4) identified knowledge gaps and (5) the scope for further studying MSA.

2.1 Defining multisectoral action and its scope

For the purpose of the thesis, the term multisectoral action (MSA) for health has been adopted as:

"A recognized relationship/mandate for working with more than one sector of society to act on an area of shared interest, to achieve more effective, efficient or sustainable outcomes that is difficult to achieve by one sector alone. Actors may include government departments (such as health, education, environment and other social sectors); actors from civil society organizations and the private sector."
(Adapted from WHO (1997), Health Canada (2000), Perera (2006))

We will treat multisectoral action (MSA) and intersectoral action (ISA) as synonyms for the purpose of this thesis. Authors have proposed that, a successful MSA requires: (1) a willingness to participate; (2) the involvement of a diversity of actors; (3) the building of a common language for dialogue across actors; (4) establishing actual/effective work relationships among actors, and; (5) increased horizontal networking (34).

The process of collaboration relies on problem-solving, co-creation, and is supposed to minimize duplication, building on complementary capabilities, and the maximalization of resources and commitment (35). Collaborations across sectors have become increasingly desirable and necessary to address health and other development challenges and solve 'wicked' or complex problems (10,36,37). Numerous publications have highlighted the importance of MSA in addressing health equity (2,38); in public health practice, it has shown potential for local public health units to address social determinants of health and to play a role in reducing / addressing inequities (38).

Multisectoral collaboration allows for the leveraging of knowledge, combining the resources and expertise of multiple sectors, and innovating on public services to make them more responsive (39,40). Bryson et al. (36) argue that, at its core, MSA is driven by the inability of a single organization or sector to address a public problem or provide a solution, and hence the need to venture beyond a single sector. Providing multiple benefits and scope to address the complex needs of societies, these collaborations can bring people together from various backgrounds, strategies, and tactics from different institutions representing their institutional logic and background (36,41). Thus, the facilitation of such processes needs to be encompassed under a larger umbrella, with collective objectives and the provision of adequate financial and infrastructural resources across all sectors for common action (42–46).

In health, studies have explored MSA focusing on a particular policy/public health problem such as nutrition (47–51), primary health services (52), mental health (53), malaria (54), school health (55–57), maternal health (58), tobacco (59), alcohol and obesity (56,57,60). In another group of studies at the global level, the focus has not been on studying a particular health and policy problem but on the institutional arrangements for uptake and the promotion of MSA. These studies explored the conduciveness and implementation of health in all policies (HiAP) initiatives and their effect on equity (61,62), MSA and the role of local governments (63–66) and MSA for urban health and healthy cities (67,68). Attention to MSA has been articulated in public health research and practice (10,37) and, more recently, attention is being paid to multisectoral governance for health as a key interest (6,40,69,70).

2.2 The terrain of multisectoral action

Typologies to increase multisectoral engagements

Solar and Irwin (2) present four typologies of increasing engagement between sectors that are helpful to understand processes and mechanisms for initiating and implementing MSA. These start with (1) information sharing as a unilateral relationship where one sector reaches out to another. The other mechanisms of (2) cooperation and (3) coordination reflect higher levels of interaction wherein sectors work together towards optimizing their resources by engaging in a relationship. The coordination further needs to adjust the policies and programs to increase horizontal networking.

The highest-level mechanism according to this typology is (4) integration, which entails systematic engagement and integration of policy and program objectives, and the sharing of resources, responsibilities and actions. Effective engagement encourages all sectors to examine how their policy and programs can improve health and health equity.

Research studies have examined numerous propositions in MSA addressing the design and implementation of collaborative processes, such as the role of convener, the role of the champion or agent of change and their characteristics, the key points in negotiation between actors, and the elements of agreement and planning (35). Evidence from research focusing at the macro level, examining the architecture and oversight of systems, highlights political will, organizational commitment, support structures, and policy orientation for joint action as essential requirements for effective MSA (63). At the institutional level, analysis of the functioning of organizations and systemic interventions, the presence of social entrepreneurs and institutionalization of innovation in systems (49), and the building of capacities to support and influence other sectors to bring about change in the policy planning process (71) have shown to be important factors that enable MSA. The operationalization of MSA also requires the setting up of structures in the form of MSA committees, units and councils, which initiate processes for joint planning and evaluation, financial feasibility in the form of joint budgets, and clearly defined mandates through laws, policies and accountability frameworks (64).

What promotes multisectoral action?

Research examining multisectoral policy aiming to reduce health inequalities considers a shared vision, a strong relationship among partners, efficient structures and resources to sustain the collaboration and leadership to advance and steer the purpose as important for effective MSA processes (72). Similar elements were cited in a sixteen-country case study in European countries by WHO/Europe. Success factors included: (1) a sense of ownership; (2) a strong, trustful foundation within partnerships and collaborations from the beginning; and (3) ensuring that experts and civil servants were given autonomy to take action (73). Storm et al. (61) examining collaboration between the public health sector and other social policy sectors, identify: (1) the harmonization of goals, (2) a coordinated response, 3) the

formalization/institutionalization of collaboration, and previous experience as key factors to advance sectoral engagement.

To navigate the boundaries of MSA, the need for strong leadership has been documented; such leadership is commonly referred to as a social entrepreneur (74), a boundary spanner (75), a facilitator (76), or a champion (77,78). These are defined as people who can mobilize resources, both financial and human, who are inclusive and supportive, who engender trust, who enable communication and share information (55). Additionally, navigating the terrain of multisectoral collaboration requires skills for relation-building (networking), negotiation and conflict resolution. (76,79,80). Mutual training, learning, and a clear motive for collaboration have been identified as contributing towards successful collaboration (80,81). In contrast, recognition that some individuals may not be suited for collaborative practice (76) can help overcome challenges in the initial stages. However, Toohler et al. (78) caution against relying too much on individual level mechanisms (i.e. individual capacities of champions) and focus on institutionalization with support from local actors to enable changes in policy practice.

The sustainability of multisectoral collaborations also plays a critical role. Sharma and Kearins (81) highlight the importance of legislative and normative demands as push factors for MSA . They also highlight the need for conceptual clarification among collaborators regarding their underlying assumptions and values. Further, clarification of actors' ideas and perceptions on the collaborative process, mutual adjustment and space to reflect and share experiences are critically important. However, the authors also caution against naïve expectations as collaborations are nested within institutional ideologies and political process.

Though configurations of factors are context-specific (73), common enablers of multisectoral collaboration across the literature can be summarized as having a shared vision of problems to be addressed, strong relationship among partners, mutual and joint benefits, financial resources, effective communication, top-level involvement and organizational leadership, capacity building, time to build a relationships, and positive past experiences.

2.3 Local level implementation

Multisectoral action at local level

To enable the adoption of MSA in decentralized systems, implementation occurs at the national, sub-national and local levels. In this section, we focus on local level implementation, where service delivery and interaction of policy with practice ultimately happens, acknowledging that support from other levels are essential for local level action. We define the local level as cities, districts, and municipalities whose governments are uniquely positioned to provide leadership and initiate appropriate planning and action according to the unit's needs. Such local level studies are mainly from the geographic regions of Europe, especially Scandinavian countries, and North America (82).

Rantala et al. (64) did a scoping study and analyzed twenty-five cases of local level implementation. The authors found that presence of a clear mandate in the form of a law or policy, access to funds, a common understanding among stakeholders were common factors for facilitation at the local level. Similar findings were reported by Molnar et al. (83), where establishing a win-win strategy, which aimed for health gains without diminishing the primary intentions of the other participating sectors or agencies, facilitated implementation of MSA. Without common goals and sectoral incentives, multisectoral action in health is difficult to achieve (84).

Hendricks et al.(85), studying collaboration in local governments in the Netherlands, found that shared vision and common policy goals were essential and often the necessary first step. The study highlighted the importance of building capabilities for action to realize the multidimensional nature of the issue and develop effective communications. In local governments in Denmark(84), effective information flow, to establish routine communications was secured through establishing health networks. These networks acted as a medium to coordinate groups to the units in the municipality by establishing network focal points in all sectors. Since lack of awareness and knowledge can impede collaboration between sectors, these networks enhanced communication channels between sectors. The other common facilitating factors considered in the study were political support, public engagement, use of local media, and establishing a fund for health to support the program.

Local level action intrinsically linked to other levels

Local level implementation is deeply connected to national and sub-national policy topography and advances. Shipan and Volden (86) conducted an analysis of vertical policy diffusion from city governments to state governments while simultaneously examining the influence of state-to-state and national-to-state diffusion. They highlight the importance of local level implementation for overall policy success and the need to consider contextual factors since implementation within the local governments is often idiosyncratic to the setting (87). These local level dynamics are nested within the welfare regimes of states, devolution of powers to the local level, and the tradition of health promotion at the national level. Many local level studies originate from Scandinavia, where policy regimes have been social and democratic, focusing on healthy living, health promotion, and a larger measure of the redistributive effect of policies (88–90). In these countries, the presence of a Public Health Act legally mandates the delegation and deliberation of power to municipalities in planning, developing, and providing services at the local level (91,92). This responsibility provides a clear mandate to ensure and manage sectoral coordination, thus highlighting the role and connection between policy traditions and action at the local level (93).

Reviews and studies have also focused on national leadership to promote action at the local level, especially by promoting key strategies and implementation guidance and incentivization (94,95). National leadership is significant for success and sustainability since local actions may be limited by choices made at the regional and national level (92). Furthermore, it is challenging to address structural determinants at the local level as they are nested in a larger context and policy regime at the national level (64). Thus, local action is closely linked to national and sub national levels and national leadership can either inhibit or strengthen local efforts (94).

The synthesis of policy research on MSA identifies the importance of strong leaders and champions at all levels to maintain a joined-up spirit (96). While influencing political mandates, creating vision statements and mobilizing the policy environment may be secured at the national level, the collaborative practice for implementation is more advanced at the local level due to proximity and demand for responsiveness to local issues (97,98). Mannheimer et al. (99) further stress the importance of local actors' understanding and perceptions of the feasibility of implementation of national objectives. Thus, the local level represents a continuum of

the national policy focus and defines implementation. In general, local level implementation of multisectoral policy is facilitated by a local leader, dedicated resources, guidance, support, and training that creates clear roles and expectations, enhancing local accountability and ownership (82).

2.4 Considerations and gaps in multisectoral implementation

In decentralized health systems, effective MSA is dependent on multi-level (and poly-centric) action. The implementation of multisectoral interventions at the local level requires identifying the strengths of each sector and preserving their autonomy, building structures for decision-making, attaining a clear leadership and legitimizing support from government and participating institutions as necessary conditions for steering the process of collaboration (100). However, this desired MSA process remains inherently challenging. These interactions often have implications on the integrity and autonomy of each participating sector (2), as MSA builds interconnectedness and brings powerful stakeholders together. The context of initiation, interests and incentives for each sector or stakeholder (99,101), the challenge of reaching consensus on tasks at hand (102), uneven levels of expectation, ambition among sectors, lack of ownership and unclear roles and objectives (65) all make the governing process of MSA an arduous task.

Such collaborations are time and resource intensive, and are inherently fragile, requiring management and steering, coordination, reciprocal obligation, and trust between actors (103,104). The likelihood of conflict in these collaborations is high, as they are often associated with shifting responsibility, lack of accountability, and the power dynamics between sectors (105,106). Issues related to trust and conflict resolution are nested within competing institutional logics, which actors and institutions use to legitimize their decisions (76). The interplay between these logics has been referred to as a difference in philosophies for foci for action, and significantly influences multisectoral collaboration (81,107). Thus the process of collaboration is consequential and related to the successfully negotiation of actors (108).

Overall, MSA can be defined as a dynamic and multi-layered process. Although research has described 'what works' in collaboration across sectors, the process of navigating through a partnership remains complex and challenging. Policy studies have mainly articulated the strategies for MSA, the need for structural support through

joint financing mechanisms, levels and types of human resources involved, joint planning and evaluations, organizational structures, and the requirements of supportive laws, policies and legislation, but they have not reported on how the process of forming these associations unfold (109). While the case for multisectoral collaboration has been widely established, there has been limited clarity about the actual process of collaboration (36,110). The focus has been mainly on describing key requirements that determine success and on the outcome of multisector collaboration, with a limited explanation of the process and its execution in practice, particularly when multiple levels of government are engaged. Thus, the challenge remains to better understand policy processes around implementation of multisectoral policy that can guide the practice (36,110).

2.5 Scope for studying multisectoral implementation

MSA is not a new exploration; there have been advances in theoretical and empirical research in the domains of public administration, health and development. The more recent reviews on collaboration by Bryson and Crosby (36) reveal that, although much has happened, not much has changed, and the process of collaboration remains complex. The case for MSA has been established, but the focus has not been on the actualization of the process. The majority of policy-oriented research and publications describe MSA for solving complex problems but fail to report on how this process unfolds and is being adopted (35,76). Thus, more research is required to guide better understanding this dynamic practice of implementation (66).

To better understand this complex, multi-partner and multi-layered implementation process of MSA, recent reviews have suggested exploring and using in-depth methodologies to unpack the "taken for granted" process of collaboration by different sectors (87). Analysis of such processes could lead to a better understanding of how such collaboration overcomes barriers and functions within the roles and responsibilities undertaken by the various sectors (3,24). Reviews have also noted that, despite the complex nature of such interaction, most research has focused on the perspective of one sector, mostly health, and more work is required to understand the approaches and perspectives from multiple actors to facilitate an inclusive understanding (34). Furthermore, MSA governance has become a key area of interest

(6,40,69) especially given the fluidity between the national, sub-national and local levels and the ability of each level to influence the other (6,86).

My doctoral research will contribute towards the construction of new knowledge by generating evidence, uncovering the process of implementation of multisectoral policies by through the lens of multiple participating sectors, using multiple methodologies, using the case of implementation of tobacco control policies in two districts of Karnataka, India. The main research question I seek to answer in my dissertation is: How do different sectors (individuals/institutions) work together to implement tobacco control policy at a local level? And what are the governance practices at the local level that steer MSA? The research also studies the policy context at the national and sub-national (state) level and draws inferences for create enabling environments at higher levels that nurture local and multisectoral governance.

Chapter 3: Research Aims and Objectives

3.1 Study Aim

This study aims to map, understand, and explain local level implementation networks and governance practices in a multisectoral policy in health, using the case of the tobacco control policy implementation in Karnataka, India.

3.2 Study objectives

The overall study aim translates into the following four specific objectives, respectively:

1. To review and **identify** the theories, including theoretical development based on empirical examples of MSA in research traditions beyond health, that can inform approaches to research on MSA in the health sector

2. To **map** the prevailing laws and policies that formally guide the implementation of tobacco control programs at the national and state level in India; to **describe** the context and processes of tobacco control measures, their evolution at the national level and adoption at the state level; and to **identify** the enablers, drivers, and challenges in the Indian policy context.

3. To map and **explore** the local implementation network architecture, the actors and relationships, and how are they connected, at the district (local) level of implementation of tobacco control policy in Karnataka, India.

4. To **explain** how different sectors work together to implement tobacco control policy at the district level in Karnataka, India. Describe the local level governance practices for MSA.

Chapter 4: Theoretical Frameworks and Research Approach

In this chapter, I detail the theoretical framework and approach adopted in this study on the implementation of a multisectoral policy. I approach MSA from three theoretical perspectives:

- Policy implementation: the locus and focus of action
- Multisectoral policy: a networked implementation structure
- Multisectoral implementation: governing networks and steering

In my research, I apply these theoretical propositions which were developed and explored in high-income-countries (HIC). These propositions are the latest analytical innovations available.

4.1 Policy implementation: the locus and focus of action

Implementation has been defined as ‘what happens between policy expectations and (perceived) policy results’(111). It is often defined as a ‘locus and focus of action', where a range of activities and function takes place and interaction of the policy with implementing organizations or agency also come about (20). Theories of policy implementation are concerned with understanding processes and are conventionally divided into top-down and bottom-up approaches (112). Top-down approaches consider how centrally defined goals are implemented in complex systems by statutory or voluntary mechanisms such as intra-governmental coordination, agreement on objectives, and appropriate sequencing (113). Bottom-up perspectives focus on the extent to which central mandates are implemented in practice and often highlight the many ways in which sub-national and local actors adapt or shape policy. Barrett and Fudge (25) and Elmore (114) further argue that there is no reason why the perspectives of policymakers should automatically be adopted by policy implementers since, in many instances, action precedes or predates policy. The policy may be a response to pressures and problems experienced on the ground or may be developed to control or build on an existing practice or phenomenon (25,114,115).

Today, the discourse around the implementation process in health policy and systems research no longer argues or questions the legitimacy of actors at all levels to influence policy, but instead highlights understanding the roles of different actors, the contexts that guide their actions and interactions, and processes that lead to the policy implementation gap (20,116).

With the understanding of the growing influence on implementation by multiple actors at multiple levels, decision-making and power distributed among governments and societal players, the conceptualization of implementation research has broadened. Implementation is no longer seen narrowly to the exclusion of other forms of action and other levels of influence on the delivery of programs and interventions. This has given rise to a focus on 'how systems of governance deliver policy-relevant impacts' (117). This broader conceptualization is designed to incorporate a comprehensive understanding of the multiple levels of action that can influence performance (20,117). A governance approach emphasizes the multi-layered, multi-faceted context of rule- and norm-governed realms, along with the role that multiple actors play in the areas of negotiation, implementation, and service delivery (117).

Both in health policy and political science research, which involves a multiplicity of actors, the focus has shifted to policy networks, and there is now a keen interest in social network analysis in implementation studies (20,117–119). Given the polycentric nature of today's wicked policy issues, where the foci of action are at multiple points and levels, network analysis is especially important, as it is grounded in a social complexity perspective, (120) that is ideally suited to capture these network-level activities.

Governance is a suitable lens for MSA as it enquires process of interaction between different stakeholders, both state (different sectors and levels of jurisdiction—federal, state, local) and non-state entities (including private corporations and citizens' groups), and these interactions and shape pluralist health systems and the delivery of health services. Authors have also argued that at its core, MSA generally requires the aligning of goals and common visions, requiring mediation of relationships across diverse actors having distinct values and mandates.(18).

In this research, I incorporate these above-mentioned considerations and have included a policy landscape analysis that describes actors at the national and state level, non-state actors and their respective roles and responsibilities. I then further explore the context of implementation at the district level by analyzing networked governance structure and practices. Finally, the thesis considers a multi-level governance approach related to the integration and dependence between administrative levels and sectors, and the corresponding development of new governance strategies to solve today's policy problems.

4.2 Multisectoral policy: a networked implementation structure

Multisectoral action is characterized by joint working arrangements across institutions and policy sectors through forming effective linkages and developing coordination mechanisms to work towards a common policy goal. The structural arrangements for such an implementation process in an actor-oriented perspective match well with networks in actor-oriented policy analysis. The interaction of these networks in policy processes can determine the success or failure of a policy (121). Shifting the unit of analysis from a single organization or actor to the level of the network and its structural characteristics improves the investigation of patterns of linkages, factors, and determinants. The changing policy environment, and an increased need to work closely across sectors and institutions means that the network approach enriches our learning, and its insights could potentially lead to better implementation of multisectoral programs and policies.

The concept of networks in policy studies can be traced back to the 1970s. In implementation studies, this approach was used by Hjern and Porter as a 'bottom-up approach' (122). They explained that programs are rarely implemented by a single organization, but rather by subset of members organizations working on the program with a range of goals and motives, identified as 'implementation structures.' These structures are organized around specific programs in which specific organizations and actors perform specialized roles. Studying these structures is necessary to understand the principles and practices of policy implementation. The concept of networks was further developed in implementation studies by Scharpf and Hanf (124). They described the monistic perspective of policy analysis in inter-organizational studies as restrictive, since the issue itself is characterized by a plurality of separate actors with specific interests, goals, and strategies (123). This argument also suggests that networks may be a factor in the 'implementation deficit,' which remains central to policy studies.

Scholars and practitioners have widely recognized networks as important in multi-organization governance, since coordination promotes enhanced learning, increased capacity to plan and take action, and the pooling and efficient use of resources (124,125). Networks are ideal forms of conceptualization when complex issues demand multilateral coordination and require more than the goals of an individual organizations (126).

4.3 Multisectoral implementation: governing networks and steering

Multisectoral policy implementation is characterized by mutual dependencies, cooperation, and coordination to achieve policy goals (123,127,128). These interactions among organizations are clustered around the available resources and the nature of policy or program. Hence, these networks can be identified as patterns of interactions and relationships that develop around policy challenges or programs (129). The actors engage in a series of interactions based on available resources and are guided by a set of rules (130). Resources include financial capacity, authority, legitimacy or knowledge and the rules as interpreted by actors, and strategies that are selected based on the perception of actors and the nature of desired solutions.

The networks manifest architectural complexity as the traditional hierarchal authority is challenged in a multisectoral setting, and the need to form horizontal relations and a distinct type of governance; i.e. network forms of governance are based on the exchange of resources and trust rather than top-down command and control mechanisms (131–133). In the network literature, governance refers to the horizontal interactions by which various public and private actors at different levels of government coordinate their interdependencies in order to realize public policies and deliver public services (134).

The concept of governance of networks is useful for analyzing the interactions among actors in implementing a multisectoral policy. Given the non-hierarchical nature and tendencies for non-agreement or conflict, the central question within the network approach is how concerted action between actors is established around a concrete issue. Since cooperation and collaboration of goals and interests do not happen automatically, the steering of complex relationships in networks has been identified as a necessary condition (135). Steering strategy refers to network management and is mainly focused on improving collaboration between involved actors (136). The conceptualization of this 'networked form of governance' is more suitable for solving complex problems that require cooperation and span different organizations and sectors (120,137).

Chapter 5: Methodology

In this chapter, I provide an overview of the research design and methodological approach. I then explain my epistemological position, share aspects of my positionality and of reflexivity, and finally describe the opportunity that emerged to enable the conduct of the field research. Detailed methodologies are described for each aspect of this research in the respective manuscripts (chapters 6-9) presented in the thesis.

5.1 Research design

The design for this thesis research incorporates multiple methods that combine meta-narrative review, policy landscape analysis and a mixed-methods case study to investigate the implementation of multisectoral policies, using the case of tobacco control policy in India.

5.1.1 Meta-narrative review

MSA has been referred to as a wicked or complex issue in policy research (138). Wicked problems can be recognized by their uniqueness, social complexity, interdependence and the inputs of several actors and multi-causal factors, with no definitive, one size fits all solution proposed (138). Understanding the theoretical development and empirical enquiry in other disciplines dealing with socially complex phenomena can enhance their application in health studies (139). Thus, a meta-narrative synthesis methodology (140) was adopted to better comprehend a complex topic by understanding commonalities and contrasts across disciplines(141), hence promoting a basis for cross-learning. This involved the collection of insights from political science and public administration domains that are rich in theory, and the empirical evidence on complex policy challenges from MSA adoption in the environmental sciences. The review methodology provides a unique tool for synthesizing vast and complex evidence for policy processes (139).

5.1.2 Policy landscape analysis

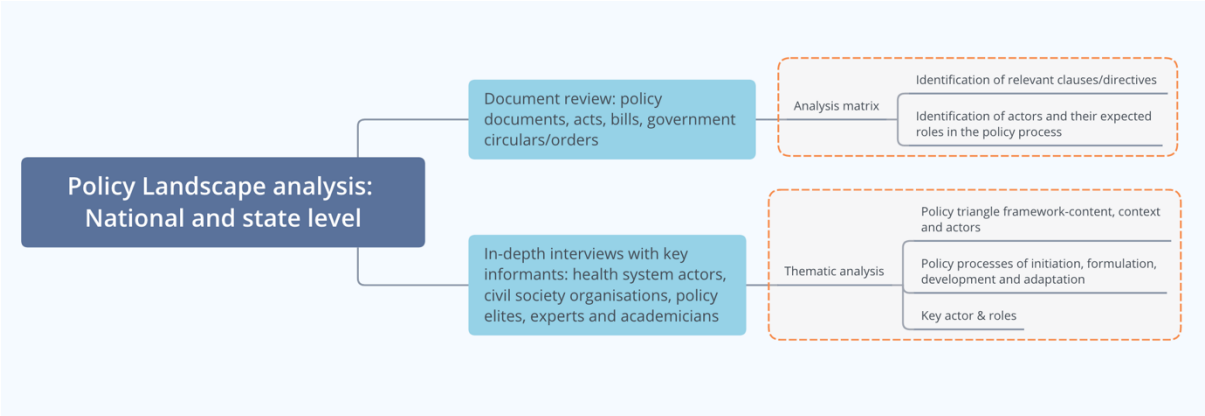

Figure 5. 1: National and state level policy landscaping study

A policy landscape analysis (142)(manuscript 2/chapter 7) was undertaken to examine the multi-level policy context of tobacco control policies in India. This analysis focuses on the policy process of development at the national level, and adoption and adaptation at the state level in Karnataka. I focus on describing the context, and the role of key actors in leading and influencing policy decisions, detailing the processes involved. I reviewed policies, bills, acts and their amendments, national and state level government orders and guidelines, and conducted interviews with national and state-level actors to explore the evolution of policies and their bearing on current practices. I used the health policy triangle(116) and a deliberative policy analysis approach (143) to guide the research. The framework of Berlan et al. (144) was adopted to analyze the policy process in a non-linear manner, capturing the dynamics of policy processes. Finally, I use a 'Collaborative Governance' framework (145) to extract the key drivers that set the direction which oriented collaborative practice.

5.1.3 Mixed-methods case study design

The first phase of empirical research captures the evolution of tobacco policies, current policies and actors involved in the policy process, thereby providing the macro policy context (146) of tobacco control policies at the national and state level. In this phase, I focus on implementation at the level of two administrative districts using a mixed-method design (147). This design provides the scope to extend the depth of enquiry using different methods to achieve a more robust and plausible explanation. It has

been suggested that mixed methods can potentially provide a comprehensive understanding of a problem and potential solutions (148).

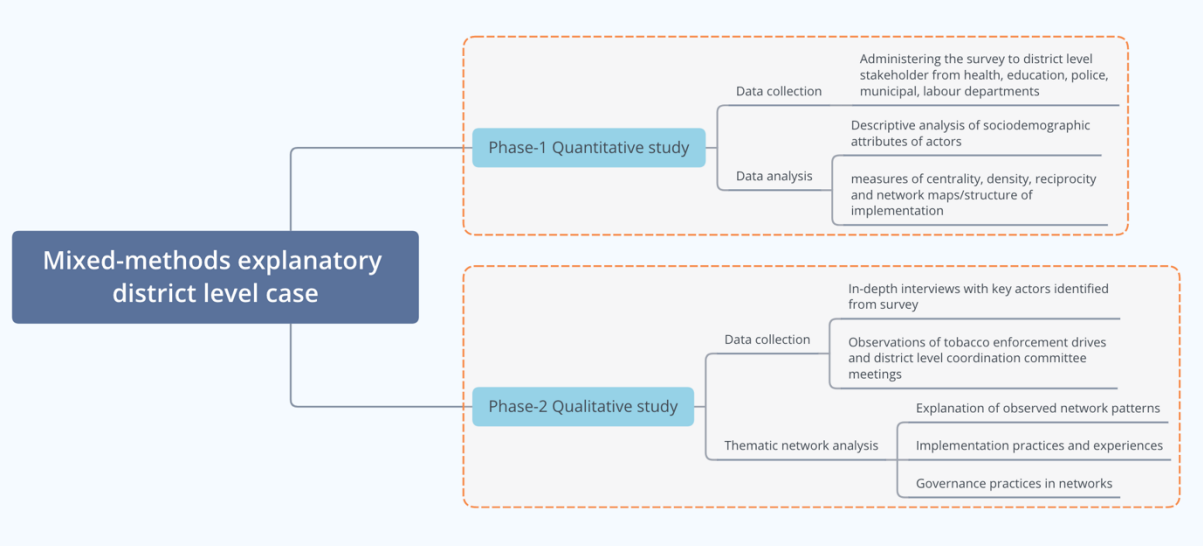

Figure 5. 2: District level mixed-methods explanatory study

I use a mixed-methods sequential explanatory design, where a qualitative enquiry follows quantitative enquiry (147). The primary intent for a sequential design is to use a qualitative enquiry to explain quantitative results and to shed light on why and how quantitative results may be explained. The first phase consists of quantitative Social Network Analysis (SNA) using R software (Version 1.3.1093) to shed light on the structure of implementation network(s) in each district and to map patterns and measure the strength of relationships between actors (149). In the second follow up qualitative phase, I explain observed SNA patterns, and document practices on how the networks function are maintained and steered. I also provide joint-display tables with quantitative and qualitative findings to integrate data in mixed methods (150). This allows for a more comprehensive understanding by mapping and explaining local level implementation networks.

Phase one (quantitative): A social network analysis – mapping the network patterns

The first phase of mixed-methods research begins with a social network analysis (SNA) (manuscript 3/chapter 8) to identify the network actors and their relationships. Due to the multiplicity of actors both within and across organizations, the research

starts with a mapping exercise to identify the key actors and relationship between them.

SNA can be defined as a "distinctive set of methods used for mapping, measuring and analyzing the social relationships between people, groups and organizations"(151). In SNA, the relations and patterns formed are characterized by a set of nodes (or network members) and connected by one or more types of relationships (152). The analysis is grounded in a core concept which views actors and their actions as interdependent rather than independent or autonomous. These relational ties between actors act as channels of interaction or means for the flow of resources. Hence the unit of analysis is not the individual but rather the entity or network consisting of a collection of institutions, actors and their linkages. These networks include formal and informal self-organization elements by individuals as well as formal structures mandated by institutional positions, rendering them more dynamic in nature (153) and making such networks difficult to assess. Network mapping, however, in a form of SNA allows for the inclusion of formal and informal components to explore patterns of relationships, power structures, and resources within a policy process (149) and can be used as a more robust analytical approach to analyze the architecture of implementation networks. Hence, SNA serves to analyze the influence exerted by networks by providing a flexible and rigorous tool for mapping and quantifying relationships and multi-organization structures within a multitude of contexts.

Phase two (qualitative): Explaining the network patterns and practices

This qualitative phase provides a deeper understanding of the implementation network by explaining observed patterns and characteristics identified in the first phase, and documenting network governance and steering practices. Ball et al. (154) concede that while the network analysis is an essential tool to articulate the number of relationships and their potential strength as emphasized by the thickness of connections and the direction of arrows, these quantitative measures do not capture the quality of relationships within the network. Provan et al. (155) suggest that complementary methods of investigating network quality, such as interviews and observations, are required to provide a more robust explanation of network characteristics. Hence, a qualitative methodology is added to provide more valid and nuanced data of actual experiences, contributing to explaining network patterns and

practices for governing the implementation of the policy (manuscript 4/chapter 9).

5.2 Epistemological position and world view

In this study, I seek to map, understand, and explain how implementation networks function. The interactions between different actors, and distinct interpretations of the policy and its objectives, together with their own interests and perceptions muddle the path to multisectoral policy implementation and make it unpredictable.

This leads me to the epistemological position of my study. The underlying research paradigm in this study is social constructivism (156). Constructivism is usually and frequently associated with inductive qualitative studies. However, in mixed methods studies, the loop effect is created between empiricism and constructivism, presenting a terrain of "both socially constructed yet real" phenomena (156). Actors implement these policies from various positions guided by institutional architecture; but implementing based on their own interpretations and thus are the "interactive kinds" (156,157). These actors in real-time interpret, negotiate, adapt, and implement the policies and create a looping effect by transforming policies into actual practice based on a positive or negative reinforcing effect.

This epistemological stance can be traced throughout from mapping and exploring the policy implementation structure of the network to explaining the governance practices. As a method, quantitative social network analysis can make the invisible and hidden actors visible in the network and map and bring out the actual relationships among the actors. Through in-depth interviews and participant observation, the qualitative phase uncovers the actual practices, experiences and “sense-making” of implementers and documents the processes through which implementation takes place in the field.

5.3 Researcher interest, positionality, and reflexivity

The role of a researcher in the research process, both as an actor who collects the data and during the analysis process, is very well-acknowledged (158). I was born in India and spent my life there before coming to Canada to pursue my PhD in 2016. From 2010-2016, I worked in India on multiple health systems research projects in partnership with state governments and community organizations in a reputed Indian public health research institute, which partnered with many states and the national government. My exposure and experience of working with multiple ministries, sectors

and partners made me recognize the complexities and challenges of different sectors working under a single mandate. While working on my last research project (2014-2016) with Village Health Committees (VHCs) in two states in India, I realized the challenge of implementing a multisectoral program on the ground. These committees in India function with a multisectoral mandate to provide health, water, nutrition, and sanitation services at the village level. A lack of unity and coherence between institutions made it difficult for the VHCs to achieve their full potential to work across sectors (159). In yet another research project in the state of Chhattisgarh, India (2012-2014), I worked on the convergence between the health and nutrition departments to improve program outcomes. The evaluation of the program suggested that modifying the governance structures and integrating them contributed to better service delivery (160). These experiences have led me to explore how the actual practice of working across sectors can be strengthened, and better governed and supported to achieve better health outcomes.

This research has gradually evolved through my PhD program, where I was introduced to mixed methods design and the use of methodologies such as SNA. During my coursework, I was able to test these propositions and incorporated them in the methods and design of the thesis. During my PhD, I was also exposed to a body of literature on network governance, inter-organizational studies, and ways to seek coordination and cooperation through insights from public administration and political science. I participated in the International Conference on Public Policy in 2017 and 2019, where I attended a training session for PhD students and session led by Prof. Guy B. Peters. Prof. Peters has done decades of work on governance, public management, and coordination in whole-of-government approaches. This motivated my first manuscript to undertake a meta-narrative review to understand the theory and application of MSA across different domains of knowledge, including public administration. I also used these concepts to conceptualize my research and advance the analytical application.

In health policy and systems research, it is important to share how a researcher is situated in the research process, their research base, background, perceived legitimacy and involvement in policy communities (161). This is considered important as access to these policy spaces and actors is often limited. Positionality becomes important because science is not value free. My perspective as a researcher is that both of an insider and of an outsider (emic-etic). My previous experience of working in

health care settings and living in India gave me an insider perspective and insights in the embeddedness of the research and a legitimacy to engage with research in the Indian context. However, I can also be regarded as an outsider as I have not worked within the Karnataka health system or engaged with tobacco control policy research. This challenge was overcome by working with the local partner institute, the Institute of Public Health (IPH) in Bangalore. The feasibility and support for the study were discussed during an exploratory visit in July 2017. IPH is a premier institute for training and research in health systems in India. With a vibrant multidisciplinary research team, IPH focuses on health policy and services, health financing and universal health coverage, health equity, health governance, infectious diseases, and chronic health conditions. At the state level, in Karnataka, IPH has supported tobacco control measures such as implementing the national tobacco control law, the chewing tobacco product regulations, and the taxation of tobacco products. IPH provided me with an honorary associate affiliation and introduced me to policy elites at the national and state levels, facilitating my entry into fieldwork and enabling me to collect data. At the state level, we jointly worked on meeting the members of the state anti-tobacco cell responsible for implementation at the state level.

My research proposal and study design were reviewed and approved by state officials, and I was given permission to conduct the study. I also had permission from the Health Management and Screening Committee at the Indian Council of Medical Research (ICMR) because, as a foreign student, I required permission to conduct research in India. The proposal and research plan were reviewed by the scientific committee at ICMR and duly approved.

IPH also facilitated my fieldwork between July 2018 and August 2019 by helping me to understand the history of tobacco control measures, interventions at the state level and their experience of engagement with implementing the program, especially during the early phases of implementation when the program was scaled up across all the districts. The daily interaction and informal chats with the IPH team helped to develop a deeper understanding of the program and explore the nuances in my research enquiry. The IPH also facilitated the hiring of a local research assistant. I conducted fieldwork for data collection across two districts in Karnataka for more than a year. I required permission from District Health Officer, the highest administrative health officer at the district level. He issued a letter of support for the study based on my state permission to all participating departments in tobacco control to provide me

with the required data for my study. The district-level tobacco control units further supported me by introducing me to different actors across different departments. It was initially challenging to approach different departments as they were often busy with their work but with the support from the district team, and with interactions over time, I was able to collect the required data. I was also offered the opportunity to sit with the district team in both districts and follow them in performing their daily activities. During fieldwork, I kept a diary to note my daily observations and to further reflect on them. During the data collection process, the research assistant and I engaged in a daily debriefing session to reflect on the process of data collection and emerging findings from the interviews, which helped develop enquiries for subsequent interviews.

I also presented my preliminary findings to the state team to get feedback. The initial observations from the field were in line with their experience of implementing the program and proved to be a validation check for my preliminary findings and helped me interpret my findings adequately. Thus, my research uses perspectives from insider and outsider, where the outsider perspective enabled me to explore the unknown domain with curiosity and ask obvious questions to understand meanings and perspectives. In comparison, the insider advantage was gained by engagement with IPH, state and district teams and a prolonged duration of fieldwork. It is often considered that policy research needs to combine both perspectives to yield a rich and most comprehensive understanding of the policy process (162).

5.4 Statement of Ethics

The research project received ethical approval (IEC-ER/01/2018), renewed annually, from the Institutional Ethics Review Board at IPH. It also received ethical approval from the Faculty of Medicine Institutional Review Board at McGill University (A05-E24-18B). Each of the study objectives for manuscripts 2-4/chapter 7-9 was approved by the ethics board. No ethics approval was required for manuscript/chapter 6, a literature review of previously published research.

The study involved minimal risk to the participants. It explored the knowledge and experience of stakeholders in engaging and implementing the tobacco control program and did not disclose sensitive information or engage with vulnerable groups. However, protecting the identities of the participants and maintaining anonymity

throughout the research and its outputs were essential. For this purpose, to describe the key actors and organizations engaged in the policy process in manuscript 2, umbrella terms were used such as *technical support organization*, *research organization*, *NGO* without mentioning the individual names of organizations and individuals. At the district level, I chose to anonymize the districts, identifying them as district 1 and 2. As each district has a single unit of tobacco control and other departments also have specific designations for each district, mentioning the district names could potentially risk revealing the identity of the respondents. However, for the SNA analysis in manuscript 3, I had to collect the respondents' names and the names of their support contacts, as it is an essential part of the SNA methodology and identifying information is required for understanding the ties between different individuals. Hence, I de-identified and assigned numerical codes for each actor while entering, storing, and analyzing the data. All presentations and publications present anonymized data, removing names from network maps.

For all the manuscripts, the research participants provided written consent. The research participants were reminded that their choice to participate was voluntary, and they could choose to withdraw from the study at any time. However, no participant chose to withdraw from the study.

Chapter 6: Learning from intersectoral action beyond health: a meta-narrative review (Manuscript 1)

Preface

This chapter is the first manuscript of the thesis and provides an overview of the theoretical developments in MSA. The first research question of the thesis was aimed to review and identify theories, and their practical application in different research traditions. The review followed a meta-narrative methodology, engaging the disciplines of political science, public administration, environmental and health sciences to seek a better alignment between theory-building and applied research. The main aim of the manuscript is to strengthen the relevance of insights for empirical and implementation research. This is the first meta-narrative review undertaken on MSA and inspires the theory-building for this thesis. Insights and applied concepts from this manuscript are further explored in the empirical studies at the national, state (manuscript 2/chapter 7) and district level (manuscript 3-4/chapter 8-9). Finally, the discussion section (chapter 10) also draws on and explores the multi-level governance concept identified in the review.

Manuscript 1: Learning from intersectoral action beyond health: a meta-narrative review

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Abstract

Intersectoral action (ISA) is considered pivotal for achieving health and societal goals but remains difficult to achieve as it requires complex efforts, resources and coordinated responses from multiple sectors and organizations. While ISA in health is often desired, its potential can be better informed by the advanced theory-building and empirical application in real-world contexts from political science, public administration, and environmental sciences. Considering the importance and the associated challenges in achieving ISA, we have conducted a meta-narrative review, in the research domains of political science, public administration, environmental and health. The review aims to identify theory, theoretical concepts, and empirical applications of ISA in these identified research traditions and draw learning for health. Using the multidisciplinary database of SCOPUS from 1996 to 2017, 5535 records were identified, 155 full-text articles were reviewed, and 57 papers met our final inclusion criteria. In our findings, we trace the theoretical roots of ISA across all research domains, describing the main focus and motivation to pursue collaborative work. The literature synthesis is organized around the following: implementation instruments, formal mechanisms and informal networks, enabling institutional environments involving the interplay of hardware (i.e. resources, management systems, structures) and software (more specifically the realms of ideas, values, power); and the important role of leaders who can work across boundaries in promoting ISA, political mobilization and the essential role of hybrid accountability mechanisms. Overall, our review reaffirms affirms that ISA has both technical and political dimensions. In addition to technical concerns for strengthening capacities and providing support instruments and mechanisms, future research must carefully consider power and inter-organizational dynamics in order to develop a more fulsome understanding and improve the implementation of intersectoral initiatives, as well as to ensure their sustainability. This also shows the need for continued attention to emergent knowledge bases across different research domains including health.

Keywords: Intersectoral action, meta-narrative, review, governance, accountability, leadership, politics

Introduction

There has been recently more global attention to intersectoral action (ISA) in health as the nature of challenges at global, national and sub-national levels become ever more complex. The Sustainable Development Goals (SDGs) and the SDG objective of Universal Health Coverage have brought the vital role of the health sector into sharper focus. Although critically important, SDGs face growing constraints in response to social, economic and environmental challenges. Addressing aims towards healthier and better educated societies, gender equality, environmental sustainability and justice requires more collaborative work across sectors to devise more appropriate and effective solutions (United Nations, 2015)

The impetus for ISA has been there for a long time, as, it has been perceived as a means to achieve more inclusive policies that address equity and social determinants in health (Solar and Irwin, 2010). This has led to further research on what works in terms of ISA and coordination in health. There have been several recent evidence reviews of ISA in health that tackle this dimension of the problem. These evidence syntheses of ISA include a rapid review (Ndumbe- Eyoh and Moffatt, 2013), as well as scoping reviews (Shankardass *et al.*, 2012; Chircop *et al.*, 2015; Dubois *et al.*, 2015) focusing on (1) the conceptualization of ISA in health; (2) the relation of ISA to equity (Shankardass *et al.*, 2014); and (3) the (local) implementation of ISA (Guglielmin *et al.*, 2018).

While these reviews have all examined the literature in the health arena, the development of relevant theories and models span across other research traditions. Theory-building on mechanisms of coordination, institutionalization processes and dimensions of culture, values and power has been primarily conducted in political science, and more specifically in the field of public administration (Peters, 1998; Ling, 2002; Pollitt, 2003). The domain of environmental sciences has, from its outset, always dealt with the challenge of governing across sectors due to the all-encompassing nature of environmental challenges (Young, 2002). Thus, this review aims to explore the theories and their empirical application of ISA beyond applied research in the health sector. An interdisciplinary perspective and cross-learning from the application of social sciences in other fields is essential in health (Ridde, 2016) and would be beneficial for ISA in health by deepening our knowledge on theories and their framing (Corbin, 2017).

Although there have been sporadic efforts to cross-disciplines and capture disciplinary diversity (De Leeuw, 2017), there has been no systematic examination in the health literature of how ISA is explored in disciplines such as political science, public administration and environmental sciences. This means that there has been limited shared understanding and learning between these disciplines and public health. To enable cross-learning, it is therefore important to develop a clearer understanding of theory and its application to ISA across these disciplines. Thus, this review synthesizes both empirical and conceptual research, providing the scope for shared learning across disciplines. The main review question is: what are the theories, including theoretical developments based on empirical examples of ISA in the identified research traditions that can inform approaches to research on ISA problem-solving in the health sector?

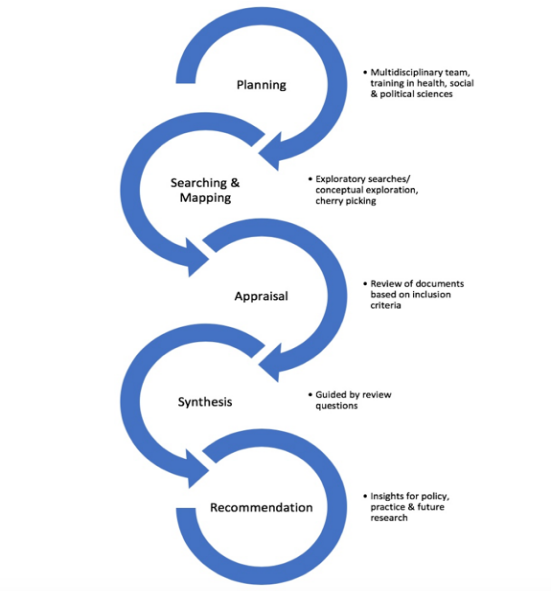
For the purpose of this review, we worked on a definition which is broad enough to capture the theoretical diversity/variety across disciplines. We use the definition which captures multiple social sectors, and included government departments, non-profit and for-profit organizations or societies and ordinary citizens in the conceptualization as ac- tors. Given the complex nature of ISA and limited understanding of frameworks and theories in health (Corbin, 2017; Bennett *et al.*, 2018), we aim to work towards developing clarity on theoretical underpinnings and seek a better alignment between theory-building and applied research to strengthen the relevance of such insights in empirical and implementation research. This is the first review that looks at ISA from four different perspectives; political science, public administration, environmental science and health, an essential step if we want to encourage the interdisciplinary research that is essential to generate solutions for today's complex problems.

Methods

Important considerations in ISA include mechanisms of coordination, cooperation (Peters, 1998), accountability and power (Flinders, 2002) embedded in collaborative dynamics (Emerson, 2015). Failures to coordinate are often labelled or considered as 'wicked problems' in health policy research. Wicked problems can be recognized by their uniqueness, social complexity, interdependence and

the inputs of several actors and multi-causal factors, with no definitive solution proposed (Rittel and Webber, 1973). Understanding the theoretical development and empirical enquiry in other disciplines dealing with socially complex phenomena can enhance its potential application in health (Greenhalgh *et al.*, 2005). Thus, we adopted a meta-narrative synthesis methodology (Wong et al., 2013), as this enables better comprehension of a complex topic by understanding commonalities and contrasts across disciplines by describing how a tradition has extended over time within the defined scope of inquiry (Greenhalgh *et al.*, 2004), and hence promoting a basis for cross-learning. This review methodology provides a unique tool for the synthesis of vast and complex evidence for policy processes (Greenhalgh *et al.*, 2005). Considering these potential advantages in health research, too, meta-narrative reviews have gained more attention and have recently been used to synthesize knowledge in the domains of food sovereignty, security and health equity (Weiler *et al.*, 2015), urban municipalities and health inequities (Collins and Hayes, 2010), patients' trust of information on the internet (Daraz *et al.*, 2019) and health research capacity development in low- and middle-income countries (Franzen *et al.*, 2017).

To encompass the concept of ISA across disciplines we use an adapted definition of ISA grounded in definitions of ISA formulated by the WHO (1997), Health Canada (2000) and Perera (2006); see Box 1 below.



Box 1 Definition ISA

'A recognized relationship/mandate for working with more than one sector of society to act on an area of shared interest, to achieve more effective, efficient or sustainable outcomes that is difficult to achieve by one sector alone. Actors may include government departments (such as health, education, environment and other social sectors); actors from civil society organizations and the private sector'.

(Adapted from WHO (1997), Health Canada (2000), Perera (2006))

Figure 6. 1: Phases of the meta-narrative review.

For this review, we followed the phases for meta-narrative review as explained by Greenhalgh *et al.* (2004, 2005). These phases include the following (Figure-6.1)

Planning phase

This review is a starting point to explore theories and their applications for a larger empirical work that investigates implementation and governance of an inter-sectoral policy at local level. A multidisciplinary review team (SM, SVB, AM) with training and experience in health, overall social sciences and specifically in political science, medicine, anthropology and public health was formed. This phase started with an initial exploration of the databases SCO-PUS and Google Scholar to identify the research domain that has covered the research on ISA. During our exploratory searches, we noticed that the research areas of health and environmental sciences provide a vast number of empirical studies on actual implementation and adaptation of ISA at the national, sub-national and local/municipal level. However, political science, and specifically the sub-discipline of public administration, also provide rich theoretical studies next to empirical studies. In this phase, we deployed the help of a librarian from the authors institute to refine the searches and to make sure that search keywords include terms covering the terminologies used in all research domains. We should note that research from public administration, as sub-discipline of political science, can include cross-referencing and overlap in concepts and definition as they are not mutually exclusive. Moreover, while political science tends to place more attention on political and structural factors driving ISA, public administration tends to focus on inter-institutional interaction. Selection of these domains were also limited by the expertise of the study team.

Table 6. 1: Overview of keyword search strategy

	Concept#1	Concept#2	Concept#3
Keyword 1	Inter-sectoral	Policy	Cooperation
OR Keyword 2	Intersectoral	Programme	Collaboration
OR Keyword 3	Health-in-all-policy	Implementation	Integration
OR Keyword 4	Cross-sectoral	Promotion	Coordination
OR Keyword 5	Cross sectoral (sometimes sector*) and use of brackets	Intervention	

OR Keyword 6	Multi-sectoral		
OR Keyword 7	Multisectoral		
OR Keyword 7	Whole-of-government		
OR Keyword 8	Joined-up-government		

*Variations in spellings were used

Search and mapping

In this phase, exploratory searches were performed, and key domains were identified. The decision to include both empirical and theoretical work was made to enrich the review. We proceeded with searching the multidisciplinary database of SCOPUS and checked the indexing of journal from all the identified research domains, to ensure the inclusion of key publications in these domains. We conducted searches in SCOPUS for the period from 1996 to 2017, which includes all PubMed and Embase contents from 1996 onwards, and for all peer-reviewed, articles in English on the concept of ISA. We used three search concepts and numerous relevant search terms to ensure the search strategy was as comprehensive as possible (Table 6.1). The three concepts captured ISA, its action through an intervention, and the mechanisms in which the intervention acted to promote ISA. We also used cross-referencing, snowballing and cherry-picking (Finfgeld-Connett and Johnson, 2013; Booth, 2016) to identify the seminal literature in public administration and political science with higher citations.

Appraisal phase

In this phase, all the eligible documents for inclusion and their relevance to the review were detailed (Table 6.2). Each document was appraised by two reviewers independently (SM and SVB) against the inclusion–exclusion criteria. We only selected the cases where roles of sectors were well defined, or where the policy mandate/engagement of the public sector in the partnership was well-defined. Articles which had the consensus of both were included immediately. In papers where there was no a clear clarity on the previous referenced criteria, a collective discussion was undertaken with the third co-author (AM), before taking a final decision. The PRISMA diagram (Figure-6.2) illustrates the selection of articles.

Table 6. 2: Inclusion and exclusion criteria

Criteria	Included	Excluded
Timeline	1996-2017	Before 1996
Countries	All countries	None
Languages	English	All other languages
Methodological Quality – Quantitative	-Empirical studies / primary data analysis: randomized control trials; quasi-experimental studies, before/after. -Conceptual/theoretical studies contributing to field-building -Conceptual/Theoretical	- Any kind of reviews -Non-peer reviewed empirical studies -Commentary -Editorial -NGO/organisational report/advocacy publications -Conference proceedings -Dissertations
Intersectoral action	Well defined role of sectors, with one of the partners a public department/ institution	Voluntary partnerships, not well-defined roles

Synthesis phase

This phase was guided by four objectives of the review: (1) to provide an overview of theoretical approaches in different research traditions; (2) to provide an overview of different ways of application/implementation in different research traditions; (3) to identify commonalities and different elements across research traditions.

Findings were summarized in tables and texts, and organized and incorporated into narratives, describing and dis- cussing the relevant roots in each research domain, as well as theoretical and pragmatic aspects of ISA. We also used the key features of pragmatism, pluralism, historicity, contestation, reflexivity and peer review (Wong *et al.*, 2013), as guiding principles in answering the key four questions directing the review.

Recommendation's phase

With a final goal to pave the way for policy and practice recommendations, we share insights from the review that can inform policy and practice and suggestions for future research.

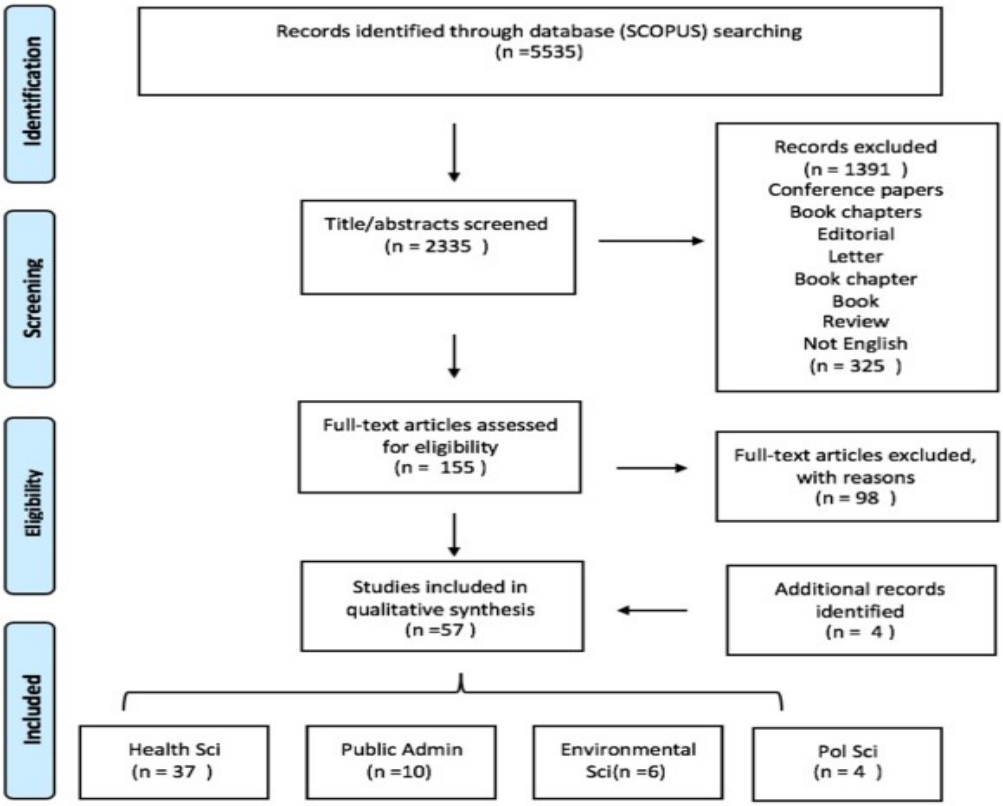


Figure 6. 2: PRISMA flow diagram.

Results

Study characteristics

A total of 57 papers were included in the review, of which 37 (65%) were from health, 10 (18%) from public administration, 6 (10%) from environmental sciences and 4 (7%) from political science (other than public administration). Of these, 8 papers were conceptual in nature and 51 were empirical studies. Most of the conceptual papers were from political science and public administration, originating in the UK/Europe research institutions. Among the empirical studies, 3 papers were from North America, 21 from the UK/Europe, 11 from the Oceania, 10 from Africa, 17 from Asia and 7 from South America (Table 6.3). Among these papers, seven studies focused on multiple countries. In terms of number of studies, there is a considerable increase of papers in last decade, especially in health and environmental sciences (Figure 6.3).

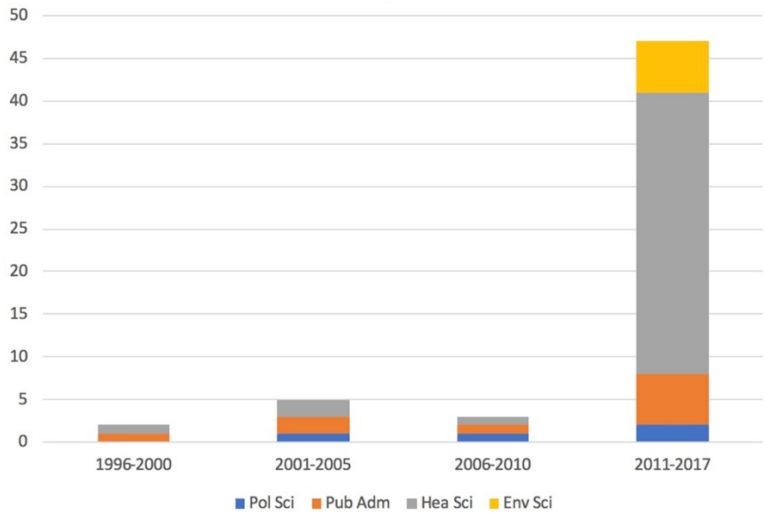


Figure 6. 3 Number of publications from 1996 to 2017.

Table 6. 3: Characteristics of empirical studies

Study location	
North America	3
UK & Europe	21
Oceania	11
Africa	10
South America	3
Asia	17
Scope of study	
Multi-country	7
Single country (national)	26
With-in one country (sub-national/provincial/municipal)	16
Study Design	
Case study	7
Cross-sectional	40
Longitudinal	2
Retrospective	1

Table 6. 4 Summary of key concepts from conceptual studies in the meta-narrative review

Discipline	Author	Conceptualization/ conceptual framework	Why is it required?	What is required?	What needs to be Considered?
Public Administration	G. Peters (1998)	Co-ordination & horizontality	Improving public sector functioning	Accountability mechanisms, challenges of redundancy, & coherence	Network perspectives, inter-organizational politics, relative power of interest groups, turf-wars
	Flinders (2002)	Governance theory as analytical and theoretical tool	Societal wicked and complex issues	Leadership ministerial & secretarial level, civil servant skills & capacity, budget flexibility. Establishing central mechanisms & new institutional units for coordination	Accountability, power, departmentalism, control-coordination, culture, window of opportunity.
	Ling (2002)	Joined-Up-Government (JUG)	Insufficient conventional public service delivery, wicked issues	Organizational dimensions of culture & values, management of information and training. Interorganizational dimension of shared leadership, budget pooling, merged structures & teams	User focused services 'one stop shop', accountabilities & incentives for shared outcome targets and outcome measurement, & shared regulation
	Tom Christensen &	Whole- of-Government (WUG)	Counter the negative effects of siloization,	Negotiative space, collaborative, engaging lower-level politics and Long-term engagement	Changes in structural arrangements & cultural practices (common ethics & cohesive

	Lægreid (2007)		sharing of information between public agencies for more secure world		culture), accountability systems
	Amsler & O'Leary (2017)	Collaborative public management & collaborative governance	Complex & multi-faceted problems	Importance of institutional contexts in examining collaborative public management, collaborative governance, and networks	Family of governance practices (voice & collaboration) required, institutional contexts
Political science	Pollitt (2003)	JUG	Increasing policy effectiveness, optimal use of resources, exchange of ideas & cooperation, seamless service delivery	flexibility, mutual intelligibility, mutual accountability and performance, culture of trust and joint problem-solving, adequate resources	Political dimensions, measuring impact and effectiveness, implications for politician, civil servants, professional service deliverers
	Humpage (2005)	Whole-of-govt-approach	Catering Indigenous needs	Central leadership, capacity building govt agencies & communities, Formal collaborative partnership, reporting & evaluating mechanism,	Move towards an instrument for governance than management tool, organization structure & culture slow to change

	Tosun & Lang (2017)	Policy integration	Policy problem or improve service delivery	Political leadership, structural/institutional changes, policy instruments, participation, capacity (human & institutional), Conscious organizational design, policy integration instruments	Organizational adjustment & accountability

Table 6. 5: Summary of results from the empirical studies in the meta-narrative review

Discipline	Research Focus	Author/year	Geography	Conceptual framework	Methods	Conditions (key considerations)
Public Administration	Sustainable development	Christpolos *et al.*(2012)	Coratia, Nepal, Mangolia	Metagovernance	Document review & interviews	Integrated modes of governance, access to information, knowledge, Empowerment of weaker players, Interactive learning, local practices
	Program Ministries for Youth and Families, Housing, Communities,	Karré, *et al (*2013)	Netherlands	JUG/WUG	Document review & semi-structured interviews	Strategic (Accountability, mandate, leadership, values) & Operational issues

	and Integration,					(resources, time, culture, budget, staff)
	New employment & administration reforms (NAV)	Christensen, *et al. (*2014)	Norway	Accountability framework in JUG. Political, administrative, legal, professional, and social accountability	Document analysis & survey	Multidimensional legal ability beyond hierarchical, leadership
	Sustainable Development plan and strategy	Vitola & Senfelde (2015)	Latvia	Policy coordination	Document analysis & survey	Informal aspects (organizational culture, social capital, networks)
	Social Inclusion Agenda	Carey *et al.* (2015)	Australia	JUG	Semi-structured interviews	Coherence between institutional and operational level
Political science	Reconstruction & Development Programme (RDP)	Kraak (2011)	South Africa	Horizontal coordination	Document review	Civil servant capacities-dialogic interaction, situated knowledge, boundary spanning
	REDD+ implementation	Ravikumar *et al.* (2015)	6 countries (Brazil, Peru, Cameroon, Tanzania,	Multi-level governance	Likert scale rating, Qualitative data:	Context-specificity, technico-political support, data-

			Indonesia, Vietnam)		interviews, field notes and observations	sharing, interest & power understanding
	Integrated approach to disaster risk management (DRM) and climate change adaptation (CCA)	Howes *et al.*, (2015)	Australia	WUG & network governance	Literature review, comparative case study of reports, semi-structured interviews, workshop	Shared policy vision, multi-level planning, integrating legislation, networking organizations, and cooperative funding
Environmental sciences	National adaptation of REDD+	Fujisaki *et al.* (2016)	Five countries- Cambodia, Indonesia, Lao PDR, Papua New Guinea, and Vietnam	Not mentioned	Policy document review & key-informant interviews	Institutional arrangements-space, participation (political, technical, resource-oriented) & communication, legitimacy & ability influenced by existing mechanism
	Integration of REDD+ in existing national agendas	Korhonen-Kurki *et al.* (2016)	Brazil, Cameroon, Indonesia, Nepal, Papua New Guinea,	Multi-level governance	Interviews	Building on existing mechanisms, explicating institutional complexity, flow

			Tanzania and Vietnam			of information, trust, regulatory role
	Climate policy integration	Di Gregorio *et al.* (2017)	Indonesia	Policy coherence & integration	literature, official policy documents and interviews	Power & interests, fragmented responsibilities, departmental resistance
	Climate change & water-energy-food nexus	Pardoe *et al.* (2017)	Tanzania	Not mentioned	Document analysis & key-informant interviews	Institutional frameworks, power imbalances, data sharing
Health sciences	Nutrition	Webb *et al.* (2001)	Australia	Not mentioned	Survey	Organizational development ,capacity building, formative evaluation method, planned joint action, strong relationships
	Nutrition	Fear & Barnett (2003)	New Zealand	Not mentioned	Case study- Project reports, interviews, govt. documents, published research	Commitment, value collaboration, entrepreneurial style of leadership with agency autonomy

	Nutrition	Khayatzadeh-Mahani *et al.* (2016)	Iran	Kingdon's multiple stream model (agenda setting & implementation)	Qualitative methods	Presence of evidence, legal instruments, policy entrepreneurs, political commitment
	Nutrition	Pomeroy-Stevens *et al.* (2016)	Uganda	Not mentioned	longitudinal mixed methods (budget data, interviews)	Unified identity, human resources, sustainable structures, coordination, advocacy, and adaptation to local needs
	Nutrition	Pomeroy-Stevens *et al.* (2016)	Nepal	Not mentioned	longitudinal mixed method design	Human resources, ownership, bottom-up planning, coordination, advocacy, and sustainable structures
	Nutrition	Kim *et al.* (2017)	India	Degree of convergence	Semi-structured interviews	shared goals/motivation ,clear leadership, mutual understanding of roles close inter-personal

						communication and vicinity, understanding of roles and responsibilities
	Nutrition	Harris *et al.* (2017)	Zambia	Not mentioned	longitudinal, qualitative case-study methodology	Policy coherence, Political and financial commitment, combination of material, strategic and technical support
	Early childhood Development	Johns (2010)	Rural Australia	Conceptualization around social capital, trust, leadership	Case study methodology, multiple case study design	Social capital, leadership influencing processes roes and structure, environmental factors (structural & broader issues)
	Urban health/healthy cities	Bergeron & Lévesque (2012)	Canada	Not mentioned	Case study-Document review and interviews	Mix of formal and informal collaboration mechanisms
	Urban health/healthy cities	Kang (2016)	Korea	Tool to measure inter-agency collaboration and integration	Postal survey	Sufficient resources, knowledge and expertise, common vision and goals, close

						relationships, and leadership
	Alcohol	De Goeij *et al.* (2016)	Netherland	Not mentioned	Retrospective multiple case study (document analysis & in-depth interviews)	Framing as societal problem, enthusiastic employees, resources (money & time), political support, local media, dedicated leadership
	Alcohol & Obesity	Peters, Klijn, *et al*. (2017a)	Netherland	Policy Networks	Web-based survey	Network management and trust for policy coordination and integration
	Alcohol & Obesity	Peters *et al.* 2017)	Netherland	Not mentioned	Multiple case study	Intersectoral composition from policy development stage
	Obesity	Hendriks *et al.* (2013)	Netherland	Behavior change wheel	Case study design (in-depth interviews)	Sufficient resources (time, money, and policy free space), close social ties and physical proximity, reframing health issues in common language.

	Mental Health	Horspool *et al*. (2016)	United Kingdom	Not mentioned	Cross-sectional qualitative (interviews)	Local context (geography and population size of a location),previous cross-sectoral experience & perception, stakeholder support, understanding of roles & responsibilities of other agency
	Primary Health Services	Anaf et al. (2014)	South Australia & northern territory	Not mentioned	Qualitative case study (interviews and document review)	Sufficient human and financial resources, diverse backgrounds and skills & personal rewards for sustaining
	Malaria	Mlozi *et al.* (2015)	Tanzania	Not mentioned	Documentary review, self-administered interviews and group discussion	Engagement of involved sectors in planning and development of policy guidelines, aligning the sectoral mandates and management culture.

	School health	Pucher *et al.* (2015a)	Netherlands	DIagnosis of Sustainable Collaboration (DISC) model	Cross-sectional quantitative data	Perceived common vision, trust & investment of resources
	School health	Pucher *et al.* (2015b)	Netherlands	DIagnosis of Sustainable Collaboration (DISC) model	Mixed-methods approach: quantitative data and interviews	Involved and informed decision-making process, supporting task accomplishment, coordination of collaborative process.
	School health	Tooher *et al.* (2017)	Australia	Not mentioned	Qualitative study: interviews	Communication of policy decisions, personal relationships, timing of collaboration, skilled stakeholder for aligning agendas. Champions, support of local leaders and
	School health	De Sousa *et al.* (2017)	Brazil	Mendes-Gonçalves on the working process for health- care and the elements	Interviews and observations	Structured and shared planning, training of professional, financial & material resources,

						willingness to work together
	Tobacco	Lencucha *et al.* (2015)	Philippines	JUG	Interviews	Power differential, vested (industry) interest, challenging institutional arrangements
	Health equity	Storm *et al.* (2016)	Netherlands	Theoretical model for reducing inequities	Document analysis & interviews	Strengthen existing links, role clarity, related activities & objectives, political choice
	Health equity	Storm *et al. (*2016)	Netherlands	Not mentioned	Document analysis, questionnaire, interviews	Good relationships, positive experiences, a common interest, use of same language, sufficient resources, supportive departmental managers and responsible aldermen
	Health equality	Scheele *et al.* (2018)	Scandinavian countries	health equity governance (politics,	Interviews	Political commitment & budgeting,

				organization and knowledge)		horizontal and vertical coordination, presence of evidence
	Municipal/local govt	Spiegel *et al.* (2012)	Cuba	Not mentioned	mixed methods design, using a two-phased descriptive approach	Accountable health councils, organization structure, policy orientation, political will
	Municipal/local govt	Larsen *et al.* (2014)	Denmark	Not mentioned	Document review & semi-structured interviews	Political support, public engagement and participation, local media, establishment of health funds & network
	Municipal/local govt	Hendriks *et al.* (2015)	Dutch	COM-B system (Capability, Opportunity, Motivation (COM), and Behavior (B))	Semi-structured interviews and observations	Flatter organizational structures and coaching of officials by managers
	Municipal/local govt	Holt *et al.* (2017)	Denmark	Theory of organizational neo-institutionalism	Ethnographic study- semi-structured and informal interviews	Framing of problem, essential for policy or intervention. Narrow focus, inadequate to

						address broader structural determinants
	Municipal/local Govt.	Hagen *et al.* (2017)	Norway	Not mentioned	Cross-sectional study- Register and survey data	Specific public health coordinator, using cross- sectorial working groups, inter-municipal collaboration, confidence in capability, established cross sector working group
	HiAP Evaluation	Baum *et al.* (2014)	Australia	Applying the program logic approach to HiAP	Semi-structured interviews, Online surveys of policy actors, detailed case analysis	Presence of a co-operation strategy, Health Lens Analysis process, central governance-enabled shared understanding, uncover & negotiate for inclusive participation
	HiAP conduciveness	Friel *et al.* (2015)	WHO western Pacific region	WHO 2013 framework Demonstrating a Health in All	Review of peer reviewed & grey literature, interviews	Evolving and sustaining partnerships, clear strategy,

				Policies Analytic Framework for Learning from Experiences		Infrastructure & sustainable financing mechanisms, linking individual agency with structural changes organizations
	HiAP implementation support	Delany *et al. (*2014)	South Australia	South Australian HiAP approach Baum et al. (2014)	Semi-structured interviews & workshops	Resourced centrally mandated unit, Joint governance structures & mandates, appeal of the unit, establishing trust and credibility, aligning core business and strategic priorities
	Methodological application: HiAP lessons	Baum *et al.* (2017)	South Australia	Institutional policy analysis framework (Ideas, actors, institutions)	document analysis, a log of key events, detailed interviews, two surveys of public servants.	Dedicated HiAP Unit, A new Public Health Act, Existence of a supportive, knowledgeable policy network, political support, supportive network of public servants

	Methodological application: Qualitative comparative analysis	Peters *et al.* (2017b)	Netherlands	Policy networks	Web based survey	Network diversity, network management for resource mobilization and reduction of adversity and complexity
	Methodological application: Realist methodology	Shankardass *et al.* (2015)	Sweden, Quebec, Australia	Realist-CMO configuration	Systemic literature search & interviews	Stakeholder previous experience of working in Health Impact Assessments, thorough inter-ministerial process, legislative mandate
	Methodological application Coalition theory	O'Neill *et al.* (1997)	Canada	Coalition theory	Historical document review, questionnaire, interviews	Effective collation among acquaintances, strong political link, believe in the cause, expert (informational resource) or power structure of the community (positional resource), information

						channels, persuasive, conflict resolution type of leadership

In political science and public administration, Joined-Up Government (JUG) research is embedded in broader public sector reform and provide institutional analysis, embedded in a description of political context. In the more applied domains of environmental sciences, multi-country studies that examine national adaptation and cross-country examinations are frequent. The analytical and conceptual framing is focused on governance and the studies are explicit about underlying relations of actors vested in power, interest and values. In health, the most common analytical method remains case studies to identify barriers and facilitators. However, more recently, some studies have been ethnographic in study design and detail the context and processes (Holt *et al.*, 2017) that can draw out the relationships between context, mechanisms and outcomes (Shankardass *et al.*, 2014). Others are grounded in the application of qualitative-comparative analysis methodology (Peters *et al.*, 2017b), or theory-based logic models for complex evaluations (Baum *et al.*, 2014). These studies stem from lack of decision-making data, the absence of monitoring and evaluation frameworks, poor understanding of contextual and other contributing factors and ascertaining the path-ways of ISA functioning and in the grand scheme of things the link between ISA and equity.

Tracing the roots and concepts of ISA

Joined-up Government in public sector reform

For almost two decades, the JUG and Whole of Government approaches have been implemented, tested, and tried in many countries. The JUG model evolved under New Labour in Britain in the 1990s and was subsequently adopted in other settings: Australia, New Zealand, Canada, Sweden, USA (Ling, 2002), Norway (Christensen *et al.*, 2014) and the Netherlands (Karré *et al.*, 2013).

Joined-up-government' is the term used to capture the changing nature of the central government and state, traditionally structured to work in 'siloes', 'cages' or 'chimneys' (Flinders, 2002) manner and not equipped to deal with cross-boundary issues. This JUG approach is sometimes also referred as to 'post-New Public Management reform' (Christensen and Lægreid, 2007). Whereas the era of New Public Management promoted silos and pillars of public sector institutions, focusing on 'single-purpose organizations' (Flinders, 2002), the JUG era refocused on building a strong unified set of values and collaboration among public servants. It overlaps to a

great extent with the 'Whole- of- Government' approach used in Australia (Christensen and Lægreid, 2007) focusing on the dynamics of interaction between institutions, and ensuring challenges related to control, coordination, and accountability.

Collaborative governance in environmental research

Research on joint working and collaborative (Emerson, 2015) or 'networked' (Stoker, 2006) or 'multi-level' (Bache *et al.*, 2016) governance in recent years has intensified, spurred in part by the United Nations-Reducing Emissions from Deforestation and Degradation (UN-REDD+) program and other collaborative multisectoral partner- ships within the context of climate change (Howes *et al.*, 2015; Ravikumar *et al.*, 2015; Korhonen-Kurki *et al.*, 2016; Pardoe *et al.*, 2017). The REDD+ mechanism was proposed under the United National Framework Convention on Climate Change (UNFCCC), promoting technical assistance and capacity building initiatives and policy-related ad- vice for implementation (Corbera and Schroeder, 2011; Thompson *et al.*, 2011). Research on collaborative governance was also accompanied by a better understanding of power dynamics and interests among different stakeholders. Environmental research stresses the need for multi-actor engagement; that is, the need to engage with civil society, indigenous groups and forest-dependent communities as they are mostly affected by the implementation in this policy domain. Responsiveness to multiple stakeholders remains a balancing act, as priorities and tensions arise and it is difficult to build consensus with competing views (Fujisaki *et al.*, 2016). Other challenges include the poor alignment of institutional boundaries and the blurring of accountability (Korhonen-Kurki *et al.*, 2016), a common problem in multi-actor partnerships. As well, climate change adaptation and disaster risk management require an adaptive governance mode which also provides an impetus for the creation of networks (Howes *et al.*, 2015).

Health: from Alma Ata to HiAP

The perceived need for ISA in health has been around for some time. In the 1970s, the Alma Ata declaration on social determinants of health brought the importance to the fore. Later, the first global conference for Health Promotion, with the launch of Ottawa Charter 1986, became a forerunner of efforts by the global health community to con- sider the role of other sectors in achieving health and well-being. By 1988,

during the second WHO Global Conference on Health Promotion in Adelaide, the concept of 'Healthy Public Policy' was emphasized and key areas for ISA, namely food and nutrition, tobacco, and alcohol, were identified (WHO, 1988). A decade later, in 1997, an international conference in Canada on the relevance of ISA for health in the 21st century, assessed its progress and relevance for future challenges. The concept of HiAP was mainstreamed initially in the European Union with the launch of the book 'Health in All Policies: prospects and potential' (Stahl *et al.*, 2006) and was adopted globally at the 8th Global Conference on Health Promotion (8 GCHP) in Helsinki, Finland in 2013 (WHO, 2013). These more recent studies explore HiAP implementation support (Delany *et al.*, 2014), conduciveness (Friel *et al.*, 2015), concepts and evaluation (Baum *et al.*, 2014).

Narrative synthesis

Rationale for undertaking ISA in in health, environment, and public sector reform

In health, ISA has remained a long-standing consensus to address health holistically. The WHO's focus on health systems was strengthened under the leadership of Margaret Chan (Samarasekera, 2007), with the emergence of HiAP inquiry and more recently with the emphasis on SDGs. The WHO's report of Commission on the Social Determinants of Health in 2008 effectively established that the conditions in which we live, work, grow and age affect our health and are in turn shaped by political, social and environmental decisions (CSDH, 2008). Coordinated action across sec- tors is considered essential to form and strengthen linkages to address social, economic and political determinants of health and reduce health inequities. The SDG framework emphasizes how interlinked goals in health require improvement in the other social outcomes, and hence the necessity of cross-sectoral collaboration (Nunes *et al.*, 2016). In addition, the new paradigms of health security, and the One Health Approach, call for collaboration and coordination across all relevant sectors, ministries, agencies and stakeholders in order to address the emerging epidemic of non-communicable diseases (WHO, 2019).

As well, the global impact of climate change requires working vertically between international, national, and sub- nation levels of decision-making and also working horizontally across sectors (Korhonen-Kurki *et al.*, 2016). This nexus approach emphasizes the need of inter-linkages between different sectors for coordinated

relationships that pro- motes synergies and trade-offs, and which enables feedback. Tackling inter-dependencies through cross-sectoral coordination are critical to achieving results supporting climate sustainability and avoiding the pressure points (Pardoe *et al.*, 2017).

Despite the growing intensity in published research, there still remains the problem of coordination, which has been called as 'philosophers stone' (Seidman, 1970; Jennings and Krane, 1994; Peters, 1998). This is due to the nature of how the public sector in different settings has evolved and gradually expanded. Government departments evolved as single purpose organizations, and this institutional architecture makes coordination a challenge in itself, and also creates a 'turf' problem, which creates inertia and unwillingness to share hard-won technical and monetary resources (Karré *et al.*, 2013).

Focus of different knowledge domains

Theory-building in political science/public administration

In public administration, the primary focus has been on public sector reform, such as the shift in roles and functioning of institutions and their patterns of engagement when undertaking ISA (Ling, 2002). Considerable attention is devoted to a better understanding of coordination failures, and associated challenges of control and coordination, ac- countability and power (Peters, 1998; Flinders, 2002). Three major reasons for failing coordination have been identified: when two organizations perform the same role of coordination; when no organization performs the task of coordination; and when the policies catering to the same population have different goals and requirements, which leads to 'policy incoherence' (ibid). Enhancing 'joined-upness' hence calls for approaches that align institutional aims, management systems, culture and incentivizes them to work together (Ling, 2002; Pollitt, 2003).

The cultural shift in organizations has been difficult to achieve, as change that involves moving away from a hierarchal culture and requires the acceptance of a learning culture with more tolerance for uncertainties and ways to manage them (Humpage, 2005). This requires the creation of values and trust, promoting team-building, with the in- tent of establishing a cohesive work culture (Ling, 2002). These

shifts in culture are often slow, grounded in norms, values, and practices, that require time.

Applied domains of environment and health

The knowledge domains of environment and health are empirical in nature and more outcome or goal-oriented, as they assess interventions or evaluate policies and programs. In environmental sciences, challenges in vertical and horizontal coordination have been discussed within the con- text of climate change and carbon emissions. The focus of enquiry has been on improving multi-level (Ravikumar *et al.*, 2015; Korhonen-Kurki *et al.*, 2016), collaborative or networked governance (Howes *et al.*, 2015). The REDD+ studies focus on institutional complexity and adaptation of the REDD+ framework for implementation at the national and sub-national level in developing countries (Howes *et al.*, 2015; Ravikumar *et al.*, 2015; Fujisaki *et al.*, 2016; Korhonen-Kurki *et al.*, 2016). The studies linking water, energy and food security examine policy coherence, overlap and complementarities in sectoral approaches (Pardoe *et al.*, 2017). Research on climate policy integration examines the level of integration of mitigation and adaptation objectives and policies (Di Gregorio *et al.*, 2017).

In health, we see mainly two approaches. The studies with specific policy approaches focus on a particular policy/ public health problem such as nutrition (Webb *et al.*, 2001; Fear and Barnett, 2003; Khayatzadeh-Mahani *et al.*, 2016; Pomeroy-Stevens *et al.*, 2016a ; Harris *et al.*, 2017), early childhood development (Johns, 2010; Bilodeau *et al.*, 2018), Malaria (Mlozi *et al.*, 2015), school heath (Pucher et al., 2015a,b; De Sousa *et al.*, 2017; Rebecca Tooher *et al.*, 2017), Tobacco (Lencucha *et al.*, 2015), alcohol and obesity (Hendriks *et al.*, 2013; de Goeij *et al.*, 2016; Peters *et al.*, 2017a), mental health (Horspool *et al.*, 2016) and primary health services (Anaf *et al.*, 2014). These studies have considered how intersectoral coordination has been deployed in their formulation and implementation.

The second approach is systemic in nature, and this research does not focus on a particular policy or program orthe political environment, but rather considers the 'will' and institutional arrangements for promoting ISA. The focus of these studies has been in the implementation, conduciveness, evaluation of HiAP initiatives and equity effects within the health system (Storm *et al.*, 2016; Scheele *et al.*, 2018), the role of local governments (Spiegel *et al.*, 2012; Larsen *et al.*, 2014b; Holt *et al.*, 2017) and

urban health/health in cities (Bergeron and Lévesque, 2012; Kang, 2016). In recent years, interest has moved beyond traditional research designs and towards developing a more robust methodology for ISA to better capture the dynamic processes and understand the associated challenges (Baum *et al.*, 2014; Shankardass *et al.*, 2015; Holt *et al.*, 2017; Peters *et al.*, 2017b).

Implementation instruments

In this section, we discuss the formal and informal structures that have been created to support ISA, including the informal networks that emerge, the key components of an enabling institutional environment.

Setting up new formal structures

We observed a range of policy instruments that have been applied in various settings, such as, formal institutional structures to enhance horizontal coordination (Peters, 1998; Bakvis and Juillet, 2004). Interdepartmental committees are the most prevalent structural forms in practice, as they bring together different partners to work together in public sector. However, there remains some skepticism as to their effectiveness because of departments' competing choices and demands unless caution is taken in their design and being affiliated to secretariats and specialist agencies (Peters, 1998; Greer and Lillvis, 2014). Another common mechanism is the creation of task forces, task teams or working groups, composed of experts, academics and community leaders, who are tasked with a specific problem and have to come up with a solution in a limited time frame. Third, central level agencies and coordinating units, such as those within a Prime Minister office in parliamentary settings, are high-level (policy)-level strategies with the direct responsibility, leadership, and legitimacy to enhance coordination.

The applied domains of health and environment provide empirical examples of these new institutional designs to promote better coordination across sectors. In their study of the implementation of REDD+ across seven countries, authors found that coordination mechanisms in the form of inter-ministerial working groups, steering committees, and national task forces were readily used. These mechanisms were either built on existing structures or new institutions were established to take up the role of coordination (Korhonen-Kurki *et al.*, 2016). In the health studies, one could identify the creation of multisectoral committees from regional, national to local level

(Pomeroy-Stevens *et al.*, 2016a,b), intersectoral meeting groups, steering committees, working groups (Hagen *et al.*, 2017) and interagency committees (Lencucha *et al.*, 2015) to spearhead coordination process.

However, the effectiveness of these inter-departmental groups and task forces is often challenged as they have no formal authority over other departments. In extreme cases, this can lead to the creation of a separate administrative structure that is not well integrated within existing departments, further causing ambiguity in implementation and ac- countability mechanisms. Hence, the creation of these supporting structures requires also an emphasis on connectivity or on the foundations of existing mechanisms and institutional arrangements (Fujisaki *et al.*, 2016).

Emergent networks

Beyond working with formal structures, we also found examples of informal, emergent coordination. Informal ISA has been given a boost by information communication technologies, these patterns of communication that can engender collaboration and action among like-minded individuals and generate networks. These informal networks play an important role in implementation and in solving practical problems. At times, they can become more effective than formal structures (Friel *et al.*, 2015; Vitola and Senfelde, 2015), as these networks bring the role of social capitaland reciprocity to the fore.

In the health sector, Bergeron and Lévesque (2012), exploring the collaboration between five sub-national minis- tries to promote active communities, explain that formal structures embedded in committees promote the interaction among identified ministries and stakeholders, while informal collaboration in form of sharing of information among civil servants at same time nudges other ministries to promote change by keeping them informed of the discussion and meeting processes (Bergeron and Lévesque, 2012).

There has been an increase in the proliferation of policy networks, both in health and environmental studies. For example, Peters *et al.* (2017a) studied policy networks in 34 Dutch municipalities, focusing on reducing overweight, smoking and alcohol/drug abuse, and found that policy networks bring together diverse actors, with different values, interests and perceptions. However, the performance of these networks lies in creation of trust and network management, to guide and facilitate interactions. Meanwhile, Howes *et al.* (2015) examine informal ISA within the context of three

extreme climate-related events in Australia and perceive these arrangements as an effective instrument to regulate conflict between departments by overcoming the structural barriers of bureaucratic hierarchy.

An enabling institutional environment

A policy orientation towards ISA can create some momentum but needs to be supplemented along the way with supporting structures. In the absence of such support, it is difficult to sustain change and the risk is reversion to the status quo. The hardware elements refer to the provision of funds, human resources, management systems, adequate service delivery, that are concrete and measurable, whereas software elements include cultural aspects of ideas, values, interests, norms that guide the interaction (Sheikh *et al.*, 2011). We also share important aspects of leadership and political will, and the lines of accountability imperative for ISA.

Hardware

The importance of adequate structural support in the form of financial and human resources, and management systems to capture data to enable shared policy vision has been stressed in the literature (Fear and Barnett, 2003; Anaf *et al.*, 2014; Shankardass *et al.*, 2014; Mlozi *et al.*, 2015; Pomeroy-Stevens *et al.*, 2016b; Pardoe *et al.*, 2017). This is also intrinsically linked to political commitment as it provides the partnering institutions a mandate to work together. An example from the Malaria Control Program in Tanzania demonstrates that the absence of a joint coordination mandate and the exclusion of engaged sectors during the early phases of policy planning and development resulted in lack of a national framework with further implications on budgetary allocation (Mlozi *et al.*, 2015). Khayatzadeh- Mahani *et al.* (2016) had similar findings from Iran, studying the development and implementation of HiAP, where non-health department strategic plans did not have any priority or mandate for inclusion of provincial Health Master Plans, affecting HiAP's impact. In South Australia, institutional support in the form of a well-resourced centrally mandated unit and alignment of policy priorities across departments contributed in supporting the implementation (Delany *et al.*, 2016).

Though identified as the most common structural supports, financial and human resources are also the most persistent challenge. Lack of adequate human resources can lead to faulty or inadequate implementation (Anaf *et al.*, 2014; Pomeroy-Stevens *et*

al., 2016a,b; Tosun and Lang, 2017). Joining up is costly, in terms of staffing, technological developments and time. Brazil's experience of a 'Health in School' program (De Sousa *et al.*, 2017), ISA for primary health care in Australia (Anaf *et al.*, 2014), coordination between agencies to support nutrition in New Zealand (Fear and Barnett, 2003), and the coordination action between water, agricultural and energy policies to address climate change in Tanzania (Humpage, 2005), all point to shortages of financial and material resources and time as key limitations for enhancing ISA. Assuring dedicated resources, particularly at lower levels of policy implementation, is essential for success.

Software

ISA brings in a number of stakeholders to work together, with differences in interests, values and power. Ideally working in a coordinated and mutually productive environment, institutions and actors can negotiate over respective roles and responsibilities when undertaking ISA. However, this is challenging, due to the centralized nature of bureaucracies in many different settings, and the potential for bureaucratic rivalry (Peters, 1998; Flinders, 2002). Power differentials have been mentioned as a factor that encumbers ISA, especially when the treasury or ministry of finance is involved (Ling, 2002). We also find them between local communities, NGOs on the one hand and administrations on the other (Ravikumar *et al.*, 2015; Di Gregorio *et al.*, 2017; Pardoe *et al.*, 2017) and in partnerships engaging the private sector and inter-agencies for collaboration (Lencucha *et al.*, 2015). Representation of actors alone cannot ensure coordination as they cannot negate the political values and conflict (Karré *et al.*, 2013) that are embedded in institutional interests and path dependencies (Fujisaki *et al.*, 2016).

Studies in environmental sciences such as REDD+ and Climate Policy Integration contend that climate change is still considered too much as a technical challenge, whereas issues are often political in nature, and understanding the underlying interest and power relations across actors and across levels is key (Ravikumar *et al.*, 2015; Di Gregorio *et al.*, 2017). The implementation of REDD^{+} policies require active participation of the local community, indigenous groups and forest-dependent communities. However, their participation is often tokenistic (Korhonen-Kurki *et al.*, 2016).

In order to navigate these terrains and to bring coherence and sustainability to ISA, long-term trust promoting culture has been suggested, through sensitization and capacity building initiatives. Capacity-building at all levels, from the political to level all the way down to service delivery, need to be oriented towards improving communication skills for better collaboration (Webb *et al.*, 2001; Tosun and Lang, 2017). Flinders (2002) argues that departmental structures are usually built in a manner that does not promote cross-departmental collaborations and hence civil serv- ants and core executives require specific competencies to address cross-cutting problems and inter-organizational policymaking.

In Brazil's 'Health in School' program, designers found that absence of competence training caused hurdles in making ISA operational (De Sousa *et al.*, 2017), as trainings can aid in developing a shared understanding and identifying the roles of each sector. Effective ISA training should sensitize and promote capabilities for carrying out inter- departmental activities, especially with regard to instruments and motivation to share information and data for decision-making, as well as effective communication skills to convince other sectors that are not directly engaged or participating. Similar findings emerged from authors studying the coordination between maternal and child nutrition, where they found that close inter-personal communication and understanding of each other's roles and responsibilities acted as enabling mechanisms for effective ISA (Kim *et al.*, 2017).

Leadership

To navigating the boundaries of ISA, the need for a strong leadership has been documented in both the theoretical and empirical literature. Such leadership is commonly referred as 'linking pins' (Karré *et al.*, 2013), 'boundary spanners' (Ling, 2002) or 'champion' (Baum *et al.*, 2017; Tooher *et al.*, 2017) or 'facilitator' (Bryson *et al.*, 2006). This provides the essential interface between structures, spanning boundaries, connecting agencies, departments, and sectors to break down silos, change behaviours and initiate join-decision-making action. The leadership competencies required include skills to advocate, persuade and to resolve conflicts. In fact, the style of leadership required is collaborative in nature, where one able to work horizontally, form partnerships across sectors and more specifically be inclusive, supportive, promoting trust, all of which bolsters communication, information-sharing and innovation as intermediary processes for effective ISA (Pucher et al., 2015b). In

examining the implementation of healthy city net- works at different levels (O'Neill *et al.*, 1997) found that a more persuasive style of leadership, comprised of negotiating, nudging, and bargaining was more effective than an authoritative style of consensus-building and more appropriate in intersectoral groups, as it fosters cohesiveness. Leadership at the political level is also important as this enables the shaping of mandates and aligning of systems, structures, and processes to fit the need of ISA, but in itself not adequate (Humpage, 2005; Karré *et al.*, 2013). Leadership at all levels, from the top, the level of permanent secretary (Flinders, 2002), to the highest administrative ranks (Humpage, 2005) and down to the local district level (Kim *et al.*, 2017), is required for full engagement and ownership. However, Tooher *et al.* (2017) cautions towards viability of such efforts in long term, where mechanisms are contingent on champions, and suggests that efforts should move towards institutionalization through support from local leaders to change policy practices (Tooher *et al.*, 2017).

In situations of high uncertainty, which is the case with tackling wicked problems such as those related to climate change, it is important to be able to nurture relations. 'Boundary spanners' extend and establish their networks and bring on the capacity to solve problems through social capital, making them enriched in skills and competencies to understand interdependencies and create engaging, respectful and trusting relationships (Howes *et al.*, 2015). Kraak (2011) sees their role as catalysts or brokers, as they can cross red-tapes by leveraging trust to enable asymmetries of information and facilitate goal adjustment, this is linked to inter-personal style, skills and knowledge. The Dutch experience of working with different program ministries shows that a boundary spanning role was adopted more by older civil servants working in the background, than by younger civil servants, who found it more lucrative for their career prospects to stay in their own departments (Karré *et al.*, 2013). The complex and contradictory roles played by boundary spanners, often places them in a stressful position having to deal with ambiguity and conflict, leading to lower satisfaction and higher turnover rates (Crosno *et al.*, 2009) all of which points to the need for institutional de- sign and executive support structures, and building an institutionalized support (Stamper and Johlke, 2003; van Meerkerk and Edelenbos, 2018).

Political will

The political nature of ISA is very well demonstrated in the literature, described variously as political support, priority, commitment, and the will to be able to formulate and implement inter-sectoral initiatives. Baum *et al.* (2017) conducted an institutional analysis of the South Australian experience of HiAP and noted that high-level political support and the presence of a policy network that is supportive as well as knowledgeable proved to be an important factor; furthermore, changes in ministerial leadership or high-level administrative appointments were considered a challenge for program outcomes. Humpage (2005), examining the Whole-of-Government approach in the context of indigenous challenges in Australia and New Zealand, observed that limited political commitment was a hindering factor in an ISA approach and proved to be a roadblock for effective shifts in culturally indigenous specific policy discourse.

While political commitment at the highest level is key, studies focusing on municipalities and local health councils also found that political commitment at these devolved 'frontline' levels is essential. Scheele *et al.* (2018) and Larsen *et al.* (2014b), examining Scandinavian municipalities, found that political commitment at the local level during the initial phase of discussion aided the framing and adaptation of policy documents and helped generate the momentum for collaboration through stakeholder buy-in. The need for political will, linkages, support, and commitment has been extensively documented as being crucial for the initiation and maintenance of the process of collaboration (Spiegel *et al.*, 2012; Baum *et al.*, 2014; Storm *et al.*, 2014; Larsen *et al.*, 2014a; Khayatzadeh-Mahani *et al.*, 2016; Goeij *et al.*, 2017; Harris *et al.*, 2017; Tosun and Lang, 2017), and is an important consideration at all levels of governance.

Intersecting accountabilities

Working across sectors often makes accountability lines highly ambiguous. This situation arises primarily because a complex network delivery needs to be able to identify 'who did what' when organizations blend their work (Peters, 1998). Another ambiguity lies in identifying the chain of accountability, or 'the problem of many eyes' or 'accountability to whom?' as traditional hierarchical accountability clearly does not suffice (Christensen *et al.*, 2014). As Pollitt (2003) argues, this requires a multi-dimensional accountability concept, comprising a cluster of accountability mechanisms. Christensen *et al.* (2014) also propose a 'family' of accountability

mechanisms that include traditional political and administrative accountability, plus additional legal, professional, and social accountability.

Below, we describe empirical examples of political/administrative, legal, and social accountability. We did not find any conceptual or worked empirical example of professional accountability, which relates to obliging to professional norms, standards, and expertise (Christensen *et al.*, 2014).

Political and administrative accountability

Political accountability is the upward mechanism which denotes the interaction between political and administrative leadership and the lawmaking and executive bodies. In the larger scheme of things, this can also be seen as a subset of principal-agent relationships in which the voting class delegates the power to elected representatives, who in turn delegate the command to cabinet and civil servants (Byrkjeflot et al., 2014, Khayatzadeh-Mahani *et al.* (2016), studying the development and implementation of HiAP in Iran, found that non-health sectors are accountable for their core tasks and duties but tasks assigned to them by the health sector are not in their primary purview, highlighting the difficulty in reinforcing horizontal accountability across sectors.

Legal accountability

Legal accountability provides an external oversight mechanism in the form of laws and entitlements as legal instruments. These instruments can act as a tool to hold public institutions accountable and serve as means of fairness and justice for individuals and society in general. Scheele *et al.* (2018), drawing on the experience of local governments to address equity in Scandinavia, conclude that the presence of legislation that obligates municipalities to implement inter-sectoral policies shows national commitment that compels municipalities to address health equity through budgetary allocation. Delany *et al.* (2014), examining the support for early implementation of HiAP in the South Australian context, found that presence of the *Public Health Act*, which was developed according to HiAP principles, provides the legal framework, and promotes the adoption of HiAP across all levels of government and potentially also increasing its scope of the HiAP by legitimizing collaboration. In their study of Iran, Khayatzadeh-Mahani *et al.* (2016) found that legal endorsement and provisioning of programs provided the much-needed push for ISA to move into

the stages of agenda setting. A similar challenge was noted in the Philippines, where a Whole-of- Government approach was adopted for Non-Communicable Diseases (NCDs), especially tobacco. The study noted that weaker legislation and the presence of the tobacco industry proved to be key challenges for Department of Health to be compliant to Framework Convention of Tobacco Control (Lencucha *et al.*, 2015).

However, it is not only the lack of legislation but also the lack of legislative integration can create more ambiguity and further cause severe implementation challenges and hamper accountability. Using the example of extreme cli- mate-related weather events in Australia, Howes *et al.* (2015) explain that individual agencies often have separate legislations, and in cases of natural disaster, new legislation leads to ever more fragmented policies, plans and goals among agencies. They highlight that either reviewing and amending previous legislation, or creation of a new omni- bus act could bring in much needed legislative integration to support on the ground activities and lead to e a clearer chain of accountability.

Social accountability

Social accountability is also an important mechanism to ensure public service delivery, not only towards government but also potentially towards non-state service providers. The UN-REDD+ initiatives include a group of non- state actors, comprising of NGOs, civil societies, indigenous groups, local community, and private sector, under stake- holder groups, as it is important that these initiatives are anchored in local communities. The need to build participatory governance mechanisms for indigenous and forest-dependent communities also stems from the fact that they are guardians of the forest land, and it is essential to safeguard the rights of communities (Fujisaki *et al.*, 2016). However, the environmental studies literature also cautions about tokenism as participation in decision-making is by no means a guarantee for their views to be taken into consideration. In health, there are some positive examples, for example in Cuba, where the implementation of ISA at municipal level was aided by co-location and embeddedness in the local and political context, thus providing ‘connectedness’ to people and at the same time, the inclusion of community representatives in local health councils provided local social accountability, by allowing for broader public participation for raising concerns or complaints (Spiegel *et al.*, 2012). Thus, ISA can also act as a mechanism for ensuring long- term social accountability and relevance.

With the growth of information and communication technologies, media can be a powerful tool in promoting transparency, and be a key driver of accountability (Camaj, 2013). In the case of Danish municipalities, Larsen *et al.* (2014b) show that share that local media was a positive facilitator for ISA in health, as it disseminated critical and complex information on policy, and identified the role of key actors to citizens. In Dutch municipalities, media channels were used to frame alcohol abuse as a complex social intersectoral problem, rather than just a health problem, thus influencing both political prioritization and processes for agenda-setting. Media can also be used as a regulatory and enforcement strategy, in influencing public opinion to promote accountability, in framing of the problem, and in providing an external oversight as a forum for debate for a plurality of actors (Goeij *et al.*, 2017).

Discussion

This meta-narrative-review examines the literature exploring the concept of ISA across different knowledge domains, sharing the theories, theoretical framing and empirical application of ISA in other fields that can help better situate and inform health policy and systems research. We also share the roots of origin of ISA and motivations to pursue ISA in these research domains.

The review reveals that research on structural mechanisms for coordination across sectors (e.g. committees, task forces and coordinating units) is often skewed towards engagement of the public sector. The importance of the participation of communities and NGOs has been deemed important across all four research domains, but the mechanisms to engage and ways to empower their participation has oftentimes been limited. This also points towards the need to consider such participation in ISA, taking into account issues of power, interests and control. Interactions between and across do not occur only in the context of a single underlying policy/program but are also governed by broader political factors, dynamics between actors from civil society, the market and state, as well as trust in government which forms the background and context against which ISA is implemented. In the Health sector, the concept of HiAP has been promoted to make the policies and adopt policies in a systematic way. Australia, Brazil, Cuba, England, Finland, Iran, Malaysia, New Zealand, Northern Ireland,

Norway, Quebec, Scotland, Sri Lanka, Sweden, Thailand and Wales have adopted HiAP approaches at national or sub-national jurisdictions. These examples, however, also share a more *ad hoc* adoption of HiAP through projects or programs, instead of a systematic adoption (Shankardass *et al.*, 2011). This also raises the questions regarding the overall success and sustainability of intersectoral initiatives. Holt (2017) opine that framing of health-goals into the agendas of other sector promotes the adoption of 'small-scale interventions' and might address only the 'intermediate determinants and discount broader welfare policy impacts. However, following Holt, ISA needs to address the 'causes-of-causes', such as macro socio-economic and macro-economic impact, or else, it can impede the longer-term success and sustainability of ISA (Holt *et al.*, 2017).

Thus, different frames lead to differences in mobilization, mandates, operationalization, and solutions in ISA. In health, the case of the 'commercial determinants of health' (Kickbusch *et al.*, 2016) and the rising NCD epidemic bring/has brought the tension between global/trade policy and health to the fore, where public policy actors are con- strained in their action by a lack the resources, power and capacity to promote the ideas and values of public health (Labonté and Stuckler, 2016; Schram, 2018).

In the design and implementation of inter-sectoral interventions, the role of power and politics is considerable, and it is common for traditional command and control forms of power to be upheld by statutory institutions. The process of coordination and regulation may lie outside the authority of the health ministry and may be in the hands of the ministries of finance, industry, or agriculture, who are also more powerful, having profound effects on public ac- countability (WHO, 2017; Lencucha and Thow, 2020). However, it is also important to note that traditional hierarchies are challenged during the process of implementation as such bureaucracies are often ill-equipped to work across institutions/across boundaries (Ostrom, 2005) in describing an institutional design for 'nesting', evokes a scenario for ISA with several centres of decision-making (polycentrism), with each centre/institution retaining its independence, and where decision-making overlaps and cuts across different jurisdictions.

To promote joint-decision-making and to be able to resolve conflicts, informal aspects of organizational culture, social capital, and networks can play a crucial role.

The role of leadership in enabling coordination, building trust and with an ability to navigate complex communication, has been considered essential. These leaders are sometimes de- scribed as being 'linking pin' or a 'boundary spanner'. In the arena of global health, the concept of boundary spanner has been suggested important to promote an inclusive mindset. Crossing boundaries need, a constant engagement and comparisons across contexts, working across silos of research, practice and policymaking and finally integrating local, sub-national, national and global learning to promote learning (Sheikh *et al.*, 2016).

The cross-sectoral collaboration for better health has gained a renewed impetus is the SDG era. The recent series on 'Making Multisectoral Collaboration Work' in the *British Medical Journal* shares 12 country case studies that reveal news ways of collaboration and learning (Graham *et al.*, 2018); while the BMJ's Global Health series on 'Governing multisectoral action for health in LMICs (Bennett *et al.*, 2018), shows the need to generate evidence to reach these goals. Our review directly contributes towards enumerating and detail on theories and their application in this discussion, by being better able to understand the processes and complex undercurrents involved.

To frame and conceptualize ISA in terms of governance challenges, with the given degree of complexity, a 'hybrid', adaptive form of governance seems to be appropriate, which can be adapted depending on the institutional arrangements and context. The concept of meta-governance (Torfing *et al.*, 2012) proves to be quite apt, due to the changing role of the health sector and the interaction with the multiple actors embedded in power differences. The health sector can enact the most appropriate role of a technical resource, implementor, regulator, coordinator, or enabler, in an integrative form of governance, balancing the other sector requirements and needs. These functions can be translated into more specific roles, responsibilities, and related accountability processes. A single form of accountability mechanism may not be sufficient, and may need a mix of administrative, legal and social forms of accountability might be required, adapted to deliberately shared roles by civil society organizations and markets.

Strengths and limitations

The meta-narrative synthesis was the most appropriate methodology for a

theoretical and empirical synthesis across disciplines. As a consequence, we did not include articles using only strength of evidence, which is characteristic of a systematic review. However, to maintain the quality of cases, we included only peer-reviewed articles in the study. Moreover, this decision was also influenced by the nature of the review, which set out to also include conceptual studies, and in such cases strength of evidence classifications would have not been appropriate.

Another limitation of this study is the restriction of our searches and analysis to four disciplines. As explained earlier, the choice of political science and public administration was based on the fact that much of the theoretical development on ISA stems from these research traditions, whereas health and environmental domains were chosen for their empirical advances. We acknowledge that there are other research domains which use similar concepts of ISA in conceptualization and implementation, such as organizational sociology and management studies.

Our entry-point was a mapping of concepts used in health which are also used in the other research domains, which may have produced restrictive searches. This also led to inclusion of more research articles from health and the possibility that not all relevant publications were included across the other three research domains. Through cherry- picking and exploring seminal works in each domain, we made the review more comprehensive. Thus, this review is a starting point for further integration of ISA between environment, health and political science, needed to tackle SDG challenges, and not exhaustive of concepts and theories that have been explored in the research domains.

Research and policy practice implications

Our review identifies challenges and opportunities to work on ISA and advances the theory knowledge and theoretical grounding of ISA across research domain that can be used in health and its more in depth understanding of specificities and similarities between health and other sectors. In health, there has been a gap in research methodologies that can capture or measure ISA, and this review addresses this by identifying the application of newer method- ologies in form of ethnographic studies detailing on context and processes (Holt *et al.*, 2017), realist methodology to draw the relation between context-mechanism-outcomes (Shankardass *et al.*, 2014), theory-based logic models for complex evaluations

(Baum *et al.*, 2014), thus paving a way for future research.

The challenge of intersectoral work, is essentially one of working at the interface across boundaries, with both political and technocratic aspects. In order to understand the political dimensions, studies need to focus on the broad- er policy environment and actor dynamics, more specifically exploring the power dynamics and relations between stakeholders, their interests and accountability mechanisms. The research designs needs to consider politics and the political dimension of the challenge in their scope of work.

For policy communities, this review contributes to a better interdisciplinary understanding, and more integration of governance challenges in health which in health has been a bit lagging as compared to the integration of governance into environmental studies. Cross-learning of these governance challenges for ISA grounded in a better under- standing of socio-ecological systems and their impact may benefit health policies and research practices. Further integration is needed between disciplines to tackle globally 'intersecting' challenges and problems. This review can in- form future enquiries and can guide action on ISA policy and practice.

Conclusion

The review aimed at providing an overview of theoretical work and is empirical application on ISA in the domains of health, environment and political science and public administration, to arrive at a better understanding of approaches in other domains, and to better tackle SDG and global challenges. Findings of the review indicate that ISA has both technical and political dimensions, and that it is essential to create instruments, roles and responsibilities and capacities, to initiate action on ISA. At the same time, it is even more important to mobilize political commitment, create an enabling institutional environment, and to develop collaborative leadership and hybrid accountability mechanisms to sustain the ISA. There has been a sustained interest in this field, but there is now a need to explore and develop approaches and questions that frames ISA in political environment, economic structures and inter-organizational dynamics.

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Chapter 7: Policy Processes in Multisectoral Tobacco Control in India: The Role of Institutional Architecture, Political Engagement and Legal Interventions (Manuscript 2)

Preface

This chapter presents manuscript 2 and provides the policy landscape of tobacco control policies in India at the national and state (Karnataka) levels. The main aim of this manuscript is to map the laws and policies guiding the implementation, describe the policy processes at national and state level, and identify the enablers, drivers, and challenges in the Indian policy context. The manuscript 1/chapter 6 highlighted the importance to understand the broader macro policy-related context. Hence, this empirical enquiry starts with policy landscape. The findings from this manuscript are later advanced in the discussion section (chapter 10) to explore how the macro (national and state) level context can support the local level implementation. The manuscript describes the engaged actors and their roles and interests, and documents ways of engaging, mobilising, and influencing the policy process, and highlighting key drivers for multisectoral collaboration.

Manuscript 2: Policy Processes in Multi-Sectoral Tobacco Control in India: The Role of Institutional Architecture, Political Engagement and Legal Interventions

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Abstract

Introduction: The development and implementation of health policy have become more overt in the era of Sustainable Development Goals, with expectations for greater inclusivity and comprehensiveness in addressing health holistically. Such challenges are more marked in LMIC, where policy contexts, actor interests and participation mechanisms are not always well researched. In this analysis of a multisectoral policy, the Tobacco Control Program in India, our objective was to understand the processes involved in policy formulation and adoption, describing context, enablers, and key drivers, as well as highlight the challenges of policy.

Methods: We used a qualitative case study methodology, drawing on the health policy triangle, and a deliberative policy analysis approach. We conducted document review and in-depth interviews with diverse stakeholders (n=17) and anlayzed the data thematically.

Results: The policy context was framed by national law in India, the signing of a global treaty, and the adoption of a dedicated national program. Key actors included the national Ministry of Health and Family Welfare, State Health Departments, technical support organizations, research organizations, non-governmental bodies, citizenry and media, engaged in collaborative and, at times, overlapping roles. Lobbying groups, in particular the tobacco industry, were strong opponents with negative implications for policy adoption. The state-level implementation relied on creating an enabling politico-administrative framework and providing institutional structure and resources to take concrete action.

Conclusions: Key drivers in this collaborative governance process were institutional mechanisms for collaboration, multi-level and effective cross-sectoral leadership, as well as political prioritization and social mobilization. A stronger legal framework, continued engagement, and action to address policy incoherence issues can lead to better uptake of multisectoral policies. As the impetus for multisectoral policy grows, research needs to map, understand stakeholders' incentives and interests to engage with policy, and inform systems design for joint action.

Keywords: Policy Analysis, Multisectoral, Tobacco, Governance, Politics

Key Messages:

Implications for Policy Makers

- A strong legal framework in tobacco control is essential for effective policy development and adoption to protect the health and human rights of the public.
- In countries with a federal structure such as India, the states play a key role in policy adoption and implementation, and hence attention must be paid to enabling a sub-national policy architecture, resources, structures and capacities.
- In a multisectoral policy, non-governmental, technical and research organizations can enable the formation of a supportive network architecture that plays a key role in evidence generation, advocacy, accountability and monitoring. The articulation of policy should open up spaces for societal participation and engagement.

Implications for Public

This research identified the important role played by a dedicated national program, mobilization of the political class and utilizing legal frameworks to safeguard the public interest in the tobacco control program in India. The leadership to drive the policy was played by the ministry and state department of health but supported organizations in stages of policy formulation and adaptation. Legal instruments like Public Interest Litigation (PIL) and engaged citizenry and civic culture played a critical role in mobilizing and negating the tactics used by tobacco industry to promote tobacco products. Thus, citizen awareness, engagement and advocacy can play an important role in promoting and preserving the health of the populations.

Background

Health policies play a central role in ensuring access, reducing inequities and improving health and well-being. The scope of these policies in–today's inter-connected world requires a more engaged and collaborative policy framework that moves beyond traditional silos so that political and bureaucratic institutions can engage and collaborate with one another, as well as with non-governmental organizations, civic bodies and the citizenry [1–3]. The objective of health policy today is to move from a sectoral to a multisectoral approach to enable work on the broader social, economic and political determinants of health, seeking coherence in policymaking and implementation[4].

Despite these objectives, policy processes remain poorly researched, especially in the context of low-and-middle-income-countries (LMIC)[5]. In the case of multisectoral policy in LMIC contexts, these problems are more acute as weaker institutional structures, and political fragmentation undermine the capacity to coordinate across multiple sectors[6]. Understanding the role of the state, political institutions, actors and their interests, and the mechanisms in which they participate and yield power[7] is imperative to advance our understanding of the role of collaborative governance arrangements in multisectoral policy implementation[8].

This study presents an analysis of a collaborative and multisectoral policy. We aim to generate in-depth insights into the process of national multisectoral policy formulation, adoption and adaptation at the state level, describing the context, the role of key actors in leading and influencing policy decisions, and detail on the processes involved. Selecting tobacco control policy in India's federal system as a case study, we explore how this policy was developed and how it progressed towards the implementation phase at the state and local level, explaining key drivers and challenges encountered. The Indian political system is a federal republic; both the National/Union government as well as sub-national/state governments enact laws. While "public health" is part of the constitutional mandate of states, tobacco as a commodity is a central matter. In fact, some of the regulation strategies used for tobacco (e.g. food safety) fall on the "concurrent" list (that is, the responsibility of both national and state governments), so it is important to study actors and processes at all levels.

The research questions guiding the study are: i) What are the policies, directives, acts and laws guiding tobacco control in India? ii) How did the context of tobacco control evolved at the national level and how was it adapted and adopted at the state level? iii) What are the enablers, drivers and challenges in the Indian policy context? This analysis could be relevant to tobacco control policies elsewhere and more generally to multisectoral policymaking and implementation in other multisectoral scenarios and contexts.

Setting and context

Tobacco control in India

India's tobacco consumption has long ranked among the highest in the world [9]. There are different forms of smoking products, mainly cigarettes and bidi (small hand-rolled cigarettes made of tobacco and wrapped in tendu leaf), as well as smokeless forms such as khaini (tobacco-lime mixture), gutkha (tobacco, lime and areca nut mixture) and betel quid with tobacco[10]. According to the recent Global Adult Tobacco Survey (GATS), 42.4% of men and 14.2% of women use tobacco in one form or another[9]. Apart from tobacco consumption, India is also the second-largest producer and exporter of tobacco, adding further contextual complexity[11].

Tobacco is a leading risk factor for major non-communicable diseases (NCDs) such as cancers, cardiovascular diseases and chronic respiratory illnesses, accounting for one in six of all NCD deaths worldwide[12]. In 2010, smoking was estimated to have caused about 930,000 deaths[13], and smokeless tobacco caused 368,127 deaths in India[14]. In addition, total economic costs attributed to tobacco use from all forms of diseases in the adult population (aged 35-69) was INR 11,04,500 crores (US$ 22.4 billion) in 2011[15]. Direct costs of hospital care and treatments accounted for 16 percent of the total, whereas indirect costs of patient's productivity lost due to premature death and loss of work and family income loss accounted for 86 percent[15]. The threat from tobacco exposure has a wider impact that goes beyond health and extends to economic development, environment, and individual and social well-being. It also inhibits productive potential, as it increases the burden of morbidities, mortality and is also associated as a risk factor for chronic diseases making this a human rights issue as well[16].

Tobacco control policies and programs in India are comprehensive and promote multisectoral action both in their policy formulation and implementation[17].

Tobacco control received attention in the early 1980s and 1990s, when national consultations on “Tobacco or Health” were held, which reinforced the need for protection from this health hazard. In 1995, based on a study commissioned by the central Ministry of Health, tobacco was identified as a “demerit” good with negative public health consequences. In 2003, a landmark national legislation was passed, the *Cigarettes and Other Tobacco Products Act*, 2003 (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) (known as COTPA). This provided the statutory mandate for action on tobacco control across the country. The evolution and enforcement of COTPA began at the same time as the emergence of the WHO’s *Framework Convention on Tobacco Control* (FCTC); India was the seventh signatory in 2004[17]. This represents a unique case of ratifying an international treaty, marking a paradigm shift in regulatory strategy that affects both demand and supply sides [18].

These efforts gained more systemic momentum when the *National Tobacco Control Program* (NTCP) was introduced as a pilot phase in 2007-08, followed by a gradual scale up during the 11th (2007-12) and 12th (2012-17) five-year plans. Currently, the program is being implemented in all the 36 State and Union Territories [19]. The creation of the NTCP had an incremental effect, as it provided a three-tier structure (national-state-district) and ensured much-needed adequate human resources and financial support across states and districts. It focuses on the implementation of COTPA 2003, conducting periodic training and information, education, and communication (IEC) activities with stakeholders across institutions and departments, providing smoking cessation support and coordination to implement the program. It also created avenues for external oversight, monitoring and review of the program on a regular basis [17].

At the state level this study focuses on the Indian state of Karnataka. The state enacted a state-level legislation in 2001 known as the *Karnataka Prohibition of Smoking and Protection of Health of Non-Smokers Act*, 2001. The Act protected the non-smokers from the hazards of passive smoking, especially in public spaces, discouraging promotion of advertisement for smoking and sale of cigarettes to persons under 18 years of age [20]. There was not much time gap between the state and the national act in 2003, and the state-level momentum only began in 2004 after COTPA and with implementation of the NTCP. The state has also shown good results in enacting the law and implementing tobacco control policies at (sub) district levels[21]. In

addition, the GATS-I & II shows a significant decrease of 3.1 percentage points in smoking and smokeless tobacco and 5.4 percentage points in prevalence of tobacco use in Karnataka [22]. The state also embodies the complexity of the tobacco environment, being the second largest producer of Flue-Cured Virginia (FCV) tobacco, housing the largest cigarette manufacturer in the country and also manufacturing other forms of tobacco[23].

Together, COPTA and NTCP established the mechanisms for the promotion of coordination and cooperation between several ministries and their departments at the national and sub-national levels and are recognized as an example for developing multisectoral policy in India[24–26].

Methods

In order to trace the processes of policy formulation and adoption, we employed a single case study methodology with an embedded design[27]. The embedded single-case study involves more than one level of the unit of analysis, in our case, the national and the state level. We used an established policy analysis approach (described below) to generate insights about the context, identifying factors influencing the policymaking, and detailing the policy processes in the case of tobacco control in India.

Policy framework and approach

The health policy triangle framework[28] serves as the foundation of this study's design and the deliberative policy analysis approach[29] guides our analysis of the data. The policy triangle framework is a well-established tool of policy analysis.[30] We further detailing on the processes of initiation, formulation and development of India's tobacco-control policies, as well as to examine, step by step, the complex interactions amongst participants in the decision-making process.

- In context, we examined and described the use of tobacco, the burden of disease and social, structural and political factors that might have an influence on the policy.
- In content, we list the substance of documents and literature related to the selected policy.
- In actors, we identified persons and organizations playing a key role in the tobacco control program.

- In processes, using the Berlan *et al.* (2014), we discuss the approach to analyze the processes linking the phase of agenda-setting to the process of policy adoption through implementation, enabling the description of procedural, technical as well as political dimensions of policy design and adoption.

The deliberative policy analysis approach[29] brings an understanding of the meaning of policies and laws as interpreted and applied in practice by the stakeholders[31]. The approach is inclusive of the real-world plurality of interests and interpretation of stakeholders and networks. This approach reflects the practices and modes of current public sector governance, where collaborative working arrangements take into account experiences, values, understandings and beliefs. This is especially salient to tobacco control, which involves many diverse actors due to its multisectoral nature. We use this approach to construct a multi-faceted picture from the viewpoint of multiple actors, presenting a narrative grounded in and taking a more practice-oriented view.

Data collection

We collected two sets of data iteratively: in-depth interviews and documents for policy analysis.

Document review: We sourced policy documents, acts, bills, government circulars/orders through web searches and also asked respondents to share key documents with our team as the first step. They were reviewed, collated and analyzed using a data extraction sheet. The database was prepared to track and ascertain the status and progress for implementation of tobacco control policy at the national and state (Karnataka) level. The document review also enabled the identification of key groups/departments or individual actors, who were followed up for an interview.

In-depth interviews: The key informants were chosen mainly on the basis of their experience, relevance and their influential positions in relation to tobacco control policy formulation, development and implementation, either at the national state level (Karnataka) or in both. These include individuals involved in various capacities in the health system, civil-society organizations, high-level officials, experts and academics. These informants were all able to provide critical information, either as active participants in tobacco control policy development or as recognized subject experts. We selected respondents on the principle of maximum variation[32], to include and capture similarities and differences in perspectives across diverse stakeholders. We

identified stakeholders through professional networks and colleagues and further requested them to identify and share information-rich respondents[33].

We conducted a total of 17 interviews, 8 at the national and 9 at the state level (see Table 7.1, below). Of these, 15 interviews were conducted in person, 1 by phone and 1 via Skype. In total, there were 6 female respondents and 11 male respondents. The interviews were conducted by the first author, SM, and were in English. We obtained written consent from all participants, and all interviews were digitally recorded. We developed a semi-structured interview guide that focused on the evolution and context of the initiation of policies; interviewees were asked to identify critical points/events in policy formulation and development and elicit challenges and opportunities at national and state levels. The average duration of interviews was one hour. Hand-written notes were taken, and summaries of the interviews were prepared to capture immediate impressions and reflections. Each audio-recorded interview was transcribed verbatim by the lead author and a research assistant, and the lead author was responsible for quality checks of the transcribed text. Each respondent was classified into a broad descriptor categorization to maintain anonymity and hence no organizational affiliations or socio-demographic information is shared.

Table 7. 1: Types of interview respondents, organization, and gender

Category of respondents/organization affiliation	**National/state**	**Gender**
Technical Expert	State	Male
NGO Member	State	Female
Academic Organization	National	Male
NGO Member	State	Male
Advocacy Organization	National	Female
Advocacy Organization	National	Female
Technical Organization	National	Male
NGO Member	State	Male
Health Department	State	Female
Health Department	State	Male
Education Department	State	Male
Academic Organization	National	Female
Legal Expert	National	Male
Police Department	State	Male
Health Department	State	Male
Technical Organization	National	Male
Technical Organization	National	Female

Data analysis & synthesis

We started with compiling and reading all the transcripts to familiarize ourselves with the data, and to reflect on the notes from each of the interviews. We undertook a thematic coding approach which included both inductive and deductive approaches[34] [35]. We developed a codebook through an iterative process of initial manual coding of transcripts. The coded texts were organized into themes, such as policy context, process, critical drivers, successes, challenges and suggestions for strengthening the program (supplemantary file-1). Each of the themes was reviewed and studied to build a coherent narration and to note differences in perception and meaning expressed by the interviewees. Efforts were made to triangulate information from both the data sources.

Ethics approval

The ethics approval for the study was obtained from the Institutional Ethics Committee at the Institute of Public Health, Bengaluru, India (IEC-ER/01/2018) and the Faculty of Medicine, McGill University, Montreal, Canada (A05-E24-18B).

Results

We present our findings in the framework categories of context, content, actors and process as identified by the policy triangle[28]. The context is described in the settings and context section above.

Policy Content

We reviewed policies, acts, laws, government orders and circulars at the national and state level. We summarize the key points below in a timeline in Figure 7.1. The details are annexed in the Supplementary files 2 and 3.

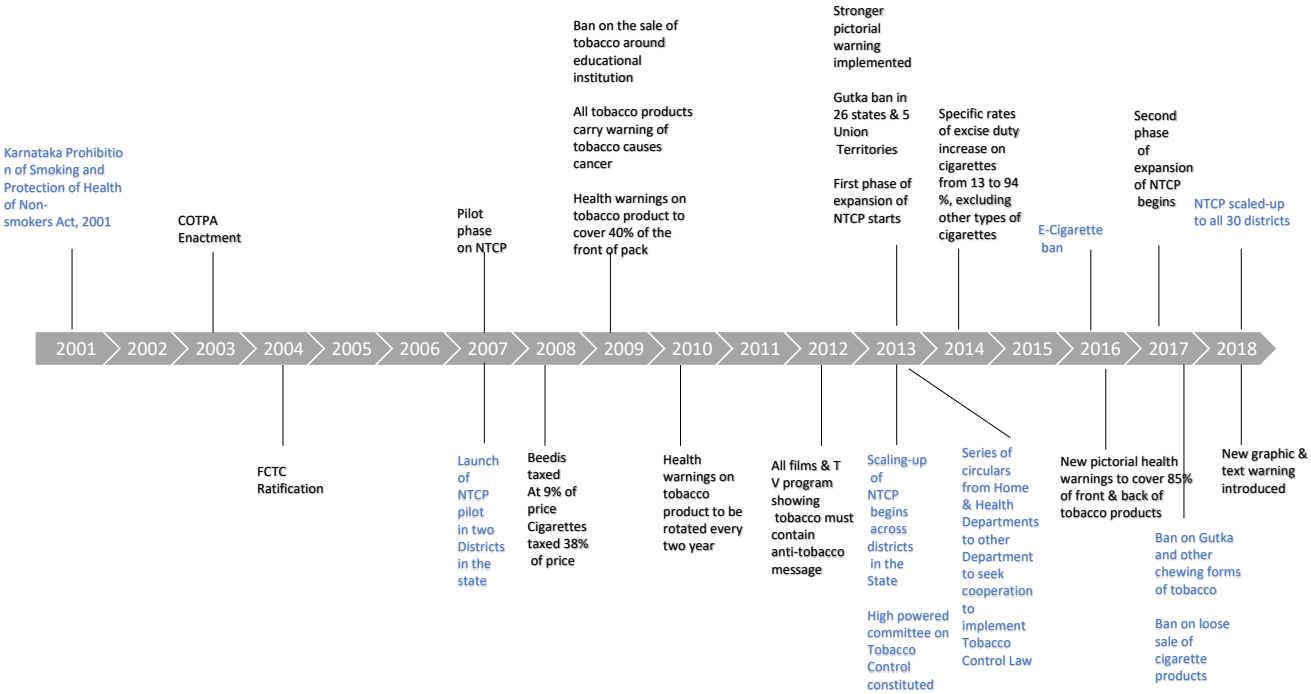

Figure 7. 1: Timeline indicating key policy content development at the national (black) and state (blue) level

Throughout India, COTPA 2003 remains the principal law providing guidance on restrictions regarding smoking in public places: prohibition on advertising, promotion and sponsorship; regulation of sales to minors; packaging and labelling; and enforcement and penalties. However, legal provisions against tobacco started as early as the 1975 *Cigarette Act*. The regulation of tobacco was addressed under the national 1940 *Drugs and Cosmetics Act*, which banned the manufacture and sale of toothpaste and toothpowders containing tobacco. In 2000, the Indian government prohibited direct or indirect production, sale or consumption of cigarettes and other tobacco products by amending the *Cable Television Networks (Regulation) Act* of 1994. The *Food Safety and Standards (prohibition and restriction on sales) Regulation 2011*, prohibited tobacco and nicotine from being used in any food products, and was used by several states to ban the manufacture, distribution, and sale of "gutka" or "pan masala" (a chewing form of tobacco).

The main policy document for the implementation of tobacco control measures is the *National Tobacco Control Program Operational Guidelines* of 2013 and 2015, which provides guidance for training, information, education and communication activities, the monitoring of tobacco control laws, coordination with other institutions, and setting up cessation facilities. It also provides the financial support for these activities and supports human resources to operationalize the program at national, state and district levels.

Karnataka was one of the first Indian states to ban e-cigarettes in 2016. It prohibited the sale, manufacture, distribution, trade and advertisements of Electronic Nicotine Delivery System (ENDS), noting that nicotine in food products and consumption is banned under the *Food Safety and Standard Act* of 2006 and *Food Safety and Standards (Prohibition and Restriction on Sales) Regulation 2011*. Circulars and follow-up orders were issued by the Deputy Secretary to the Health and Family Welfare Department to ensure that senior state bureaucrats and district functionaries would be able to implement this ban.

Actors

The tobacco control program's development involved the participation of diverse individuals and organizations, where some were mandated to realize the program and others were motivated to reduce the tobacco use. Overall, we found an interdependent, reciprocal and networked relationship between these organizations and individuals to limit the use of tobacco. These organizations did not work in silos and often had a supplementary and complementary role to each other; we further explain this in the processes section. The main actors, their roles and activities are depicted in table-7.2. Figure-7.2 illustrates key actors and their roles in the policy process for tobacco control policy. All actors play interconnected, reciprocal and overlapping roles, except for the tobacco industry (depicted by red colour), which influenced the policy adoption in a negative manner.

Table 7. 2: Key actors, their roles and activities in the tobacco control program

Actors	Role	Responsibilities
Ministry of Health & Family Welfare/ State Department of Health and Family welfare	Leadership on policy issues and implementation	-Convening of expert groups/meetings/advisory groups -Assessing policy alternatives

		-Drafting/issuing policy guidelines -Implementation guidance and support -Seeking support from associated ministries/departments
Technical support organizations (global and international scientific organization)	Technical support for policy development and implementation	- Support Ministries of health at the national/state level -Drawing lessons from the global/regional experience -Compiling research evidence to support policy -Organizing expert consultation -Implementation capacity building
Research organizations (national and state)	Technical support Brokering information	-Conducting contextual research (estimating burden of disease, implementation research, policy evaluation) -Sharing/ translating scientific information into a common language
Non-governmental organizations (global, national and state level)	Implementation and Monitoring Political sensitization Legal support Advocacy	-Monitoring the global activity of the tobacco industry -Monitoring tobacco industry activity during negotiations -Monitoring positions of delegations during negotiations -Filing Public Interest litigation (PILs) -Creating political mobilization
Media (national and state)	Information sharing Public awareness	-Generating awareness & creating public opinion
Policy entrepreneurs (national and state)	Brokering information Knowledge translation	-Organizing information sessions for policymakers -Channeling information to governments -Providing alternate policy mediations based on evidence
Individuals/Citizenry	Personal legal interventions	Filing Public Interest Litigations (PILs)
Tobacco industry	Interest group-lobbying	-Push for pro-tobacco products, newer products like e-cigarettes and vaping devices -Creating alternative narratives/doubts by

		overplaying economic and livelihood significance -Negating implementation of tobacco control laws by marketing and advertisement -Filing multiple legal cases across the country

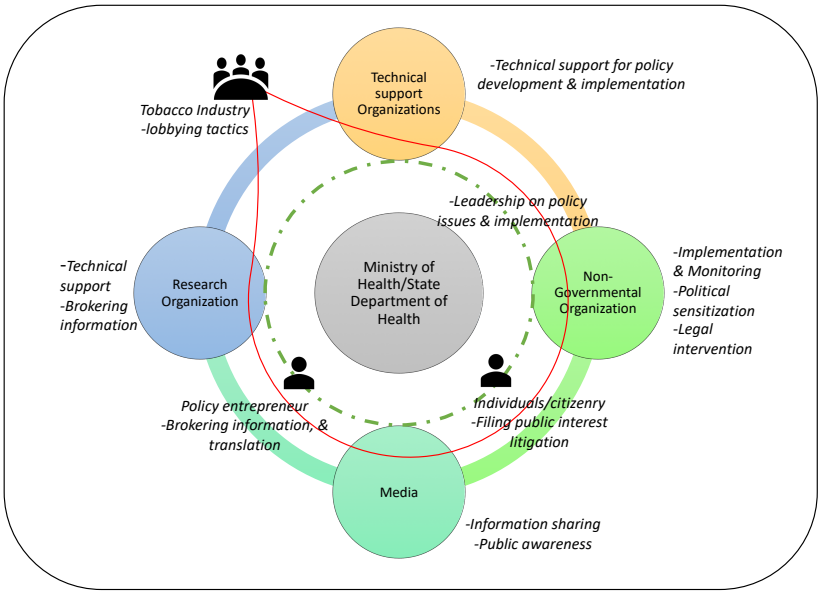

Figure 7. 2: Key actors and their roles in the policy process for tobacco control policy. All actors, except for the tobacco industry (depicted by red colour), influenced the policy adoption in a positive manner.

Processes

We contextualize the Berlan *et al.* (2014) approach to analyze the processes in a non-linear manner, capturing the back-and-forth process of endorsement and rejection[36]. The most important steps are: the role of research and evidence in the generation of policy alternatives; deliberations, consultation and the role of expert opinion; political sensitization and legal interventions; lobbying to influence policy decisions; and state adoption and implementation. These are key steps in the process but are not necessarily sequential and may take place concurrently, influencing and overlapping one other. While these policy processes are fluid and continuously adapting and modifying, the tracing of these steps allows for the identification of the processes and activities engaged at each stage and provides analytical clarity to the reader.

Generation of policy alternatives: the role of research and evidence

The presence of evidence-based knowledge and the ability to adapt and synthesize contextual knowledge was expressed as the foundation of the tobacco control program in India. The generation of policy alternatives was taken up by research and technical support organizations through two interrelated processes: first, by conducting policy relevant primary research; and second, by sharing available best practices from across the globe. According to a state-level technical expert:

"So here there was an academic guy or an institute like XX that was actually telling us what works and what does not work and trying to influence the policy. We are trying to make up a policy, and they share that, according to this certain piece of research, this intervention doesn't work, so please don't waste time on this. That's the way we actually envisaged the synergies, that we are going to use out of academia to change policy."

(State level technical expert)

These research and technical organizations worked in complementarity by identifying the needs of the policy community and providing them with the best available knowledge and link to technical experts to discuss the alternatives available. However, apart from the global best practices, context-specific research allowed for the adoption of relevant practices in the NTCP. For example, conducting grouped Randomised Control Trials (RCTs) to observe differences between schools receiving tobacco control intervention and commissioning studies on the economic impact of tobacco enabled the MoHFW to scale up its evidence base. Similar research support was available at the state level, where initial studies focused on descriptive and explanatory studies to understand the nature of the tobacco control challenges and how implementation can be better adapted and provide essential feedback.

The policy-relevant research of these research organizations took a "*360-degree approach"*, including studies of individual, structural and socio-cultural determinants associated with tobacco use, especially the attractiveness of smokeless forms of tobacco to young people, and socio-cultural traditions related to chewing tobacco. Specific threads of research also focused on the role and influence of the tobacco industry, and aspects of conflict of interest within government related to

tobacco control. Such contextually relevant scientific evidence contributed toward informed decision-making.

Deliberations and consultations: discussions and expert opinions

During the process of deliberation and consultation, the MoHFW and State Health Departments provided the leadership, and the technical organizations also joined in to provide expert opinions. The enactment of COTPA in 2003 and the guidance for implementation of the NTCP and FCTC stressed the importance of engaging multiple stakeholders in order to seek cooperation and coordination from multiple sectors and organizations, to seek a system-wide, comprehensive effort. These mandates provided an "invited space" [37] for multi-stakeholder consultation and engagement. Examples of a national inter-ministerial group, a state-level high-powered committee on tobacco control, policy level deliberation forums and consultation with the Ministries of Finance, Labour and Welfare, Commerce and Information were quoted by stakeholders as ways of aligning mandates of different departments for tobacco control and promoting an multisectoral approach. However, these forums to engage and get agreement between ministries required considerable coordinating efforts and regular monitoring to ensure follow-through on decisions. One of the core challenges remained to align the mandates of the different ministries; for example ministry of health was mandated to fight against tobacco, but the agricultural ministry promoted tobacco cultivation as a cash crop, which affected participation, consensus building and the unified work for tobacco control.

The MoHFW convened and hosted numerous other expert committee meetings during the course of the tobacco journey, and these were supplemented by consultations organized by the technical support organizations towards supporting policy development, bringing together a network of experts, civil society organizations and collating and presenting research evidence from international settings. One of the national-level respondents shared:

"We bring the best technical support to the table. If we don't have the expertise within, we bring the best experts to the table. If we don't have the best manuals in place, we bring down manuals, we create; we get the best heads around the table. Most of the committees are built of local experts and if required, global experts wherever necessary." *(National-level technical expert)*

These consultations also served as a platform to translate complex research language into a commonly understood narrative. For example, during the expert committee meetings, members of civil society and research experts translated scientific evidence to help policy communities to understand and utilize it by explaining them in lay terms and weighing their opinion on the evidence shared, and thus linking 'evidence to policy translation'. These consultations and deliberation with multiple stakeholders across sectors and institutions enabled broad-based discussions, evidence translation and policy diffusion.

The mainstay: political sensitization and legal intervention

The advocacy efforts in tobacco control have focused on mobilizing legal and political components of policy and utilizing them as a mechanism to generate momentum for action. Political sensitization was aimed at generating momentum to promote leadership for policy initiatives and advocacy organizations and the NGOs actively engaged engaged in the process. This involved engaging and sharing evidence with elected leaders and bureaucrats like political leaders, members of parliament, ministers and deputy chief ministers, including secretaries across different ministries. These organizations also enabled the members of parliament to answer questions related to tobacco, thus gaining their trust and working with them mutually. The role of policy entrepreneur was also highlighted in generating political momentum, as these entrepreneurs had sound scientific knowledge and were respected as experts on the subject matter, and engaged with the political party representatives. This allowed for the advancement of agendas in parliamentary sessions to draw attention, build political momentum and action on the issues.

The aspect of legal mediation, using PIL, was important in the Indian context, as the program faced resistance from the tobacco industry and required legal safeguards to ensure the public interest. The legal guidance is provided by COTPA, a national law; however, it was the NTCP that provided the position for legal advisors at the national and state level to systematically engage with legal cases. This allocated necessary human and intellectual capital, trained in legal practice, to counter the legal aspects of industry interference.

Support from individuals, non-governmental and civil society represented a key effort in legal interventions. PILs questioned the intent of governmental decisions,

aspects of exploitation of deprived groups and argued for the promotion of a health and human rights approach. Some of the key PILs at the national level focused on the enforcement of graphic warnings on tobacco product packaging; at the state level, PILs challenged the participation of ministerial bodies in industry-sponsored events and selling tobacco to minors or in the vicinity of educational institutions. The Indian judicial system was described as very supportive of tobacco control measures by the respondent groups. Both the high courts and the Supreme Court of India provided crucial judgements that banned chewing forms of tobacco, tobacco industry sponsorship of government meetings and maintained 85% pictorial warnings on the tobacco products packaging. Some stakeholders described the judiciary decisions as vital in preventing the industry to go *"forum shopping*", where they adopt the practice of getting their cases heard in a particular court that is likely to provide a favourable judgement.

"*Research forms the base of it and, of course, articulating that research well to the policymaker. But eventually, when the push comes to shove, it's always judiciary because the industry always goes to court and they do forum shopping, they go all over the country."*

(National level advocacy organization)

The judicial rulings were seen as "*providing a safe gateway*" to implement tobacco control measures, particularly with the legal foundation of COTPA. However, these legal interventions, like PILs, were often contested, dragging on and at times overturned by legal interventions by the tobacco industry. The example of section 7 of COTPA was quoted as an example, which provides the pictorial health warning on the tobacco products packaging. The tobacco industry representatives constantly challenged the governmental decision to implement strong pictorial warning, and this led to many back-and-forth legal cases lasting over a decade. Thus, in order to support such legal battles required legal advocates to be vigilant and a constant engagement to maintain the legal decisions in favour of the public interest. The role of media was quoted to be very supportive and important in highlighting and informing the general public about current advances in the program. Media engagement was defined to be systemic where national media houses and local vernacular media covered the legal stories, keeping the public interest alive and garnering support through mass media.

This media engagement was often termed as ‘media advocacy’ and was cited as an efficient investment, which had a wider outreach with limited monetary resources. The political sensitization and legal interventions were essential additional safeguard mechanisms for efforts of the tobacco control program.

Tobacco industry lobbying to influence policy decisions

The tobacco control program in the country faced the challenge of countering tobacco industry measures, as tobacco has a revenue generation component and drives the industry to maintain its proceeds. The tobacco industry engaged in lobbying campaigns, influencing the policy processes and the stakeholders involved at both state and national levels. Instances of both ‘inside’ and ‘outside’ lobbying were mentioned by the respondents. Inside lobbying included holding positions on executive committees or agencies by individuals or groups having an interest in tobacco production or with tobacco industries. Outside lobbying included sponsoring events by tobacco industries, organizing and coordinating the tobacco farmers’ movement against tobacco control to influence policymakers and using alternate means to advertise tobacco products without branding to counter advertisement laws. The industry has also tried to frame tobacco control as being “anti-farmer” – since tobacco cultivation as their source of livelihood.

Although Karnataka is a tobacco-cultivator state, we did find examples of organizations and research institutes that attempted to negate these accusations. They worked on identifying a combination of crops with high returns, as well as simultaneously engaging with farmers to enable them to shift from tobacco cultivation to alternate crops. These organizations presented the farmer narrative in terms of what would be required for transitioning to such alternatives:

“So, the idea is to encourage farmers’ to understand their narratives and what are their demands. Many farmers want. for example, a better water supply, if you want them to switch because many other crops are water-intensive. They want some sort of subsidies to grow (other crops).”

(State level NGO member)”

Presenting alternate narratives and sharing the details of farmers’ needs, along with the advocacy efforts of civil society groups, helped counteract the tobacco industry’s

argument that farmers would be harmed by tobacco control laws. The industry was described as resourceful, intuitive, and highly innovative in promoting new ways to either increase the uptake of existing tobacco products or introduce newer tobacco products. It also played a key role in the promotion, advertisement, and distribution of tobacco and tobacco-related products.

Guiding implementation: state adoption and moving into action

Implementation at the state level was guided by the operational guidelines set under NTCP and spearheaded by the State Health Department, especially the State Anti-Tobacco Cell. In the initial phase, action at the state level centred on piloting implementation in two selected districts cells. The effort was funded by the Ministry of Health and Family Welfare (MOHFW) and subsequently co-financed by the state government. Expansion of NTCP began in 2013-14, and by the end of 2017-18, it was expanded to all 30 districts in the state. The process was gradual, as actors had to be sensitized first, and specific structures had to be established.

"Initially we (have) sensitized the key persons of the stakeholders and the chairman, and they have issued few circulars saying that formation of district tobacco cell, formation of state cell at the state level and formation of squads (multisectoral team to conduct enforcement of the law), all these things, it came through the state level directions and the district level directions."

(*State level health official*)

During the early phases of implementation, technical support organizations worked directly with this cell in providing technical support through human resources or by providing capacity-building support, working on both fronts of management and technical training. The technical support staff worked with the health department in creating a 'politico-administrative framework' to sustain the program at the state level, as they built necessary institutional structures and mechanisms.

The other key 'institutional mechanism' at the state level that enabled decisions and resolutions to activate tobacco control was the establishment of a what was known as the "High-Powered Committee on Tobacco." The membership comprised all the principal secretaries of key departments, civil society and scientific representation. This committee issued orders to the Departments of health, education, police, and

urban development, underlining the importance of joint efforts required for tobacco control. This, in turn, was followed by respective departments issuing circulars to their own divisions, asking them to support the display of no-smoking signages and creating smoke-free environments. The committee encouraged action *"by creating structural shifts and forming a platform*" to apply for the "*three Rs-Report, Review & Reinforce through a higher level body*". This also acted as a mechanism to garner the support of non-health departments to take action.

Sensitization and uptake of policy were initiated through numerous training programs and workshops. These aimed at state and district administrative levels across various departments, facilitating the execution of institutionalized enforcement mechanisms, such as district and state-level coordination committee meetings, and the formation of tobacco enforcement teams at the district level. The aim was to ensure support across stakeholders from the highest level to the enforcement officers. The sensitization involved information on the burden of tobacco use, videos of tobacco victims, briefing on COTPA sections, the number of fines to be collected, and the role of each department/stakeholder. The engagement of local media to increase awareness about tobacco control and report on key enforcement activities was also highlighted as an important outreach media strategy by respondents.

At the state level, NGOs and advocacy organizations played an important role in enabling the implementation environment. This required nudging of various departments to issue government orders with regard to participation, coordination and implementation. These state orders acted as official reminders and highlighted the role of each department in the program, and facilitated coherent training, sensitization and hiring or allocation of designated human resources for the program across all departments:

"Because as a mandate, they are supposed to train and sensitize different stakeholders, but they can't go each department and get the orders out. They can only work what's there, as they come from the health department, they can only ensure that their seniors issue strong departmental orders. Even with a nodal officer (present for the program), he cannot go to secretary health and say sir, please issue this order, that also civil society has to do".

(State-level administrator.)

NGOs, research and technical support organizations also supported the State Health Department by providing assistance in compliance assessment surveys, and aiding in monitoring, evaluation and feedback on the ongoing implementation activities in the field. The stakeholders engaged during the expansion described this as a challenging start, as it was difficult to gain priority for a new program that required cooperation and support across many departments. Stakeholder sensitization process of senior officers from state and district level required constant and active engagement.

Discussion

The analysis of the development and adoption of tobacco control policies in India reveals a process of collaborative action among most of the actors identified in this study. The tobacco control issue, characterized by the need for interdependency and interaction, depended on strong coordination amongst all players as a pre-condition. At the same time, working towards preventable and avoidable deaths provided the incentive to work together. This collaborative action was also catalyzed by key drivers. In a "Collaborative Governance' framework, these are considered the drivers of policy process initiation that can set the direction for collaborative practices, and as the necessary conditions for the impetus and success of collaboration[38,39]. Our study found the key drivers for this process to be the institutional mechanisms for collaboration, multi-level cross-sectoral leadership, and political motivation and mobilization.

Institutional mechanisms for collaboration

The provision of institutional mechanisms under NTCP facilitated coordination and collaboration across different ministries and at the state level enabled implementation support through a three-tier structure and necessary financial and human resources. The other institutional arrangements to aid decision-making were the formation of an inter-ministerial group at the national level and a high-powered committee at the state level. At the national level, this group worked towards bringing alignment between ministries with different mandates in tobacco control, such as health, commerce, and agriculture. At the state level in Karnataka, this committee formed a key decision-making platform, led by the principal secretary of the state, and participation from all

other departments. This committee served to review, coordinate, problem-solve, and issue key directives/circulars for effective implementation.

However, across national and state levels, concerns were expressed about the functionality of these coordination committees, which often needed nudging and steering to transform words "*on paper*" into real action. The supportive role of advocacy and policy entrepreneurs was noteworthy in making these mechanisms truly functional.

Multi-level, cross-sectoral leadership

The tobacco control program demonstrated leadership initiatives across national and state governments, ministries and policy sectors, researchers and policy advocates. The supportive and facilitative roles played by these actors enabled the functioning of institutional platforms and provided stewardship. The national level stakeholders noted the MoHFW's key role in providing the leadership on policy issues. The ministry took a steering role in examining evidence for policy and legislation by forming several technical advisory committees to provide guidance. At an individual level, ministers at the national and state level took crucial decisions regarding nationwide cigarette package warnings and banning the use of "gutka" at the state level. In administrative roles, the commissioners and respective heads of the departments became local champions in participating and leading efforts for policy adoption.

While it was important for health departments to lead these efforts, it was also necessary to form alliances and build leadership within other engaged sectors for the uptake of policy and implementation. As one state level respondent remarked, "*that is what takes along the program*", highlighting the importance of leadership across sectors. At the state level, collective action required building collective leadership across bureaucrats, police officers, health officers, and NGOs.

This leadership was also evident within the medical community, as medical doctors trained as public health professionals, researchers and cancer specialists, engaged with the process of evidence generation, advocacy for policy uptake and furthering and refining implementation. Their role was seen as creating synergies between realms of policy and science. They utilized their positions of power to bring leadership and influence on the issue of tobacco control.

Political attention and mobilization

The tobacco control program garnered considerable political attention as politicians across political parties, whether in government or opposition, took a consistent interest. Political pressure was evident in press conferences, civil society involvement, as well as in asking key questions and debating issues in the parliament. At times, politicians were personally motivated by the issue of tobacco claiming lives or were catalyzed by pressure from advocacy organizations. However, the political commitment towards tobacco control was not always positive. For example, respondents from civil society, highlighting the example of the bidi industry at the state level, detailed that some of the ownership of this industry is shared by politicians, and it was not necessarily always easy to gain political momentum on tobacco control in the initial years of COTPA.

The political support also remains contested, especially where cabinet decisions were required. The other common problem noted with political mobilization was the need for constant engagement and adaptation to changes in political regime, such as identifying the political advocate who would be the 'best buys' for the ongoing support of the tobacco control initiative. However, despite these limitations, the political environment has been largely supportive by providing measures such as a dedicated national program, enhanced taxation on tobacco products, and the gutka ban at the state level.

Apart from these critical drivers, the overall dynamics of collaboration centre around the process of actor engagement, motivation and the capacity for joint action[38,39]. In tobacco control, this collaboration was built on the creation of trust, shared understanding, and commitment to the process. In this case, the "invited spaces"[37] for engagement were provided through national and global policy mandates, allowing partnerships among organizations, stakeholders, departments and sectors for joint action. The roles and responsibilities played by these actors were readily accepted as being 'credible' and 'legitimate,' and well-respected as each actor was specialized in their own domains of technical support, research and advocacy in health in India. The collaborative thread binding or sentiment motivating a joint call for action was the narrative of "tobacco kills", and that tobacco-related deaths are preventable. It served as a very strong motivation to work together towards promoting health and human rights as a counterweight to arguments about the economic gains from addictive products[40,41]. Hence, collaboration against tobacco as a common enemy

causing public harm provided mutual benefit and gain, sustaining joint action. This case of a collaborative, multisectoral policy clearly identifies that the terrain of health policy analysis has become more networked and represented by plural stakeholders. Hence, it becomes essential to map these wide ranges of stakeholders and interest groups to understand their perspectives and interests to engage with the policy.

Challenges in tobacco control and future considerations

Despite the fact that the collaborative process builds on finding common ground, objectives and trustworthy relationships[42], it is not free from conflict[43]. The pre-condition remains compatible and interdependent interests[38], and the most common challenge remains with the process of collaboration and substantive problem-solving[44]. The tobacco control program in India has been successful in initiating and sustaining collaborative work, but it remains highly contested, complex and challenging. Historically, India has been a cultivator and exporter of tobacco, and this crop remains a source of individual and government revenues. The creation of the NTCP exposed conflicting sectoral goals and institutional mandates for other ministries, like the Ministry of Commerce and small-scale cottage industries, under which bidi is covered, or Agricultural Ministries with research institutes for tobacco, thus leading to policy incoherence. In such complex policy environments sharing responsibilities and implementing collaborative, multisectoral action becomes challenging.

As a result, efforts until now have largely focussed on curbing the demand side of tobacco, while much more work on the supply side is required. However, there have been thinking and early action especially on behalf of MoHFW, in seeking collaboration with Tobacco Research Institutes and Ministry of Agriculture to address economically viable alternate crops[45], support by technical support groups to organize expert consultations[46]. Initiating such action would also require concentrated efforts from Ministry of Agriculture and other stakeholder departments to enable wholistic planning from providing subsidies for alternate crops to strengthening its supply chain and distribution process, engaging the farmers at every step[47].

The second interlinked challenge is the influence of the tobacco industry, which is well-documented globally[48–50]. Tobacco industries are multi-national corporations, powerful, richly resourced, with experienced lobbying tactics. They have innovated in marketing newer tobacco products to circumvent tobacco legislation and have

hindered the processes of policy adoption and implementation of tobacco control. Their role has been documented in influencing the implementation of pictorial warnings on tobacco products in India[51]. The use of legal instruments and litigation has been the most successful mechanism to limit industry interference. Hence, the presence of a strong legal framework and the mobilization of political and societal actors has been central to the tobacco control program in India.

There is now a need for a 'second generation' of tobacco control in India that is being referred to as 'COTPA-II'. This would require strengthening the legal foundation, as there are current gaps in the law for point of sale (vendor licensing) and advertisement bans, non-sensitivity to smokeless forms of tobacco, and the number and smaller amount of fines charged. The COTPA amendment was opened by the Ministry of Health in 2015, which followed a pre-legislative consultation process and was available in the public domain. But, later, the amendment bill was withdrawn to re-look at the draft provisions as it faced resistance from industry representatives, certain farmer groups and retailers. This opposition was demonstrated widely across the country and captured by various media outlets. In addition, the next stage of policy reform has to address the supply side of tobacco, addressing core issues of industry interference and alternate cultivation promotion. However, sustainability of funding for advocacy efforts and continued research would be imperative to move into the next phase of reforms.

Strengths and limitations

This multisectoral case study research focussed on tobacco control policy in India, highlighting the key contextual features, actors, processes and drivers, and providing a comprehensive policy landscape. Moreover, the study interviewed actors across different government sectors, civil societies and national-subnational levels and applied a framework that takes into account the role of political dimensions, role and interconnected relationship of key actors in the tobacco policy environment. However, there are certain limitations. First, our study at the state level focuses on a single case, Karnataka, which is a tobacco-producing state, and there may be significant variation in terms of political regime, economic growth models, the vibrancy of civil societies and overall tobacco landscape; hence, we caution adapting the findings for other multisectoral policies and in other contexts. Second, there is a temporal gap, as major laws and policies began as early as 2003, thus exact sequential details and some

points in the trajectory may not have been captured through interviews. Additionally, there have been almost two decades of evolution of these policies, thus limiting the respondents recall of exact events, especially during the early phases and development of tobacco control. Third, we were unable to secure interviews with certain selected government officials, and hence some of their perspectives were not captured, which may have limited our understanding of the facts and interpretation of perceptions around the evolution of tobacco policy. Finally, we did not engage with the tobacco industry and representatives of farming communities and cooperatives, as this would have substantially increased the scope of the study. Thus, the findings might not fully incorporate potentially important perspectives, such as other viewpoints of these groups of actors. However, the respondents of the study did mention the roles played by these stakeholders, but their perspectives are absent in the study, and future studies can include these stakeholders in their research.

Conclusion

Findings from this analysis highlight the complex, dynamic, constantly evolving and multi-faceted nature of multisectoral health policy processes. It sheds light on the enablers for policy development and adoption, including the need for collaborative action, mobilization of legal and political frameworks, and social advocacy to bring about intended policy change. The process of collaboration, however, is not a panacea, and its associated challenges and paradoxes that need to be understood and contextualized. Insights from this analysis may help practitioners and researchers understand the policy process in the case of a multisectoral policy, especially in an LMIC context. The analysis also shares how different stakeholder groups can engage and influence policymaking and the process of adoption. The findings also suggest that in a multisectoral policy, a whole-of-society approach or the engagement of a whole system approach rooted in realizing the need for a joint action is necessary to propel the collaborative process. The critical challenges identified here further enhance our understanding and contribute towards the generation of knowledge in terms of ‘what needs to be done’ to advance such policies in the context of sustainable development, where the nature of problems and their solutions require working across boundaries to establish collaboration.

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Supplementary File

Supplementary Table 1: Thematic categories & themes

Broad Thematic Category	Themes
History, evolution & context	Context of initiation (national/state/international) Role of acts/policies Participation/engagement of key organizations/individuals in shaping Evolution/changes over the last decade
Description of role & engagement	Role in the tobacco control program Reason for engagement Engagement process, key events
Critical points/junctions	Most critical points that shaped the policy formulation
Current policy status & impact	Status of current policy (national/state) Impact at national/state level Role of Key partners/institutions/individuals/organization
Success/achievements	Description of success at national/state level Reason behind those success
Challenges	Description of challenges at national/state level Reason behind those challenges
Suggestions/strengthening	Strengthening of program/changes Future challenges

Supplementary Table 2: summary table of national documents reviewed

Policy/Act/circular	Sections/details of the policy	Details
National level		
The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003 (Act No. 34 of 2003) (COTPA)	- The first provisions of COTPA entered into force on May 1, 2004. These provisions included Sections 1-5, 6(a), 12(1)(b), 12(2), 13(1)(b), 13(2), 14, 16, 19, 21-31 - Sections 12(1)(a), 13(1)(a), 15, 17, 18, 32, and 33 took effect on July 30, 2009 - Section 6(b) regarding the sale of cigarettes around educational institutions, took in effect from 18, 2009	- Principal law governing tobacco control in India - Restrictions on smoking in public places; advertising, promotion and sponsorship; sales to minors; packaging and labelling; and enforcement and penalties
The Food Safety & Standards Act 2006 The Food Safety and Standards (Prohibition and Restrictions on Sales) Regulations, 2011	- Authorises State Commissioner of Food Safety to prohibit, the manufacture, storage, distribution, or sale of any article of food, in the interest of public health -Prohibits tobacco and nicotine from being used in any food products.	-Several states utilized this authority to ban certain forms of smokeless tobacco. Courts in several states have relied on this provision to impose bans on the manufacture, distribution, and sale of “gutka” or “pan masala.”
Tobacco Packaging & Labelling - Cigarettes and Other Tobacco Products Packaging and Labelling (Amendment) Rules, 2008. 1) G.S.R. 182(E) announces the Cigarettes and Other Tobacco Products (Packaging and Labelling) Rules, 2008- March 15, 2008	-contains substitute language regarding health warnings on retail packaging, requiring warnings to be printed on external packaging such as cartons. -issued under COTPA, the rules specify components of the health warnings (i.e., content, size, rotation, etc.), but various provisions in subsequent rules replace certain language in the 2008 regulations.	

2) G.S.R. 305(E) announces the Cigarettes and Other Tobacco Products (Packaging and Labelling) Amendment Rules, 2009-May 3,2009	-Contains substitute language for the definition of “package” and for the location of the health warning. It also deletes the requirement that the warning be located on both sides of box and pouch type packs.	
5) G.S.R. 1866(E)- 30 July, 2009	-It authorizes certain officers, in addition to those already designated in COTPA, to carry out the entry, search, and seizure provisions in COTPA Section 12 (with respect to any violation of the Act) and Section 13 (with respect to violations of tobacco product packaging and advertising).	
6) G.S.R. 680(E)- 15 September, 2009	- It adds to the listing of additional persons authorized to collect fines for the violation of specified smoke free rules.	
7) G.S.R. 985(E) announces the Cigarettes and Other Tobacco Products (Packaging and Labelling) Amendment Rules, 2010- 20 December, 2010	- this notification contains substitute language on the issue of rotation, requiring that health warnings be rotated every 24 months instead of one year. The rule also re-establishes the May 2009 health warnings, ensuring that pictures of a lung x-ray and diseased lungs continue to be displayed on smoked tobacco product packages and a picture of a scorpion continues to be displayed on smokeless tobacco product packages	

8) G.S.R. 570(E), the Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2011, amends a rule announced in G.S.R. 182(E) – 26 July, 2011	- regarding the languages in which the health warnings are written and updates the components of the health warning	
9) G.S.R. 417(E) announces the Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2011- 27 May 2011	-the rules establish new graphic health warnings for packages of smoked and smokeless forms of tobacco. The rules also increase the number of warnings for smoked tobacco products from two to four, and increases the number of warnings for smokeless tobacco products from one to four.	
10) G.S.R. 724(E) announces the Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2012- 27 September, 2012	- The Rules establish new health warnings for tobacco product packaging, effective April 1, 2013	
11) G.S.R. 724(E) announces the Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2012- 24 September 2015	-Called for new health warnings covering 85% of the front and back of tobacco product packaging	
12) 727(E) announces the Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2014. 15 October, 2014	- The Rules establish, among other items, new health warnings to cover 85% of the front and back of tobacco product packaging.	
13) G.S.R. 292(E) announces the Cigarettes and other Tobacco	- The rules establish that the second of the two health warnings contained in G.S.R. 727(E) is to be used on product	

Products (Packaging and Labelling) Amendment Rules, 2017. 24 March, 2017 14) G.S.R. 283(E) announces the Cigarettes and other Tobacco Products (Packaging and Labelling) Amendment Rules, 2018.. 26 March, 2016 15) G.S.R. 331(E) announces the Cigarettes and other Tobacco Products (Packaging and Labelling) Second Amendment Rules, 2018. 3 April, 2018	packaging beginning April 1, 2017 - The amended rules establish that the existing health warnings are to remain in rotation until August 31, 2018 - The amended rules establish the next round of pictorial health warnings, which are required to appear on tobacco product packaging beginning on September 1, 2018. The new health warnings also include a quit-line phone number.	
Tobacco Advertising, Promotion and Sponsorship Cable Television Networks (Regulation) Act, 1995 (CTNA) and Cable Television Networks (amendment) Rule 2009 - G.S.R. 345(E) G.S.R. 619(E) G.S.R. 786(E) G.S.R. 708(E)	- Prohibits direct advertising of cigarettes or tobacco products - amends the Rules by substituting new provisions on point of sale advertising and adding a definition of indirect advertising - provides additional point of sale rules - establishes rules for television and film and print and outdoor media - updates the rules for television and film	- Implementing rules prohibit direct advertising of tobacco products on Indian cable networks, but permit the indirect advertising of such products under certain circumstances. (Acc to July 2010 Ministry of Information and Broadcasting Directive). -CTNA does not regulate international cable television networks.
National Tobacco Control Program- Operational Guidelines 2013/2015	Government of India launched the National Tobacco Control Program (NTCP) in the year 2007-08, with the aim to	The main thrust areas for the NTCP are as under: Training of health and social workers, NGOs, school

	create awareness about the harmful effects of tobacco consumption, (ii) reduce the production and supply of tobacco products, (iii) ensure effective implementation of the provisions under “The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003” (COTPA) (iv) help the people quit tobacco use, and (v) facilitate implementation of strategies for prevention and control of tobacco advocated by WHO Framework Convention of Tobacco Control	teachers, and enforcement officers; (ii) Information, education, and communication (IEC) activities; (iii) School programs; (iv) Monitoring of tobacco control laws; (v) Coordination with Panchayati Raj Institutions for village level activities; (vi) Setting-up and strengthening of cessation facilities including provision of pharmacological treatment facilities at district level

Supplementary Table 3: summary table of state level documents reviewed

Policy/Act/circular	Sections/details of the policy	Details
State level		
Circular issued by Director general of police, and director general of Karnataka fire and emergency services NO GBC (1) 190/2014. Dated: 22-09-2014	Addressed to: 1) All the chief fire officers. 2) All the regional fire officers. 3) All the district fire officers. 4) All the fire station officers. Include Section 4 of COTPA into the fire safety code for buildings in Karnataka.	Section 4 of COTPA into fire safety code for buildings. No Smoking Board as specified in schedule II of COTPA to be displayed at entrance of public place.
Order Issues by: Member Secretary State Anti-Tobacco Cell Bangalore DHS/Tambaku/ 27-11-12. Dated: 5-1-2012	Addressed to: District Health and Family welfare officers and Member secretary District Anti -Tobacco Cell. Making School Environments Tobacco free	Section 6 of COTPA Tobacco free schools
Circular issued by Commissioner Department of Public Education C4(6) Sa.Sta.Dhu.Ni 01-2013-14. Dated: 5-11-2013.	Addressed to: All Deputy directors Department of Public Education. Holding a state level awareness program about ill effects of Tobacco to students and teachers.	Section 6 of COTPA
Circular issued by Under secretary Transport Department. Sam :Sa Ri E Sa Sam E 2014 Dated: 13-2-2014	Circular issued by Under secretary Transport Department. Sam :Sa Ri E Sa Sam E 2014 Dated: 13-2-2014	Section 4 of COTPA
Circular issued by Special Officer and Ex Officio Under-secretary Education Department. (Planning) C4(6) Sa. Sta.Dhu. Ni/36/ 2008-2009 Dated: 24-4-2014.	Addressed to: Deputy Director, Public Education Department all districts. Display of no selling to tobacco within 100 Yards of the schools/colleges and educational institutes.	Refers to COTPA Section-6 Education department and police department to work together on tobacco free schools.
Circular issued by	Addressed to: The Editor	Refers to

Principal Secretary Health and Family Welfare Department. HFW 461 CGE 2013 Dated: 29-5-2014	Karnataka Gazette Bangalore Copy to: Chief Secretary Govt. of Karnataka. Prohibiting smoking and consumption of all forms of tobacco products in Government Offices and buildings.	Section 4 of COTPA Section 21 of COTPA
Circular issued by Director (Panchayat Raj-2), Ex Officio Joint-secretary Rural Development and Panchayath Raj. Gra A Pa 38 2014 Dated: 7-8-2014	Addressed to: To all District Commissioners, To ALL CEO Zilla Panchayath, to bring this circular into Taluk panchayat and Graam Panchayath Notice. TO Web site and Karnataka Development. Guidelines for Implementation of COTPA.	Section 4, Section 5, Section 6 and Section 7 of COTPA.
Circular issued by Commissioner Department of Public Education C4(6) Sa.Sta.Dhu.Ni-36/2008-09 Dated: 18-3-2015.	Addressed to: All Deputy directors Department of Public Education. COTPA awareness among students and teachers.	Section 4 of COTPA
Circular issued by Commissioner of exercise Government of Karnataka ECI/26/JIML/2014-15 Dated: 25-3-2015	All Deputy commissioners Exercise department all districts. Implementation of COTPA Act 2003.	Section 4 of COTPA
Order Issued by: Principal Secretary Administrative Department Govt. of Karnataka. OE 35 PCB 2013 Dated: 22-6-2015.	Addressed to: Joint Director and Inspector General of Police, Nrupatunga Road, Bangalore. Principal Secretary, Primary and Secondary Education, Multi storied building,	Inter sectoral action for COTPA Implementation. As per the Letter written by, Member High Power committee on Tobacco control. “Tobacco Free school” or “Tobacco free educational institute.

	Bangalore. Principal Secretary, Health and Family Welfare Department, Vikasa Soudha, Bangalore. Principal Secretary, Urban Development Vikasa Soudha, Bangalore. Commissioner Health and Family Welfare Department, Anandrao Circle Bangalore. Inter sectoral action for effective Implementation of COTPA 2003.	
Circular issued by Principal Secretary Department of Information Technology, Bio technology and Science and technology Dated: 26-10-2015	Addressed to: Sri Biren Ghosh ABAI, HSR layout Bangalore -02. COTPA Implementation in IT - BT Sector	Section 4 of COTPA
Issued by: Compliance Officer (COTPA) Deputy Commissioner of Police (Crime) Bangalore. 63/ccrb/review/2015 Dated: 31-8-2017	Issued by: Compliance Officer (COTPA) Deputy Commissioner of Police (Crime) Bangalore. 63/ccrb/review/2015 Dated: 31-8-2017	Implementation of smoke free laws
E cigarette Ban State govt hereby prohibits the sale, manufacture, distribution, trade, import and advertisement of	Addressed to: To All additional chief secretaries/ Principal Secretary/ secretaries of the government, All Police Commissioners, All District Deputy Commissioners,	Drug and Cosmetic act 1940. Food safety and standard act 2006. Use of nicotine in food products and consumption by public is banned under food safety and 147tandard act

ENDS its parts and components in any shape or size of cartridges containing nicotine in the interest of public. Circular issued by Deputy secretary to Government Health and Family Welfare Department & Nodal Officer High power committee for tobacco control No HFW/126/CGE/2016. Dated: 15-6-2016.	All District Superintendents of police. ALL CEO Zilla Panchayath,	2006. r/w notification NO: F.NO2-15015/13/2010, Dated 1/8/2001 and under para 2, 3, 4 of food safety and standards regulation 2011. The use of nicotine in food products preparation i.e use of this chemical in any form is banned in India under food safety and standard act 2006. Nicotine is allowed as an aid for de-addiction in nicotine replacement therapy under drugs and cosmetics act 1940.

Chapter 8: Using Social Network Analysis to Understand Multisectoral Governance: A Case of District-level Tobacco Control Program Implementation in India (Manuscript 3)

Preface

This chapter is the third manuscript of the dissertation. It applies the theoretical concepts identified in manuscript 1/ chapter 6 and connects the policy landscape and design of national and state level (manuscript 2/ chapter 7) policies to the district (local) level tobacco control implementation. It represents the first quantitative phase of the mixed-methods study to understand local level implementation and governance. This manuscript applied SNA as an innovative methodology to map the district level multisectoral implementation networks across two districts, identify the actors, their position in the network and the quantify the relationship between them. This manuscript provides a visual map of the implementation structure, and further suggests how network analysis can be used as a tool to study and strengthen implementation. Findings from the phase of the study are further deepened and advanced in manuscript 4/chapter 9, by using qualitative methodology to explain the observed network implementation patterns.

Manuscript 3: Using Social Network Analysis to Understand Multisectoral Governance: A Case of District-level Tobacco Control Program Implementation in India

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Abstract

Introduction: Interest in multisectoral policies has grown, in the context of Low- and Middle-Income Countries (LMICs), with particular attention to understanding effective strategies for implementation and governance. The study aimed to explore and map the composition and structure of a multisectoral initiative, identifying key actors engaged in policy implementation and their patterns of relationships in local level implementation networks in two districts in the state of Karnataka, India.

Methods: Social Network Analysis (SNA) was used to examine the structure of two district tobacco control networks with differences in compliance with the tobacco control law. The survey was administered to 108 respondents (n=51,57) in two districts, producing three distinct network maps about interaction, information-seeking and decision-making patterns within each district. The network measures of centrality, density, reciprocity, centralization, and E-I index were used to understand and compare the two districts.

Results: Members from the department of health, especially those in the District Tobacco Control Cell (DTCC), were the most important actors leading the district level network. The most common departments engaged beyond health were education, police and municipal. District 1's network had a high centralization, with district nodal officer being the most central node with highest in-degree centrality. The district also exhibited greater density and reciprocity. District 2 showed a more dispersed pattern where sub-district health managers had higher betweenness centrality and acted as brokers in the network.

Conclusion: The greater centralization, density and reciprocity in District 1's implementation network facilitated better information flows and coordination which, in turn, may help explain the better compliance with tobacco control laws. Mapping and analysing these relationships within the network are key to better understanding and improving multisectoral governance and implementation practices. SNA can be a valuable tool to visualize and measure these relationships, offering insights to help guide intervention and strengthen the implementation.

Keywords -Social Network Analysis, Multisectoral, Implementation, Governance, Policy, Tobacco

What is already known?

-Multisectoral collaborations are essential in efforts to solve “wicked” policy issues, as the solution lies beyond the remit and resources of a single sector.

-Effective multisectoral collaborations rely, in part, on efficient governance and implementation mechanisms.

What are the new findings?

-This study provides a blueprint of the implementation structure in local districts, identifying key actors and relationships among them.

-The district health department acts as the lead organization in governing the implementation of the tobacco control program. Higher network centralization, density and reciprocity at the district level facilitates the coordination and flow of information across stakeholders and departments.

-Despite similar design, programmatic staff, and resources, the results highlighted the variation in implementation networks across districts.

What do the new findings imply?

-The mapping of key actors and their connectedness enables the understanding of implementation structure and governance practices.

- The identification of key actors (leaders and brokers) and their role in the structure can provide insights regarding how to best deliver and monitor the interventions.

- Social network analysis can be a useful tool to analyse the structure and help guide intervention, in multisectoral implementation settings.

Introduction

The *Sustainable Development Goals* provide a critical global perspective toward collaborative action across sectors (1,2). There is a growing literature in health systems research that emphasizes the importance of multisectoral governance to address the social determinants of health and to further the cause of achieving equity (3–6). Multisectoral collaborations are complex and dynamic, requiring multi-level systems action and are often prone to conflict and tensions (7). At the core, the challenge lies in governance itself, where traditional hierarchical command and control methods need to adopt more coordinated, consensus-seeking mechanisms that can engage multiple sectors and organizations (8). Thus, successful multisectoral action relies on coordination, mediation of relationships, and the alignment of goals and interests (9).

Conceptually, networks – defined as a set of actors connected to one another for one or more dependencies – provide a useful habitus for analyzing governance in multisectoral policy settings. According to Hjern & Porter (10), policy and program 'implementation structures' in multiorganizational settings often serve as networks, as policies are rarely implemented by a single organization, but rather by subsets of members' organizations working on the program. These networks manifest architectural complexity as they challenge traditional hierarchal authority through the formation of horizontal relations based on the exchange of resources and trust, rather than top-down command and control mechanisms (11–13). Network structures focuses on patterns of relationships, self-organization, and emergent properties for sustainability, capturing the social complexity and application of human agency (14,15). Thus, network mapping and analysis provide a scope to capture and analyze the complexity of multisectoral policy implementation. Networks are seen as an appropriate structure to enhance collaborative outcomes in service-oriented groups and organizations (17,18), thus making them suitable to be studied as a structural unit for multisectoral policy implementation.

Social Network Analysis (SNA) is a research approach that is uniquely suited to examining implementation structures in a multisectoral policy setting. Using a survey tool, actors are asked to provide information about themselves and the people they go to for support. Then, using mathematical algorithms and analytic software (19), we can analyse and map the patterns of relationships between actors and their

supporting actors in the network. In a network, a tie (edge) between two nodes (actors) represents similarities (shared characteristics, membership), interactions (communication, advice) or social relations (kinship, affective, friendship) or flows (beliefs, information, resources, personnel) (20). An application of this approach offers greater insights into the nature of relationships in a system and the network structure of these interactions (20). Such networks include formal roles grounded in mandated institutional positions as well as informal self-organizational elements of individuals actors, exposing the dynamics of interactions (19) and making them more challenging to assess traditionally. Thus, SNA provides us with distinctive methods to map, measure and analyze the relationships between people, groups and organizations (21).

This paper focuses on multisectoral policy implementation and governance, using the case of tobacco control policy at the district (local) level in Karnataka, a southern Indian state. Local level implementation is critical for policy success; moreover, being closer to the field, the local level is better attuned to the need for the policy adaptations required to suit particular contexts (22,23). In this study we focus on the composition and structure of the multisectoral district implementation units by: (1) identifying the most important actors within the tobacco control networks and describing how they relate to other actors; (2) examining relationships among tobacco control actors at the district level based on their interaction, information-seeking and decision-making; (3) and investigating the structure of tobacco control networks by comparing two district network structures. Ultimately, we provide a structural map of the existing implementation network and identify ways to intervene and strengthen the network. The study concludes by drawing lessons on how social network analysis enables a better understanding and strengthening of implementation structures; and offers suggestions for health systems actors to use SNA as an operational tool to assess, monitor and intervene in the implementation of local multisectoral programs.

Methods

The Case: National Tobacco Control Program (NTCP)

In India, tobacco control initiatives took a deliberative turn in 2003 through national legislation to promote action on the prevention of tobacco use, known as COPTA: *The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation*

of Trade and Commerce, Production, Supply and Distribution) Act, 2003. The National Tobacco Control Program (NTCP) was initiated to aid COPTA implementation in India and create awareness about the harmful effects of tobacco consumption and to facilitate strategies for prevention. In 2007-08, the NTCP was initially launched as a pilot, followed by release of an implementation guide in 2012 that incorporated learning from the pilot and led to gradual scaling to the other districts (24). During the stepwise scale-up, the program's implementation was merged with the National Health Mission (NMH)'s overall umbrella at the district and sub district level to include detailed activities and provision of required financial support. In this study, we focus on two district levels in Karnataka, a southern Indian state, as districts serve as the main implementation units of the program. Below we share the structure and activities of the program at the district level.

Structure: The NTCP has a three-tier structure at the national, state and district. Each level has a tobacco control cell with designated human resource and financial support. At the state level, the cell is responsible for planning, implementation and monitoring, and is led by a state nodal officer who is supported by a state consultant and a legal consultant. However, the districts remain the unit of implementation, where each cell is staffed with a district nodal officer, district consultant, social worker and a psychologist/counsellor.

Implementation Activities: The activities at the district level focus on: 1) the implementation and monitoring of the COTPA 2003 by conducting information, education, and communication (IEC) activities, school programs, and enforcement of COTPA by district teams (comprising health, education, police, food and municipal officers); 2) the training and sensitization of representatives from police, teacher, *panchayati raj* institutions (local governance institutions), transport personnel, non-governmental organizations, health professionals, district enforcement teams; 3) the review by district level coordination committee, under the chairmanship of deputy commissioner or additional deputy commissioner of the district; and 4) provision of tobacco cessation support.

Study design

This survey developed in the study was part of a more extensive mixed methods research project conducted in Karnataka, India. The data was collected from two districts, which were selected based on compliance with the COTPA. We used the

district compliance data of 2018-2019, collected by the state anti-tobacco cell (SATC). We purposefully selected two districts with different compliance rates to aid a comparative perspective, one with greater (District 1) and another with lesser (District 2) compliance (Table 8.1). The selection of districts was shared and discussed with the state level team, and their perception and experience of working with the districts also seconded the selection. In 2018, the NTCP had been scaled-up across both districts, having the same number of sub district units, staffing, administrative and financial support. Both the districts had established a district tobacco control cell (DTCC) in 2019.

Table 8. 1: Characteristics of the two selected districts

Characteristics	District 1	District 2
Administrative characteristics		
Administrative units in district (Sub district	3	3
Distance from state capital (km)	383	50
Demographics		
Population (million)	1,177	1,083
Area (sq/km)	3,582	3,516
Literacy rates (percentage)	78.69	69.22
Program characteristics		
Program start date	2018	2018
Part of pilot phase of NTCP	No	No
District tobacco control cell present	Yes	Yes
Allocation of financial and human resources under NHM	Yes	Yes
COTPA compliance	High	Low

We followed the three steps identified by Blanchet and James (21) to use SNA in applied health systems research, namely: defining the set of actors in the network; collecting data using the survey too; and analyzing the structure.

Defining the actor set in the network

The first step was to identify the set of actors in each of these district level implementation network. We defined our network boundary (set of actors) *a priori* as implementers and managers across different departments and organizations engaged in the implementation of the NTCP at the district level, including sub-district officials. We additionally included a medical college, media representative and a non-

governmental organization that engaged with the program. We did not include educational institutions, specifically primary and secondary schools, as we focused on mapping actors with administrative and/or managerial roles in the implementation. The actors were identified using a list shared by the department of health that included the details of the designated officers. This list was verified and adapted with inputs from the district tobacco control cell (DTCC), as each district varied in terms of the departments engaged with the NTCP. Additionally, district level documents and circulars were reviewed to identify the actors and their engagement with NTCP. Finally, after adapting the list, a final actor set was available for each district.

Instrument and data collection

The second step was to define relationships between actors using a survey instrument, which includes both socio-demographic information and network information. First, the survey covered demographic and socioeconomic information for each respondent, including age, sex, highest academic degree, organization, years in the organization, administrative position, and years in position and association with NTCP. Second, for the network information, the survey instrument required the interviewees to identify the individuals from the actor list whom they interact with (for program sensitization), and who they go to for information (implementation assistance), and decision making (programmatic or financial). The tool was piloted with respondents from three different departments, and the survey tool was adjusted accordingly.

The survey tool was administered to all the actors across different departments including the departmental heads with higher administrative ranks. In order to increase the survey response rate and minimize missing data, SM and SLB administered the survey themselves. The actor list was presented to each participant and they were asked to identify individuals with whom they have interacted one-to-one, via face-to-face or telephonic conversation, while working on the NTCP in the preceding 12 months. The participants could also name other actors not on the list but with whom they had discussed the implementation of the tobacco control in the past year. The field work was facilitated by a letter from state department of health providing permission to conduct the study. This letter was further used by the DTCC to inform the departments and respective organizations about the study and the requested for time. The overall study was also facilitated by the Institute of Public Health in

Bengaluru, which has engaged in tobacco control in Karnataka for over a decade and connected the lead author with state and district level networks.

Data Management and analysis

Each participant in the survey was anonymized and assigned a numerical identifier. The data was entered onto an Excel Spreadsheet which was consolidated and imported to R-Software (Version 1.3.1093) and packages (I graph and isnar) for analysis and generation of network maps for visualization. To overcome the challenge of missing data, we retained those members in the implementation network who declined or could not participate but were mentioned by other participants. However, their personal networks and reciprocal relations were not included in the analysis. We calculated descriptive statistics on sociodemographic information collected, and calculated network metrics and generated sociograms from the network data. Table 8.2 describes their analysis and selection, along with their significance and utilization in the multisectoral policy implementation network.

Table 8. 2: Description of the network measure, its interpretation and application for multisectoral implementation network in the study

Measure	Description	Reasoning	Interpretation for inter-organizational/multisectoral policy
Degree	The number of ties coming from each node and/or going to each node.	Identification of highly connected actors in the network, whom people go to.	Key nodes (actors) act as leaders with power, resources and the ability to influence the network behaviour and outcomes.
Betweenness	Nodes that link other nodes which are not linked themselves	These actors (nodes) act as a 'bridge' connecting people that are not otherwise connected.	Identification of betweenness nodes can facilitate collaboration between actors within the network, as these nodes act as brokers or connecters.
Isolates	An actor not connected to anyone	Indicates actors that are not connected to others in the network. Connection to at least one other	Ties among members of the network ensure the flow of information/ resources. Identification of isolates can be useful to identify measures to

		person in the group would be desired.	engage isolated actors in the network.
Reciprocity	The extent to which ties are reciprocated.	Indicates whether the relationships are reciprocal.	Lower reciprocity indicates weaker ties. Greater reciprocity would indicate a mutual and strong relationship.
Density	Expressed as a number of ties present divided by a number of possible ties.	Indicates cohesion in the network.	Lower density levels indicate that the network does not build ties or linkages with other network actors. Ties are required for the flow of information or resources in the network.
Centralization	The range to which the network is focused on one or a few actors.	A centralized network indicates that one or few actors capture an important position. Actors that are highly central act as a resource in the network (please see degree).	Higher centralization means that much of the information and resources flow through one or a few actors. To increase network functionality, engagement of key actors is necessary or requires decentralization.
E-I Index	The E-I (external-internal) index takes the number of ties of group members to outsiders, subtracts the number of ties to other group members, and divides by the total number of ties.	The extent to which actors communicate with others within (homophily) versus outside (heterophily) their group.	It indicates intragroup communication and exchange. The value ranges from-1 (homophily/ all ties are internal to the group) to +1 (heterophily/ all ties are external to the group).

Ethical approval

This study was reviewed and approved by the Institutional Ethics Committee at the Institute of Public Health, Bengaluru, India (IEC-ER/01/2018) and the Faculty of Medicine, McGill University, Montreal, Canada (A05-E24-18B).

Results

In this section we share the results from the analysis, organized into following sections: (1) analysis of the sociodemographic characteristics across the two districts; and (2) sociograms (social network maps) and network-level measures for: (2a) the interaction network, (2b) the information network, and (2c) the decision-making network in both districts.

Sociodemographic characteristics of actors across two districts

The survey was administered to 108 respondents, 51 in district 1 and 57 in district 2. Table 8.3 presents the characteristics of the survey respondents. We observed a difference in the departments that engaged with NTCP in each district; district 1 had additional members across judiciary, labour and other (medical college and media) departments. In contrast, district 2 had additional members from the Women and Child Development department. The most engaged departments across both districts were health, education, police and municipal.

Beyond these sociodemographic characteristics, we collected data about actors' NTCP engagement. Among the total, 4 respondents from District 1, and 2 from District 2 stated they did not engage at any given point. These 6 participants had delegated the program task to a junior official within their respective departments and did not participate in the program directly. There was a difference observed in attendance for district coordination committee meeting and trainings in both districts. District 1 had a higher attendance number for trainings while District 2 had a higher attendance number for committee meetings. Participants who did not received any training were briefed on their role by their departmental superior or by the district nodal officer for tobacco control.

Table 8. 3: Sociodemographic characteristics of the survey respondents of NTCP across two districts

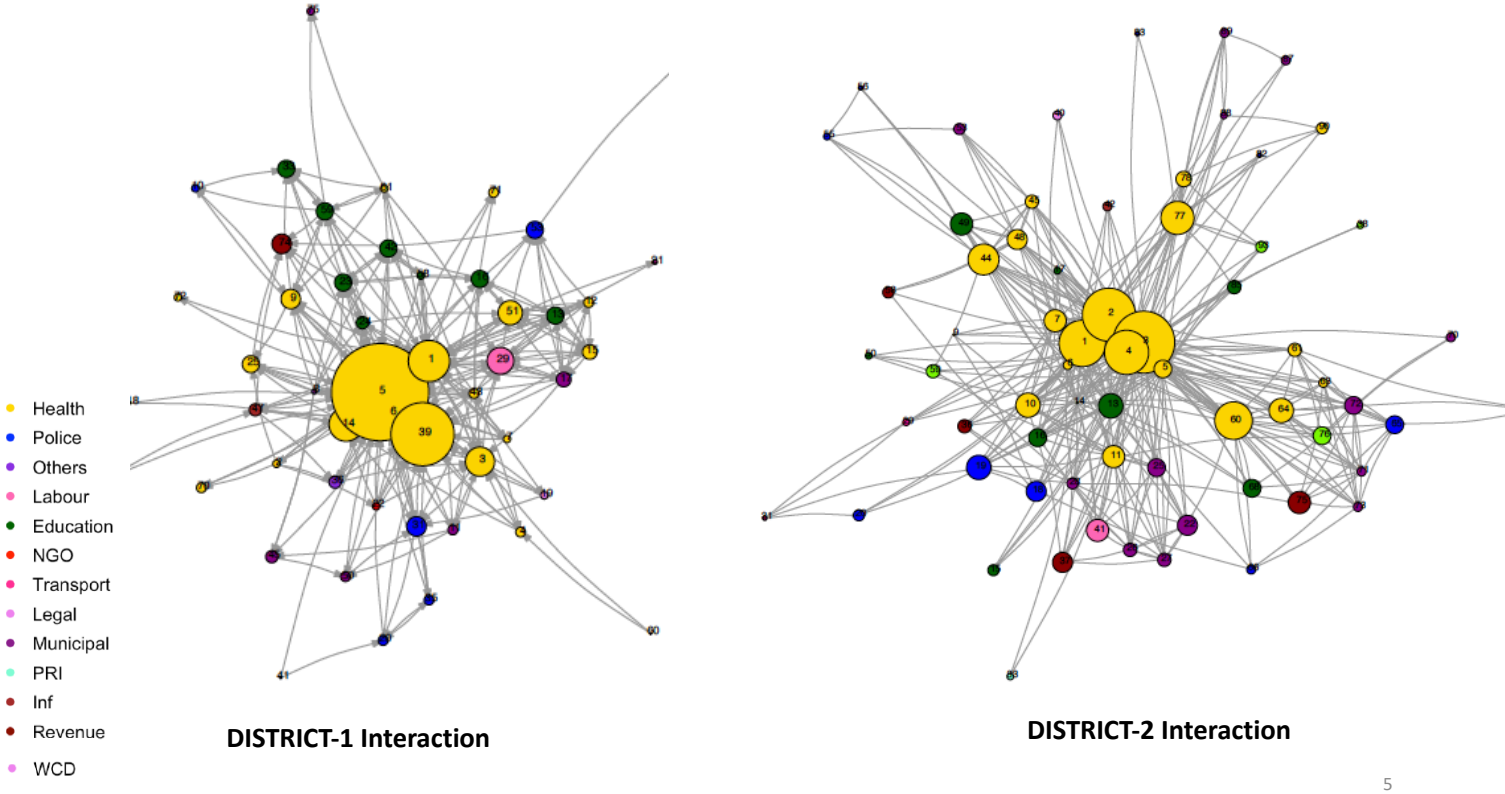
	DISTRICT-1	DISTRICT-2
No. of total respondents.	N=51	N=57
Department of Health	17	19
Department of Education	9	8
Department of Police	6	9
Municipal Department	8	13

Department of Transport	1	2
NGO	1	-
Legal/Judicial	1	-
Department of Women & Child Development	-	3
Department of Labour	2	-
Department of Information & Broadcasting	2	1
Department of Panchayati Raj	1	1
Department of Finance	1	1
Others	2	-
Sociodemographic		
By Gender		
Male	43	44
Female	8	13
Age in years		
Min	24	28
Mean	47.02	43.47
Max	61	59
Education		
Higher Secondary	2	1
University or college Diploma	3	6
Bachelor's Degree	23	17
Master's Degree	23	28
PhD or higher Degree	1	3
Other	-	2
Duration of employment in the current organization (Yrs)		
Min	1.50	0.3
Mean	17.85	14.6
Max	34	38
Duration of employment in current position (Yrs)		
Min	0.2	0.3
Mean	4.5	4.41
Max	15	16
Administrative position		
1.Departmental head/highest administrative position in the district level	14	9
2.Administrative responsibility	26	30
3.Field level/implementer	12	18

Employment type		
Contractual	2	4
Permanent	49	53
Engagement with Tobacco control		
Yes	47	55
No	4	2
Duration of engagement	(n=47)	(n=55)
Less than a year	3	11
1-2 years	25	19
2-5 years	17	17
More than 5 years	2	8
District/Block level coordination committee meeting in last one year	(n=47)	(n=55)
Yes	29	46
No	18	09
Attended training in the last year	(n=47)	(n=55)
Yes	41	30
No	6	25

Network-level measures and sociograms

District level interaction network



5

Measure	District-1	District-2
Highest in-degree nodes	5,1,39,14,3	3,2,1, 4,60,77
Highest betweenness nodes	5,1,9	3,4,77, 44, 60
Network density	0.106	0.054
Freeman's degree centralization (%)	52.9%	36.3%
Network reciprocity	0.382	0.309
E-I Index	0.1586	0.1568

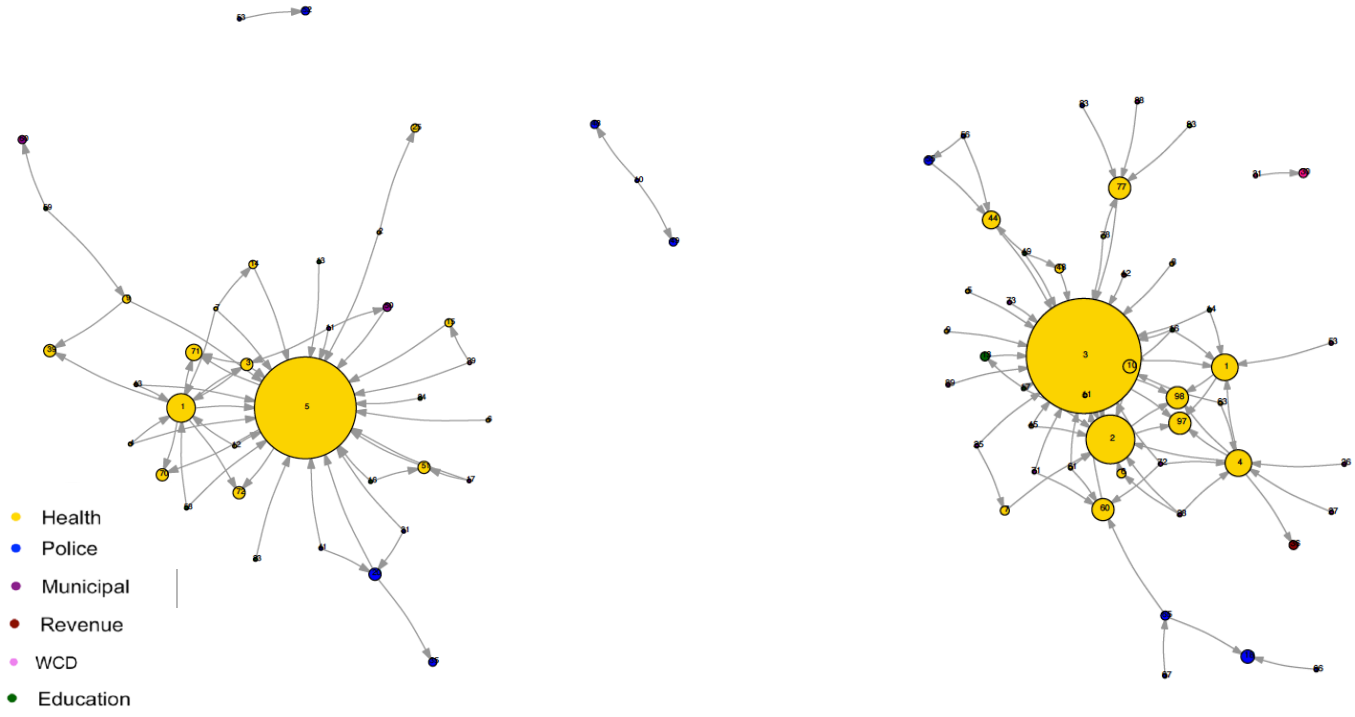
Figure 8. 1: Interaction graphs of the NTCP for both districts

The interaction networks mapped in Figure 8.1 show nodes (actors) as circles, and ties between them are represented as lines (edges). The size of the node indicates in-degree centrality, as larger nodes represent higher in-degree centrality. The thickness of edges (ties) represents how frequently they interact. The frequency of interaction was used as weights. Actors from the department of health were most central in the network across both districts. We also calculated Freeman's normalized network centralization to compare centralization across two districts. The centralization was

higher in District 1 than District 2. Structurally, District 1 was more centralized with one main node (actor), whereas District 2 had more nodes of similar importance. District 2 had a higher number of nodes with higher betweenness centrality; these nodes that represent sub-district health managers can be referred as broker nodes as they connect other nodes to the network at the sub-district level.

Across both the networks, the DTCC members, especially the district nodal officer, district health officer, district consultant and sub district health officers, were the key actors in the network. District 1 also had higher values of density and reciprocity. We did not find any isolated actors in either district, meaning that everyone is connected to some network member. The interaction network was the largest of the three networks

District-level information-seeking network



District-1 Information seeking **District-2 Information seeking**

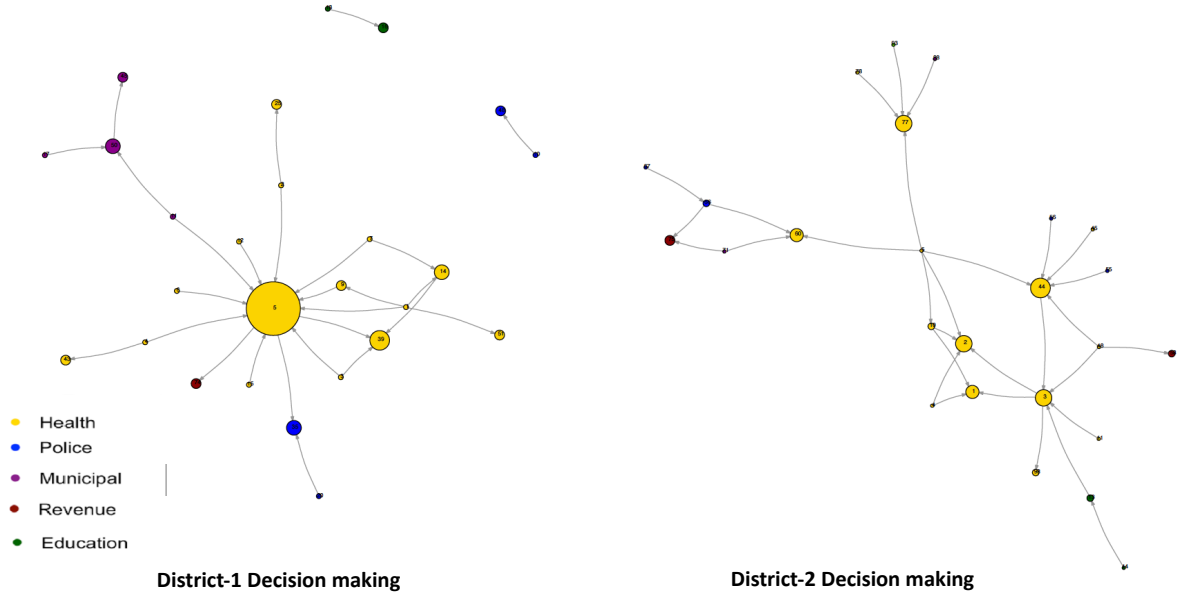
Measure	District 1	District 2
Highest in-degree nodes	5,1,71,70,72,51	3,2,1,4,98,97,44,77
Network density	0.039	0.036
Network degree centralization (%)	33.4%	28%

Figure 8. 2: Information-seeking graphs of the NTCP for both districts.

Figure 8.2 shows the information-seeking network across two districts. Actors were asked to identify resources for implementation within the network, including clarification of guidelines, advice around planning tobacco control raids and training activities. During the survey, several participants mentioned they mainly focused on their specific assignment and did not seek information about program implementation. The program implementation information was mostly sought by mid-level managerial staff as they were responsible for providing guidance to the field level implementers.

The information-seeking map reveals a similar pattern as the interaction map. The actors from department of health remain central in the network in terms of providing information, as the program by design is centrally driven by the department of health. The most central nodes in the information-seeking map were the same as in the interaction map. District 1 also had a similar centralization pattern, led by the nodal officer, as previously noted. However, District 2's information network was led by district consultant, and brokering roles for intermediate-sized nodes, representing sub district managers, was more distinct. We also observed two isolated pair in District 1 and one pair in District 2. These were the police and municipal department members, who reached out to their own department for information support. The members of DTCC were supported by the SATC members to provide them with information support across both districts.

District-level decision-making network



District-1 Decision making

District-2 Decision making

Measure	District 1	District 2
Highest in-degree nodes	5,39,14,50	3,2,1, 4,60,77
Network density	0.0415	0.05
Network degree centralization (%)	22.7%	9%

Figure 8. 3: Decision-making graphs of the NTCP for both districts.

Figure 8.3 shows the decision-making network across two districts. The respondents required inputs and approvals to make decision regarding financial and program planning. Very few actors in the district were identified as having such a decision-making role. In District 1 we observed a similar centralization pattern for decision making, which corresponds to higher network centralization, where the nodal officer was key in providing decision-making support to the network such as disbursing funds. In District 2, the pattern of centralization was diminished, with more dispersed decision-making nodes. Here, the sub-district health managers played an essential role. We also note that participants from the municipal, education, health and police referred to their own department for decision-making support. The central actors from the health department, meanwhile, sought decision-making support from the police and revenue department.

Discussion

Our study identifies the structure of local-level implementation networks, key actors, and their relationships within the networks. In rendering the relationships between actors more explicit, these network maps contribute to better understanding how to intervene in such networks and strengthen the relationships which can improve overall implementation. In this section we compare the networks across the two districts to understand the similar and different patterns observed and discuss practical implication for researchers and policymakers.

Network structure and district characteristics: cues about program compliance

We mapped, illustrated, and studied the implementation network across two districts with similar institutional structure, staffing, and financial support, yet with different levels of compliance with respect to the implementation of the same tobacco control program (COPTA). The two networks showed some similarities. Firstly, the actors

most frequently engaged in the program were from the departments of health, education, police, and municipal, across both districts. Secondly, in both networks, health remained the lead organization, with high centralization and key actors from the district cells (DTCC), especially in interaction and information seeking networks. Thirdly, district level health department leads in both networks relied on state teams for information support. Fourthly, a positive E-I Index in both districts indicates that the DTCC built connections beyond their own departments to implement the program. Finally, regarding decision-making support in both districts, we found that the most important health actors relied on other departments such as revenue and police.

The two districts differed with respect to the departments engaged, the respective central actors leading the networks and network measures. In District 1, the judiciary, labour, media, and members of medical college were involved, while in District 2, Women and Child Development were engaged in the tobacco control network. Across the three networks encompassing interaction, information and decision-making, a similar pattern emerged for both districts. In the first district, the nodal officer for tobacco control was the lead actor, well connected to other members across the district. District 1 also produced higher values for density, reciprocity, and network centralization. The second district revealed the key role of sub-district health managers, beyond the district team members, who were led by the district consultant.

The differences identified between district networks are indicative of a plausible explanation, that can help pinpoint factors that affect compliance. District 1, the more centralized network, had the potential for rapid diffusion of information, as it is characterized by high reachability to people in the network who can act as broadcasters. The centralized networks also share more power and influence with the central actors (25). Thus, in such a case, if the central actors are active and embrace the idea of networking and working across departments, the diffusion and coordination will be more effective. In District 2, the sub-district health managers appear to play an important role as they have high betweenness centrality in the network. This indicates that the identified person or node plays a significant part in allowing information to pass from one part of the network to the other, especially with other sub district members of the tobacco control program. They acted as bridges or brokers to the main network as they facilitate the flow of information and resources within the groups of people separated from the main network (26). These actors can maximize a network's benefits by reaching actors and people who are difficult to reach (27). Engagement

and participation from these brokered nodes can facilitate or inhibit joint action of the actors within the network. Thus, in District 1 we found a highly centralized, dense, reciprocal network, whereas in District 2 we mapped a more brokered and dispersed network.

Studies have shown that actors in a highly centralized network, where most of the interaction is with one or two key actors, completed tasks more easily and effectively (28). This may be related to the explanation that, in a dispersed network, establishing chains of communication require more intensive efforts to involve, establish and maintain communications links (29). Furthermore, in denser networks, actors are more interconnected, and information and behaviours can spread more rapidly to more people (30). Also, a dense and reciprocal communication network can lead to higher rapport, cohesion and trust (31) and hence facilitate coordination to improve performance. This can be beneficial in a complex multisectoral policy environment where the dynamic setting needs effective, frequent, and open channels of communication between members of the network. As the central tenant of multisectoral collaboration is relationship building, the dense and open information channels can facilitate the mutual understanding, trust, and accountability needed to achieve shared goals; and opens up mechanisms to provide feedback on processes, and potentially the adaptation required to identify and achieve emergent needs (8,32,33). These observed patterns of centralization, density, and reciprocity may thus be linked to better compliance in tobacco control as effective and robust channels of communication provides scope for better coordination.

Lead organization governance- network management and steering

In describing network governance, Kenis and Provan (34) identify three governance forms: participant governed, lead organization governed, and networks governed by network administrative organizations. The governance practices we observed in tobacco control best align with that of lead organization governance. The department of health leads the network governance, either through a central role by the nodal officer for tobacco control and the district tobacco consultant, or through a brokered role by sub district managers. The lead organization guides the governance practices in part, by providing administrative costs, resources to enable coordination, and the network's goals are best aligned with their own goals (34). In India, the tobacco control program (NTCP) primarily nests within the department of health at the national and

state levels. Both of these provide the program's financial and human resources. However, to promote coordination across all departments, the head of district administration known as the district commissioner (from the department of revenue) chairs the district level coordination committee and serves as chair for the overall program to provide guidance, ensure monitoring, and conduct performance review. Hence, in the decision-making network we observe that the health department does rely on the revenue department to take programmatic and planning decisions. While in practice, the health department leads and coordinates the tobacco control program and takes all operational decisions (35), there is a need for cooperation and coordination from other network members to reach their mutual goals. In both districts, we noted that the key health department actors need to make multiple connections with members of different departments. A positive E-I Index in both districts indicates they make connections beyond their own department for program implementation.

The measure of in-degree centrality is the most frequently used network measure of opinion leadership (36). At the district level, the tobacco nodal officer in District 1 and the tobacco consultant in District 2 have the highest in-degree centrality and influence in providing guidance for implementation. These leaders or central actors need to be able to coordinate network-level activities through network management, which broadly refers to efforts and activities employed to bring in relevant actors, implement joint efforts and enable problem-solving (37–39) that fulfills network functioning. The importance of network management (40) and the network manager role (41) becomes essential for realizing network goals and actions. The information network across both districts suggests that these central actors act as significant information resources for implementation. This finding is concurrent with the literature revealing how network managers have played roles in exploring innovative ideas (42) and in guiding interactions. Enhancing network efficiency would require supporting and building capacities of the network managers, both central actors and brokers, to steer and guide the network. In addition to technical knowledge, several authors have indicated a variety of necessary skills for such network managers. These include network diagnostic skills, to reduce and manage uncertainties in complex relationships (42), and skills that enable better comprehension of how to implement appropriate network activities (38). Hence, further enhancing such leadership skills and supporting these leaders can enhance network coordination and efficiency.

Implications for research, practice, and policy

As a means of mapping and exploring implementation of multisectoral coordination, social network analysis demonstrates that implementation across district units can vary despite the same structural provision and support. A diagnosis in the form of a network map can provide guidance on how different networks can be strengthened. Identifying central actors, brokers and broadcasters and supporting the strengthening of their capacities can enhance network potential for effective diffusion of implementation. In this study, both districts relied on key central players for the diffusion of innovation, knowledge and network interventions (30,43,44). In District 2, we also identified health managers who act as brokers and play a crucial role in coordination and building linkages between different groups in the system (45,46), including the sub-district level. The SNA approach can also provide a network diagnosis to facilitate the "rewiring" of networks, and the opportunity to identify and draw in additional actors who have not yet participated but can be engaged in the future to enhance the potential of the network (25). Network metrics can also measure the strength of relationships between actors, so as to diagnose weaker relations/ties which have not been fully utilized. Thus, SNA as a tool can be adopted to diagnose, map, monitor, and strengthen capacities in multisectoral policy implementation.

SNA is context sensitive (20,25), hence contextual knowledge in designing the tool is crucial. The lead author and co-author (SM and SLB) spent two months visiting the districts, in order to establish relationships and observe implementation activities. This led to an understanding of the implementation context, activities and actors engaged in the network. It was time intensive to seek appointments from various departments, especially from the high-ranking district officers of each department. The state and district tobacco control teams facilitated this survey in terms of providing the permission and making the introduction to other departments. Thus, a SNA that has multisectoral outreach will require understanding of context, programs and facilitation in the collection and interpretation of the data. The emerging findings were also shared with the state tobacco control team, to help interpret the preliminary findings and situate the research in context. The visual data, identifying central actors, key departments and variation across districts were perceived as useful findings for the state team in the search for more effective implementation.

Limitations

The study also has several limitations. First, as a quantitative approach, SNA allows for the depiction of positions and places among the network actors, either through a central direct relationship or mediated through a broker. Still, this does not fully capture the quality of relationships between actors (47). To explore this dimension, the larger study incorporated a qualitative component to complement the quantitative data and explore the reasons behind different network patterns observed in two districts (Mondal et al., forthcoming). These findings are reported in a separate paper. Second, the study reports findings from a cross-sectional survey from a single point in time. However, social networks are sensitive to change, whether due to factors associated with the external or internal environment and studying these networks over a period would enable understanding of how and why networks evolve. Due to time and resource limitations, it was difficult to repeat the survey after a certain duration of time.

Conclusion

Structural mapping of multisectoral implementation networks can help understand variations in implementation. SNA can be used as a heuristic analytical tool to inform strategies to intervene in networks, by identifying key actors, their departments, and their relationships. It can be used as a visual tool for policy planners and implementers to understand the state of actual implementation structure and concentrate their efforts to improve and enhance implementation.

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Chapter 9: Local dynamic decision space promoting adaptive governance practices in multisectoral tobacco control implementation: a mixed-methods study in India (Manuscript 4)

Preface

This is the fourth manuscript of the dissertation. It employs theoretical constructs earlier identified in the review (manuscript 1/ chapter 6), and presents the second, qualitative phase of the sequential mixed-methods study to understand local level implementation and governance practices. Here, qualitative methods including interviews and observations are used to extend the enquiry from the quantitative phase (manuscript 5/chapter 8) by documenting and explaining the governance practices and observing how different actors work together to implement a multisectoral policy. The findings from the study suggest that multisectoral governance can be improved by creating innovative spaces for deliberation and decision-making at the local level, and that these spaces can enable a better balance between the formal hierarchical mechanisms and the emerging, engaging informal ones. This manuscript also arranges, organizes, and integrates the data from quantitative phase manuscript 5/chapter 8) and this phase of the study. Finally, findings from this phase are advanced in the discussion section (chapter 10) of the thesis, by situating them within the national and state policy landscape (manuscript 2/ chapter 7).

Manuscript 4: Local dynamic decision space promoting adaptive governance practices in multisectoral tobacco control implementation: a mixed-methods study in India

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This manuscript will be submitted for publication to *Social Science and Medicine.* The paper and abstract have been formatted as per journal requirements.

Abstract

Interest in multisectoral governance has increased, especially as the evolving nature of governance requires the facilitation of dialogues and negotiation across actors, organizations, and sectors. The objective of this paper is to understand these changing governance practices, and to explore how actors use these practices in everyday settings. Focusing on the district level in the implementation of tobacco control policies in Karnataka, India, our mixed method study explores, maps and explains these implementation structures and governance practices at the local level. This paper presents the qualitative research phase, conducting 33 interviews with “implementers” across multiple government departments (health, education, municipal, labour, police, media, revenue, transport, and information and broadcasting) and 17 non participatory observations. We find that local level governance practices are sustained by complementary hierarchical and relational mechanisms as they act as forms of exchange governance. The hierarchical aspects rely on formal contracts utilizing authoritative power, relying on legitimacy, and employing administrative accountability, whereas the relational aspect rely on social exchange, gaining trust, building common values, and creating a learning culture nested within the bureaucratic administration still grounded in hierarchical power. The fluid nature of the interaction between the two modes of governance makes the local level decision space 'porous' and dynamic. Gradually making the traditional, top-down administration less rigid, opening local level decision space, making it more amenable to local initiatives and innovation. Hence, multisectoral policy arrangements at the local level need to foresee innovative spaces for deliberation and decision-making, balancing the formal hierarchical mechanisms and the emerging engaging informal ones, mobilizing tacit knowledge and everyday practices.

Keywords: Decision-space, governance, multisectoral, district health systems, networks, tobacco

Background

During the past decade, there has been a renewed interest in multisectoral action in health to achieve the United Nations Sustainable Development Goals and Universal Health Coverage. The central pillar in multisectoral action remains governance (Rasanathan et al. 2017), as effective governance mechanisms can enable the development of shared policy goals, and more importantly, can set up suitable processes for implementation of programs across departments and levels of government by promoting coordination mechanisms. Multisectoral implementation is bounded by the increasing number and plurality of stakeholders across multiple jurisdictions, engaged in complex coordination mechanisms, processes and relationships. Thus, governing such practices requires moving beyond traditional governance mechanisms of command and control toward a coordinated and collaborative approach, given that a single government sector cannot address such complex challenges (Fawcett et al. 2010; Smith, Buse, and Gordon 2016; Willis et al. 2016). The need for a diverse set of practices and activities allows for new ways of adaptive governance that promotes inclusive participation from plural stakeholders across sectoral administrations and levels of authority.

Given the need to understand evolving governance practices, we focus on the district (local) level as implementation units and examine them from a networked structure perspective (Hjern and Porter 1981). These networks manifest architectural complexity as the traditional hierarchal authority is challenged due to their multi-sector nature and the need to form horizontal relationships beyond the vertical relations with a distinct type of governance. A network form of governance is based on the exchange of resources and trust rather than top-down command and control mechanisms (Kenis and Schneider 1991; Rhodes, 1996; Börzel & Risse, 2010). Provan and Kenis (2008) define network governance as using “the institutions and structures of authority and collaboration to allocate resources and to coordinate and control joint actions across the network as a whole”. Thus, networks supplement formal vertical hierarchies to recognize more diverse activities enabling adaptive horizontal ways of promoting joint action.

Using a networked conceptualization for district (local) level implementation, our study aims to explore and explain governance practices in the implementation of the tobacco control program in two districts in the southern Indian state of Karnataka.

Following the design of an explanatory mixed methods, our first quantitative paper on district level social network analysis, focused on mapping, understanding and characterizing relationships in a tobacco control program implementation structure, in the two districts. The current paper aims to identify and understand district level governance practices and explain how these practices are employed by different actors in a multisectoral policy implementation. We focus on the interaction between traditional top-down hierarchical governance mechanisms and evolving networked and relational forms of governance. Thus, providing an account of how these practices balance each other and act in complementary ways, providing a 'decision space' at the local level, enabling engaged actors to steer the implementation process. We generate insights on evolving governance practices that are pertinent to resolving complex problems in multisectoral implementation domains. The paper is structured as follows; first, we provide a brief discussion of governance practices in networks. Second, we examine the key findings from our case study: using authoritative power, formal contracts, and engaging in social capital and exchanges; legitimacy to enforce, creating trust and reciprocity; enforcing administrative accountability, and building a learning culture. Third, we further integrate the observed network patterns from social network analysis with findings from the qualitative study, using joint display tables to provide analytical depth to the study. Fourth, we discuss our findings in relation to the decision space at the local level, and the implication for multisectoral governance

Network governance – a hybrid approach

Three typologies have been identified as modes of governance in organizations that can facilitate efficiencies in coordination: markets, hierarchy and networks (Adler 2001; Powell 1990). Markets rely on exchange conditions, whereas hierarchies rely on rules and formal power, and networks on negotiation and trust. The network structure and mechanisms used to coordinate tasks has gained more attention in recent years as governance has become more dynamic and diffused due to an increase in multiple nodes of power and interest.

The traditional hierarchical forms of governance refer to a more linear notion of control, where decision-making and implementation are characterized by centralized command and control mechanisms (Barbazza and Tello 2014). These relationships are subject to authoritative rule, wherein the stewards have a direct enforcement ability, usually through a formal law, contract or administrative rules (Boston and Gill

2011; Hallsworth 2011). In this traditional form of hierarchical governance, policy development and implementation decisions are characterised by linear and centralized processes. Contracts remain the central arrangements that provide a legally binding institutional framework, identifying each actors' roles, responsibilities and aligning with the institutional goals and aims underlying relationships. These formal agreements act as primary guidance for interaction and exchange (Carson, Madhok, and Tao 2006; Luo 2002). In hierarchies, formal authority remains the main mechanism to coordinate and control tasks.

Conversely, the emerging network forms of governance highlight the relational aspect of governance amongst stakeholders, moving away from hierarchical architecture to more joint working through coordination, inter-dependence, and negotiations (Peters 1998). The central objective remains mapping relational configurations founded on trust, reciprocity, shared norms and rooted in common values among the actors in the networks (Carson et al. 2006; Entwistle et al. 2007; Rethemeyer and Hatmaker 2008). Hierarchical and relational governance are considered different governance types as they trigger different mechanisms for cooperative efforts. However, these governing approaches are rarely mutually exclusive. Although contemporary challenges show the need for more networked governance arrangements, they do not supersede hierarchical arrangements but rather reflect the addition of horizontal linkages within the top-down orientation (Willems et al. 2015). More recently, attention has focused on the interplay between these two forms of governance to understand their complementarity, through the mutual role of contracts, trusts and relational norms to improve performance and satisfaction (Cao and Lumineau 2015). In health care networks, hierarchic relations can be used when one actor has authority over another (Willem and Gemmel 2013), although relational governance is the primary mode of governance when such authority is lacking (Herranz 2008; Rethemeyer and Hatmaker 2008).

This paper aims to develop a richer understanding of these governance mechanisms' detailed composition and their contingent interplay in a local level multisectoral policy implementation setting. Specifically, we focus on the decision space at the local level, highlighting how the utilization of these interrelated sets of governance practices can address the need for coordination across departmental jurisdictions and contribute toward better aggregate conceptualization of governance practices in local level multisectoral policy settings. The overall purpose of this study

is to uncover and explain pertinent features of evolving governance practices in local health systems.

Methods

This manuscript is based on analysis of data from a larger study undertaken by the first author as a part of doctoral research on the implementation and governance of multisectoral tobacco control policies in India.

Study setting

In this study we focused on the district level implementation units of the National Tobacco Control Program (NTCP) in Karnataka, India as the program promotes multisectoral action in formulation and implementation (Srinath Reddy et al. 2012). The NTCP enables the implementation of *The Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003* (COTPA, 2003) and creates awareness about the harmful effects of tobacco-related products. Each district tobacco control cell (DTCC) is staffed with a district nodal officer, district consultant, social worker and a psychologist/counsellor. At the district level, key implementation activities involve the following: a) Implementing and Monitoring of the COTPA 2003 by district-level enforcement teams and raising awareness by Information, Education and Communication activities; b) Sensitization and training of district-level stakeholders like Police, Teachers, Municipal, Transport, and Panchayati Raj Institutions, especially representatives of district-level enforcement teams; c) Monitoring and review of district level by District level Coordination Committee (DLCC), under the chairmanship of Deputy Commissioner of the district; and d) Support for tobacco cessation.

This study follows a sequential explanatory mixed-methods design (Creswell and Clark 2017). The quantitative social network analysis (SNA) across the two selected districts, based on the COTPA compliance data collected by the state anti-tobacco cell, enabled mapping of the network, and the identification of key actors. The department of health, with members from DTCC, led these networks, and the more compliant district had higher centralization, density, and reciprocity measures for the network (Mondal et al forthcoming). In this qualitative phase, which was informed and guided by the findings of the quantitative phase, we provided complementary

information regarding understanding of the observed patterns of governance in the networks, governance practices, and the roles and experiences of actors.

Data collection

The data collection for the qualitative study was informed and guided by the findings of the quantitative phase. We utilized two forms of data for this study: in-depth interviews and non-participant observations.

In-depth interviews: The quantitative network analysis findings informed the criterion-based sampling (Palinkas et al. 2015; Patton 1990) that continued until data saturation, the point at which no new information was heard in subsequent interviews (Lincoln and Guba 1985). The criterion for study participants included:

- The actors with highest in-degree centrality, suggesting the most central actors in the network. They are mostly comprised of members from the health department, especially the members of DTCC.
- We also included members from other participating departments to gain a multisectoral perspective.

The interviews were conducted by a pair of researchers. SM took the lead for English interviews, and SLB took the lead for interviews in the Kannada language. The respondents were contacted through phone for scheduling. The scheduling and rapport building was easier as this was the second phase of data collection, and the respondents had already shared their survey data previously. We conducted a total of 33 interviews, 19 in district 1, and 14 in district 2; their designation and departmental affiliation are mentioned in Table 9.1. Participants provided written consent for the interview, and permission to audio-record. One participant did not give permission for to use the recorder so extensive notes were taken during the interview. The researchers took hand-written notes during each interview and compiled and discussed them at the end of each session. Both researchers have master's degrees in public health, were trained in qualitative research methodology, and had experience conducting qualitative research in various settings.

Table 9. 1: Designation and Departments of the interviewees

Designation	**Department**	**Number**
District Commissioner	Department of Revenue	1
Municipal Health Inspector	Municipal Department	3

District Nodal Officer for Tobacco Control Program	Department of Health	2
District Consultant for Tobacco Control Program	Department of Health	2
Social Worker for Tobacco Control Program	Department of Health	2
Psychologist	Department of Health	1
Food Safety Officer	Department of Health	2
Senior Health Assistant	Department of Health	5
Block Education Officer	Education Department	1
Block Health Education Officer	Department of Health	1
Transport Officer	Department of Transport	1
Taluka Health Officer	Department of Health	3
Media Reporter	Media representative	1
Sub-Inspector	Department of Police	2
Additional Deputy Superintendent of Police	Department of Police	1
Assistant to Director I &B	Information and Broadcasting	1
Block officer/subject inspector	Education Department	1
DDPU	Education Department	1
Labour Inspector	Department of Labour	1
Medical College representative	Govt.Medical College	1

Non-participant observation: In terms of multisectoral participation, we observed two different activities at the district level: one DLCC meeting; 16 enforcement drives at the district level; and then at the sub-district level. We used the data from non-participant observations to triangulate, to deepen our understanding of the emerging results by converging visual and verbal data enabling to strengthen, and to draw additional insights from our data (Maxwell 2012).

Analysis

All audio recorded interviews were anonymized, English recordings were transcribed, and Kannada interviews were translated and transcribed into English. All translations were vetted by SM and SLB. During the data analysis process, we occasionally re-listened to interviews, checked their accuracy, and drew nuances from the process. We conducted a thematic network analysis (Attride-stirling 2001) with an iterative inductive-deductive coding approach (Gale et al. 2013). The data analysis involved five stages: exploring, describing, ordering, explaining and predicting. These were arranged in a network display (Miles, Huberman, and Saldaña 2013), that categorized basic, organizing and global themes (Attride-stirling 2001), grounded in a research

framework of hierarchical and network governance. Thematic network analysis allows researchers to order, re-order, and synthesize data around the thematic variable of interest by coding, grouping, and synthesizing the data around themes, and finally organizing the information coherently. The visual display of these thematic organizations also enables recreation of the readers' intellectual journey and increases confidence in the findings (Miles et al. 2013) (Supplementary file 1). We used the analytical software NVIVO-12 for coding and management of the qualitative data.

Using a joint-display table, we arranged, organized, and integrated data from the study's qualitative and quantitative phases (Creswell and Clark 2017). This data integration allows understanding of a coherent whole by drawing complementarity between data sources and explaining and narrating the observed patterns from the quantitative data.

Results

Context- the evolving nature of the implementation

The implementing actors readily distinguished NTCP from the routine vertical health programs that the departmental structure is equipped to implement. The program's district nodal officer noted "*it is not a vertical program, it is horizontal*", since such administrative arrangements require working across other departmental stakeholders and a mutual level of understanding from actors implementing the program, beyond their own primary department and its responsibilities.

The common modes of working across departments were described by participants as seeking cooperation and coordination. Health department respondents underlined that "*without cooperation you cannot do anything*" and "*if we are not coordinating with other departments, it will not be successful*". These respondents readily recognized that despite being part of and supported by the National Health Mission, they could not implement the program on their own, as the activities span across other administrative jurisdictions and duties. The NTCP was described as "*multi-departmental*" in which "*not just health department but all departments have a responsibility"*. This reflected an understanding among stakeholders that support from other engaged departments was essential to implement the program. The program's first step was to create awareness and sensitization among different participating departments through training programs.

Using authoritative power, formal contracts and engaging in social capital and exchanges

Formal contracts: vesting power to enforce

The department of health is the central actor in the implementation network, where the members of the DTCC and *taluk* health officers (THOs), who are sub-district health managers, lead the networks. In district 1, the nodal officer led the implementation for tobacco control, and in district 2 it was the district consultant, both part of the DTCC. The nodal officer has a designated authority as a "gazette officer" with an executive/managerial rank in the health administration. By contrast, the district consultant is a specific contractual hire, responsible for steering the district tobacco control programs through temporary recruitment, with their contracts being renewed annually. The district consultant expressed,

"It (power) is definitely, very necessary. Otherwise, it is very difficult; how are you going to implement without power? You may sensitize, you may give information, but people do not listen to you, so until you are showing your power, they will not listen".

-District Tobacco Consultant

The contractual nature of employment meant that consultants were devoid of the formal administrative powers vested with permanent gazette rank officers. This lack of power was also perceived as not being taken seriously and was limited to providing technical information to sensitize people against the harmful effects of tobacco. This feeling of being powerless was felt despite having experience and technical knowledge of working in the tobacco control program. This suggests that technical power grounded in expertise needs to be bolstered by formal power in the existing administrative structure and bureaucracy. An example of the lack of enforcing power/compliance was that these contractual hires could not sign on the receipt for imposing a fine. Hence the consultant had to rely on other gazette rank officers.

I need power to implement, I want the power to write the receipt for the fine amount for that a designated officer is needed, they (administration) should identify consultant also. Presently I don't have power to give the receipt to the seller, or violated people,

so we don't have power. Junior and senior health assistants and gazette officers and identified police officers, they are only given the power.

-District Tobacco Consultant

This experience also shows that requirements for multisectoral cooperation need to be integrated into the formal command and control bureaucratic structures, including sanctions. The temporary contracts restrict the utilization of the full range of implementation arrangements.

Formal contracts: providing enabling mandates

Formal contracts can also enact as an enabler by providing joint-working mandates. The designated officers THOs, who are sub-district managerial heads of the health department, felt more confident and at ease in working across different departments as their day-to-day job description requires such engagement:

Health programs need intersectoral participation in some ways, so it is not totally new to us. Usually, Tahsildar (sub-district revenue officer), education and women and child department, we take their help in every function. Like you have heard about the pulse polio and all. As a Taluka health officer, I interact with these officers from other departments through other programs, so it is not a challenge.

-Taluka Health Officer

The respective designations and their associated administrative responsibilities provided authoritative power to initiate a dialogue to start and build multisectoral work. This raises the importance of formal contracts, the defined roles and formal power bestowed to the officer, which validates the engagement. The need for formal contracts and mandates for participation in the multisectoral program is more pronounced for departments beyond health, in order to seek their engagement in the tobacco control program. Respondents across education and information and broadcasting described it as "*Not personally but, I am involved through the department*" or "*I am a representative in taluka level (sub-district) from the education department, it is my duty, it is my department's duty, and I am representing*". This participation was more accepted and motivated when the implementing officers could

make a connection with their departmental mandates and their job profiles, as one of the respondents from the education department expressed:

"*It is like two faces of a coin because even we are doing many health programs along with the educational programs. For example, personal hygiene, or cleanliness in the surrounding, to improve their health and well-being. So, we support health to have some programs about the diseases, if they tell we will do such a program in the school, the concerned school will organize everything required for the program and cooperate with them. All this is good for students*".

-Taluka Physical Education Officer

Thus, having formal contracts that speak to their own departmental mandates and outline the rules and roles of engagement, assigning authoritative power to enable implementers to participate and seek cooperation across different departments, can positively influence multisectoral policy implementation settings.

Mobilizing social networks: engaging in social exchange

Having formal contracts and authoritative power did enable implementers to participate and seek cooperation. However, knowing each other and engaging in informal relationships and exchange provided a necessary complement to formal contracts. The health department respondents commonly engaged in social exchanges, mobilizing their own networks to gain momentum for implementation and collaboration. One tobacco nodal officer observed that working at the district level enabled him to establish more informal ways of discussing projects and programs with fellow officials:

"Anyway, it is just like friendship, sometimes we go to different meetings in different programs. So, when we are sitting, we discuss in which department we are working like that, by two to three years, we will come to know that we have already worked and sections. Since three years many other officers are my friends, so we take a chance to discuss the health, this tobacco control programs in some of the meetings, so that whenever there is a chance to talk about it, they will give an opportunity, like that. Even if they ask our position and take our help, so with many of the departments we have exchange phone numbers, have WhatsApp groups, and we are in continuous touch

with other officials in all the departments. It is a little bit easy for me because I am in this position for three years; for newcomers, it may be difficult; I know already so many officers."

-District Nodal Officer

The designated nodal officers for tobacco control also leveraged their position and social connections to sensitize their fellow district officers about tobacco control program. The process of social exchange was easier if the officers were from the same district and worked for a longer duration of time. This established frequent interactions and nurturing of social relationships with other stakeholders in the district. One such officer, a medical doctor, was able to advocate for tobacco control measures when other district level officers consulted him with their own health concerns:

Yes, as district officer, I have charge and opportunity to talk to them; for example, sometimes some officials will contact me for getting their sugar levels checked everything, because I have a program of noncommunicable diseases., Then I will discuss about this tobacco control program with them, they will give some opportunity in their meetings to talk about, like that. Our staff have participated; it is not always me, its total team as such, we have participated in so many other programs, so there is a mutual understanding in the implementation of this program.

- District Nodal Officer

The implementers who had engaged with the district level functionaries previously, either working at the grassroots level or with other departments, were also able to utilize their social connections and relationships through camaraderie with the district officials, working in the same local area on similar projects. While working as a part of the tobacco control program, they leveraged their previous work and social relationships to seek cooperation and support. Thus, we see a complementary relationship between formally designated roles by contracts and social exchanges, where the stakeholders utilized formal rules to shape informal spaces.

Gaining legitimacy and creating trust, reciprocity, and social value

Top-level commitment-need for legitimacy to enforce

At the district level, the district collector (DC) from the department of revenue is the highest administrative ranking officer and has the convening power, legitimacy, and mandate to work with all the departments at the district level to encourage district development. The active role of DC was more evident in district 1, where the DC guided the program in allocating designated officers across the departments to form the tobacco enforcement team and conducted regular DLCC meetings. The enforcement team's identity was made legitimate by providing them with identity cards on behalf of the DC's office. The NTCP is implemented in the district where the departments are embedded in departmental hierarchies and already ingrained in established relationships. Thus, it was essential to overcome such hierarchies and enable working across departments at the district level through support from the DC. To enable the DC's engagement, the NTCP created the DLCC as a coordination mechanism in which the DC is the chairperson of the committee and district health officers (highest ranking health officer in the district) is the coordinator. These structural arrangements were created to garner essential interdepartmental cooperation and collaboration. The respondents usually described the program as under the "leadership", "guidance" and "chairmanship" of the DC.

The provision of designated identity cards on behalf of the DC office enforced legitimacy for the team members to conduct activities at the district level, as many tobacco vendors questioned the tobacco enforcement team's authority. Vendors would challenge the officers as to the imposition of fines, since in usual practice the health department is engaged with health service provision, disease control and not law enforcement. One of the health assistants mentioned "*Even the signature is done by DC. We will have the self-confidence that we are going officially on a raid (enforcement drive). We will have that moral courage*." The presence of representatives from the police department as part of the enforcement team also bolstered confidence as they represent the law enforcement department and authority. The health department representatives, especially doctors, noted support from the police and legitimacy from the DC enabled them to perform an expanded role in tobacco control, as their training and education did not equip them to enforce the law.

The engagement from each department was more proactive if the respective departmental heads also provided encouragement to participate. A health department representative remarked, "*it all depends upon the department head, his attitude, interest, if he is interested means everything is good. But if he is not interested means very difficult*". The willingness to engage with the tobacco control by heads of departments was reflected in assigning designated officers for the work and attending coordination committee meetings at the district level.

Building trustworthy reciprocal relationships

Legitimacy from the highest level was necessary and enabled health officials to initiate and take action on intersectoral issues. Nevertheless, the actors also engaged in forming trustworthy and reciprocal relationships to have continued support and interest. The mechanisms for trust creation were built through direct personal contact by building rapport, working on the same enforcement team, sharing knowledge, and was also associated with the officer's reputation and designation. One of the members of the DTCC explained the importance of trust with stakeholders from other departments as:

No, no, I am telling, first trust, first the person has to believe you 100%. When you approach people, 50% is about knowledge of technical information and then 50% about approach, talking and establishing trust.

-District Social Worker

It was commonly referred to as "*without trust, you cannot do anything*". However, creating a trustworthy relationship required having good technical competence to answer the queries and needed an open, kind and respectful approach. The other common practice for trust-building was to engage in frequent one-to-one, face-to-face, meetings with department heads and implementers from other departments. These repeated interactions enabled the stakeholders to understand the value of their support for the program, enabled "*rapport creation"* and made the coordination between departments easier, and at times carried equal weightage of issuing an official letter if not more:

We send the letter, but it is only for documentation purposes and official movement; we cannot do anything without one-to-one face-to-face meetings, without personal contact. First, we have to introduce ourselves, my name, my designation, my roles and responsibilities, all those things we have to explain, and then he/she understand what i am doing and finally support us.
(Later) ... Especially in the government sector, they are busy with their work. As I told you before, once rapport is built means that then face-to-face is not needed, we can contact through phone and say sir, this is the concern and he would say ok, you come on 10 or 11. At that time we will go and discuss."

-District Social Worker

Trust building was also facilitated by joint working arrangements, especially in the tobacco enforcement teams, where multi-department stakeholders came together to achieve a task. Working together enabled members of the enforcement team to trust, respect and rely on each other. As one of the health assistants explained:

The education department is responsible for creating awareness amongst children. Now, if we do a program that needs to be implemented in all the schools, we need each other's help. Since we are in the team (enforcement team), he will understand that I have been given this responsibility and respect my work. Otherwise, they will not take a keen interest, and they will have that confidence and trust us.

-Health Assistant

The health department respondents also cautioned that initiating cross-departmental work takes time and energy, especially during the initial meetings and discussions. They shared their experience of either waiting for long hours or repetitively going to meet other department stakeholders. Despite this tireless process to seek interest and gain trust, the process was described as rewarding as they expressed, "*once you build trust with them then finally you got success"*.

The process of trust-building was also linked to the ability to perceive the collaborative advantage of working across departments. The health department was bound to initiate these as they needed the cooperation of other departments. The representatives of other departments seemed to engage in the program because of reciprocity and dependency at the district level, and interest in gaining knowledge against tobacco. At the district level, the members of various departments were able

to work interdependently with each other beyond NTCP. For example, the block-level education officer shared that the health department provides doctors as a resource to lecture students on health and hygiene; the municipal health inspector also said that the health department supports him in programs like pulse-polio and TB, and that he is acquainted with working with health assistants from health departments. Hence, these stakeholders were willing to reciprocate, cooperate and support health department officials. The other common reason cited was the health departments' sound technical knowledge on the harmful effects of tobacco and on the advances in the tobacco control law. The assistant from the Information and Broadcasting Department expressed that "*he can gain new knowledge*" on the effects of tobacco, whereas the assistant district officer from the police department contacted the nodal officer to clarify the fines and process to seize newer tobacco products like e-cigarettes.

Common value: rooted in social good

The stakeholders across different departments at the district level shared a strong social commitment to take action against tobacco. The harmful effects of tobacco on health and social life are well known and were commonly described as 'life-threatening'. The concern of this product being used by the young also motivated many stakeholders. The framing of harm caused by tobacco as a societal problem, and not only as a health problem, encouraged stakeholders to contribute towards a societal good and protection of future generations:

See, if we think about the society, it is the whole responsibility of the human being who are living in the society, it is not only the police, or the health department, health is required for whom, not for health department, on my part also, I need health, and I want to live in a clean society, so that is why this is the thing.

-Police Inspector

The legitimacy from the highest administrative officer in the district provided authority and confidence to start multisectoral work. However, trust creation, reciprocity and associated social value provided support for continued engagement at the local level.

Enforcing administrative accountability and promoting a learning culture

Formal/hierarchical instruments to ensure accountability

The tobacco control program created structures such as the DLCC to review implementation activities and to enforce accountability. The coordination committees meeting at the district level are chaired by the DC and take place every quarter. They act as a mechanism for planning activities, getting approvals, reporting from the previous quarter, and reviewing the work done. One DC described the quarterly meetings as very helpful in the implementation of the law in spirit, to enforce multi-departmental accountability, and to review it in his limited time.

"For anything to get implemented, there should be constant review. Until and unless somebody is reviewing it gets neglected, and it will go out of my mind. Even though I may be eager to implement that, with such a workload, as mine, it may not be possible for me. So, these reviews will sort what will help us get us back into the tracks. Having all the other departments come for the meeting is helpful because it's the responsibility and concern of not only one entrusted department. Enforcing COTPA is the equal responsibility of multiple departments, so there needs to be some kind of accountability from each department, and hence review would be necessary".

–District Commissioner

The DC is the highest administrative ranking officer in the district, with the authority to enforce multi-departmental accountability. Health department officials also utilized the avenue of DLCC to plan quarterly activities at the district level, especially those requiring support from other departments, as the DC helped in seeking cooperation. One mechanism to ensure cooperation post-meeting was through meeting proceedings. Once a meeting is completed, the proceedings are signed by the DC. Then they are circulated to each department as action points and followed up at the beginning of the next meeting.

Beyond the joint review by the DC, the departments of education and police also created or integrated a review of tobacco control in their institutional structures. School development and review committees discussed and planned activities to create awareness among students and parents. The police department reviewed activities and fines collected under COTPA as a part of their monthly crime review and

reporting. These sub-structures in respective departments helped to enforce departmental accountability and take action on tobacco control.

Teamwork: building learning culture

The formal mechanisms like DLCC and departmental structures enabled enforcement of accountability through the administrative system, while the respondents also identified that working together cultivates a culture of mutual learning among the implementors across different departments. The joint-working environment allowed implementers "*to know duties and responsibilities of other actors and departments," "understand each other's challenges*," and in turn led to support for one other in the program. This working together and a joint feeling of a team was especially important during tobacco enforcement drives. These enforcement drives were organized to create awareness and enforce implementation of COTPA, especially sections related to prohibition of smoking in a public place, prohibition of advertisement and sale to a minor. The teams also ensured the proper signages displaying the fines and harmful effects of tobacco are installed in tobacco selling shops. As one of the members from the education department explained the benefits:

"Relationship between team members, the cooperation level is high. All these officers meet once a month, and each try to perform the role assigned to them. All have their work pressure and own assignments to do; still, they adjust and find time for the cause because working for health makes me happy and gives satisfaction."

--Block Education Officer

Frequent meetings and joint tasks created a bonding among the team members, and the task was commonly referred to as *"joint responsibility and not as a health department task*." This created a mutual learning environment among the implementers, and they were also able to overcome their departmental silos and vertical ways of working by understanding the value and need for mutual action. Once they understood the role of their contribution, they were able to create a balance between their own departmental priorities and the assigned duties of the tobacco control program.

We meet only during raids and meetings, other times, we do not meet; as I told you, we have our own work. As field workers, there is no fixed work for us; we cannot plan our work, I will do this today and something else tomorrow, like that we cannot have a fixed work schedule. But we will gather when there is a meeting or a raid, but we will not go to them and share a busy schedule.

-- Food Safety Officer

The members of this team also realized that this enforcement could only be achieved by a multi-departmental team and not by any single department: "*team works helps a lot, they can support each other a lot*". The inherent uncertainties and implementation challenges concerning multisectoral action resulted in a heightened need to course-correct as implementation proceeds. This included understanding the need for joint working, working in small teams to achieve a goal, which further acted as a stimulant to building working culture beyond the vertical silos of the departments.

The administrative structures for joint review by the highest-ranking officer enforced accountability and enabled cooperation from the participating department. Likewise, joint working arrangements also enforced mutual accountability among team members, appreciation of each other's work and the realization of the need for participation from stakeholders. Thus, promoting a change in working culture was enabled by experiential learning.

We further integrated the quantitative and qualitative data to show consistency in our results (Table 9.2), demonstrating a high validity of our findings. It further shows a mix of hierarchical and network governance practices at district level multisectoral policy implementation.

Table 9. 2: Integration of Quantitative and Qualitative data

Measure	Quantitative highlights	Qualitative themes	Integration/consistency in results
Actors with the highest in-degree	-Department of health is the lead organization I the network. Members of District Tobacco Control Cell (DTCC) and	DTCC responsible for the promotion and leading the program. THOs are administrative heads of sub-districts and connected to sub-districts Departments	The members of DTCC officially mandated by policy to perform the coordination role

	THOs in District-1, 2		
Engaged Departments	Health, Education, Municipal and Police	"*Departments are Education, health, home (police), municipality. The relationship between members and officers is good because all meet once in a month, there are no misunderstandings, good rapport."- Block education officer*	Teamwork part of enforcement team. Working together promotes learning culture, understanding each-others work.
Centralization in the network	-District 1 had a higher degree of centralization (Key role of nodal officer)	"*The nodal officer had taken the lead immediately when the team was built; actually, it was almost simultaneous building the team and introducing NTCP".-Subject Inspector Education* "*It feels like nodal officer is the one who is responsible for this program, and we are giving support, but all officers do not have that feeling, that this is our program (ownership), it is for the public health, so we have to work on this, but, the survey says, our District is the high compliance district."-Food Safety officer*	In district 1 the leading nodal officer had authoritative power beyond technical. He allocated resources and mobilized people for action. The nodal officer leveraged his social and local network from the district.
Higher density & reciprocity in the network	-District 1 had higher reciprocity and density, suggesting more cohesive and reciprocal action in the network	"*Here in our place, other department people are very nice. Because whenever we tell that we will be going at 10 o' clock, they will be ready at 10 o' clock. Very nice. I don't know in other taluks, our department people, they are very familiar.*"- *Subject Inspector Education*	Active role of DC in district 1, formed enforcement team with designated members. He issued valid ID cards. Joint working in team enabled learning environment.
Decision-makers in the network beyond health	Departments of Revenue and Police were key decision-making Departments	"*yes, (police has) enforcement position, the main person who can do the part of the work is police, police can be*	Legitimacy to take and convene multisectoral action lies with DC from the department of revenue department of

	beyond health at the district level.	*organizing, coordinating with other departments easily, individually they can do the enforcement, they have full capacity*."*-District consultant* "*The role of DC/ADC is very important to every and also because he is the department's administrative head, so, he can convince other department people actually to cooperate*". *-District consultant*	police has the authority to enforce the law in the district, and their support for enforcement is necessary.

Discussion

This research study focused on governance in a multisectoral policy implementation setting at the local level. The findings from the research suggest that local level governance practices are sustained by complementary hierarchical and network/relational mechanisms as they act as forms of exchange governance (Figure 9.1). Hierarchical and relational mechanisms rely on different paths of action: (a) Networked/relational aspect rely on social exchange, gaining trust, building common value and creating a learning culture; and (b) hierarchical aspects rely on formal contracts utilizing authoritative power, relying on legitimacy and employing administrative accountability. The interplay between these two aspects of governance enables stakeholders across different departments to cooperate, coordinate and sustain the continued support for implementation of the policy.

The formal rules and contracts act as initiators and enablers, as an instrument, which provides space to shape the relational aspects when utilized by the actors. At the same time, these relational aspects have a mediating role in sustaining the action, as they promote exchange conditions and reciprocity based on trust and change in working culture. The formal contracts and rules aim to foster cooperation by triggering partners to focus on rules and responsibilities as an initial point of reference. Nevertheless, relational norms initially emerging from contracts gradually turn into implicit understanding based on finding common grounds to solve the implementation problem. Trust among partners emerges as a factor for mutual conviction, choice and

commitment. The collaborative process of social learning is particularly suited in multisectoral

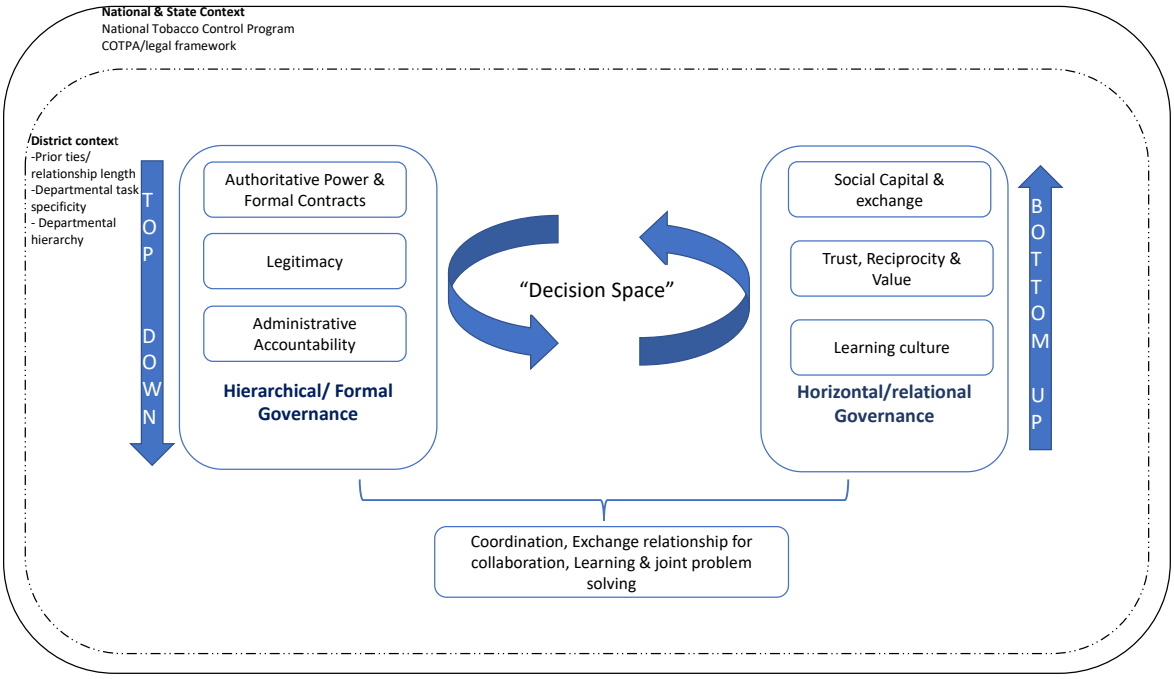

Figure 9. 1: Interaction of hierarchical and networked forms of governance at the local level

settings as it increases trust and understanding of shared norms and values. However, social learning is a gradual process and requires cultivation of spaces, time and effort. This dynamic and fluid nature of the relationship between the two aspects of governance makes space 'porous'. This dynamic space is often referred to as the "decision space at the local level," where local actors exert a degree of choice and discretion (Bossert and Beauvais 2002).

This "decision space at the local level" has been rarely explored in multisectoral literature in health, where the literature has focused on creating formal contacts, institutional mechanisms, creating adequate structures and mandates. The local governance literature on local governments has identified the importance of the local level. It offers a unique arena to provide leadership to local issues due to their local proximity that can be harnessed to provide practical guidance to implementation (Rantala, Bortz, and Armada 2014; Tsouros 2013). At the local level, studies have focused on funding, coordination structures, mandates or shared visions, impact assessment through monitoring and evaluation (Rantala et al. 2014), ownership,

accountability and national and local steering (Guglielmin et al. 2018). However, these studies have not explored the relational aspects or interaction between formal hierarchical and relational aspects of governance. In our research, we demonstrated the importance of employing formal governance, which is critical for multisectoral action, but we also argue that there is a need for further exploration and deeper understanding of relational aspects and the interaction of these two coexisting, complementary approaches in the local decision space.

The 'decision space' as defined by Bossert and Mitchell is a space that is utilized by local authorities to excise a degree of choice and discretion, creating a balance between *de jure* (formal contracts and rules) and *de facto* (practice). Therefore, in this space, there is a need to consider formal contracts and hierarchies and the relational aspects that may govern the actual range of choices afforded by local actors (Bossert & Beauvais 2002; Mitchell and Bossert 2010; Scott et al. 2014). Such a "decision space" assumes that an increased space for local actors will enable them to take more innovative action based on and responsive to local needs (Bossert and Mitchell 2011). This space represents a dynamic continuum ranging from none to complete decision space and can have diverse results (Bossert 2016; Mohammed, North, and Ashton 2016). The roles assumed by the various actors depend on the distribution of authority and are nested within the history and context of public sector reforms to devolve and transfer power to authority. Thus, each context is bound by the available decision space and can fall anywhere across a wide spectrum of utilizing and performing (Newell et al. 2005; Waweru et al. 2013).

In the Indian setting, this decision space has been created by a long history of decentralized planning, reinforced during fifth and sixth period plans for three-tiered decentralized governance at the district level (Singh and Singh 2011). However, its progress was hastened by the constitutional position of the creation of a district planning committee through the 73rd and 74th Constitutional Amendment Act, 1992 (Planning Commission of India 2001). The amendment enabled devolution from the federal level; however, its interpretation and implementation were left in the respective states' hands. Apart from the public sector reforms, the health sector in India had undergone devolved planning and implementation as one of the core strategies under the National Rural Health Mission (MoHFW 2005). Under the Mission mode, active decentralization was promoted in the health sector, issuing specific directives and guidelines to promote allocation and management of funds and sharing responsibilities

across different health systems levels. It actively promoted decentralized health planning under the district health action plans. Given the history and context of such reforms, although the progress towards decentralization remains varied and slow, it creates a more legitimate decision-space and experience among stakeholders at these local levels in planning and executing decentred reforms.

Thus, a focus on governance of a multisectoral policy in health at the local level is nested within the larger context of public sector reforms and public administration. The structures, mandates, and multisectoral engagement mechanisms need to superimpose with the existing local level governance in practice to be more effective. The study's findings provide evidence for complementary joint effects of hierarchical and relational forms of governance, where the decision space remains dynamic and can create variability in implementation. We thereby argue that the adaptive and agile governance practices centred around responding to change, adaptiveness to context, and learning processes, are better suited to MSA. These two governance practices occur concurrently to create synergies, and inquiry needs to focus on creating these enabling spaces that promote understanding of interaction and characteristics of adaptive governance practices.

Strength and Limitations

This multisectoral case study research focused on local-level governance practices in tobacco control policy in two districts in the state of Karnataka, India. The study interviewed actors across different departments, such as health, education, municipal, police, labour, media representative and information and broadcasting. However, there are certain limitations. First, our study focuses on two purposefully selected districts in Karnataka. Districts in India can be fairly large geographical entities bounded by socio-economic and political contexts; hence we caution adapting the findings for other multisectoral policies in other contexts. Secondly, the duration of fieldwork for conducting the interviews coincided with the general elections in India, and we were not able to secure interviews with some district officials due to their engagement in the election process, we then selected alternate respondents from the same department. This might have affected the quality of information collected as the earlier respondents were chosen because of their position in the network.

Conclusion

At the outset of this study, we adopted a network conceptualization to understand the evolving governance practices in multisectoral policy, documenting key aspects of relational governance and its interaction with hierarchical governance forms. Our findings suggest that this interaction between the two modes of governance practices creates a ‘dynamic space’ that promotes adaptive governance practice, a mix of both top-down and bottom-up. Depending on the context, stakeholder needs, and implementation experience, this adaptive approach provides them with the space to create joint working cultures to promote change in practices. Multisectoral governance needs to create innovative spaces for deliberation and decision-making, balancing the formal hierarchical mechanisms and the emerging engaging informal ones, mobilizing tacit knowledge and everyday practices. This practice-oriented governance framework provides a starting point for developing much sought-after guidance for policy and new ways of thinking informed by the practice

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Supplementary Table1: Thematic display

Analytical/Global theme	Organizing theme	Basic theme
Hierarchical/Formal Governance	Authoritative power & Formal contracts	Gazette Rank officer having power
		Contractual appointments lack the authority
		Countersigning the challans to impose fines
		Assigned/designated roles by the policy
		Nominated departmental members (beyond health)
		Issuing circulars to seek cooperation/ coordination
		Departmental norm
	Legitimacy	Authority to lead/convene multisectoral action
		Identity to conduct enforcement drives
		Authority to lead enforcement drive
		Expected role of Health Department
	Administrative rule for accountability	Review and monitoring using DLCC meetings
		Meeting proceedings and follow-ups
		Highest decision-making authority at district
	Social capital & exchange	Using of social relations for cooperation/ coordination
		Participating in exchange mechanisms
		Leveraging previous work relationships
Network/Relational Governance		
	Trust	Conducting face to face meetings (direct contact)
		Repeated meeting and interaction
		Duration of engagement with the program/Department
		Designation and technical knowledge
	Reciprocity	Beneficial and gain for own Departments
		Gaining new knowledge
		Understanding of dependency for task completion
	Value	Betterment of society
		Harm reduction and protection of future generations
		Societal responsibility to take action
	Learning culture	Understanding roles and responsibilities
		Bonding among team members to support each other
		Conducting joint tasks, feeling of team members
		Rapport building to achieve task completion

Chapter 10: Discussion

In this section of the dissertation, I first describe and synthesize the findings from the four manuscripts. At the outset of the thesis, I outlined four objectives for thesis. The first objective was to review and identify theories and theoretical applications in MSA; this was met by conducting the meta-narrative review (manuscript 1/chapter 6) to identify how knowledge on MSA from other domains of research can advance the theory and application in health. The second objective focused on drawing a policy landscape at the national and state level, this was achieved by outlining and delineating the policy process, enablers, and challenges for multisectoral action at the national and state level (manuscript 2/ chapter 7). I also highlighted the role of actors and drivers for collaborative action, thus ways to mobilize and influence the multisectoral policy process. The third and the fourth objectives aimed at mapping, exploring, and explaining the district level implementation structure and governing practices adopted by the implementers. Following a mixed methods design (manuscript 3-4/ chapter 8-9), I provide the visual map of district level implementation structure, identify actors and their relationships, and describe how implementers sustain local level governance practices and use the local decision space to promote MSA. Together, these findings from the manuscripts illuminate how implementation and governance of multisectoral policies are sustained at multiple levels and can be improved to increase wider impact of these policies.

Second, I advance the discussion of this dissertation by situating the empirical findings in the state-of-art literature on the network and multi-level governance and draw implications for multisectoral implementation and governance practices in general. The chapter ends with a review of the limitations of the thesis research.

10.1 Synthesis of results

10.1.1 Theories, frameworks, and application of multisectoral action

This thesis began by exploring the theoretical roots, focus and motivation of multisectoral action (MSA) across the knowledge domains of health, political science, public administration, and environmental sciences (manuscript 1). Political science and public administration draw on two decades of implementing 'joined-up

government' reforms in high-income-countries (HICs) that go beyond the traditional ways of working and focus on the dynamics between institutions, encountering challenges of coordination and the need for departmental control. Traditionally, the policy sector refers to sectoral specialization and compartmentalization of public action, structured according to their specific knowledge and interests (163). Hence, coordination faces the challenge of overcoming a department's own objectives and rules (164) and power relations between sectors and between departments (165). The exploration of the literature in environmental sciences focuses on building collaborative partnerships within the context of climate change (166–169). The findings here signify the challenge of partnerships in being responsive and able to balance sectoral needs with competing interests in building consensus (170), and the associated challenge of blurring accountability (168). The findings from the review highlight the need for MSA to consider issues of power, interests and control, and show how the conceptualization of health needs to pay more attention to the political dimensions of MSA, in addition to the technical aspects. The review also provides a summary of theories and frameworks applied across research domains to study MSA, which can be further explored and applied in future research.

The synthesis of the literature highlights the importance of: 1) implementation instruments; 2) enabling institutional mechanisms, including formal mechanisms and informal networks and an interplay between hardware (i.e. resources, management systems, structures) and software (i.e., the realms of ideas, values, power); 3) need for leadership; 4) political will; and 5) a variety of accountability mechanisms, inclusive of traditional political and administrative accountability, plus additional legal, professional and social accountability.

The overall findings emphasize the need to carefully consider broader political context and the dynamic exchange of actors as these interactions do not occur within the context of a single policy or program but are embedded within interests and institutional dynamics.

10.1.2 National and state level policy processes and drivers for collaborative action

Given the need to understand the broader macro policy-related context, the empirical enquiry included a policy landscape analysis at the national and state level. Using the case of the NTCP as a multisectoral policy, the study (manuscript 2) mapped the engaged actors at the national and state level, their interests and mechanisms of

participation in the policy process. This analysis generated insights into the formulation, adoption, and adaptation of the policy, describing the context, explaining the processes involved, and sharing the key drivers for collaborative action. These insights into the policy process were narrated by people engaged in the policy process for more than a decade.

The findings from the key informant interviews and the review of policy documents reveal the considerable attention paid to policy issues related to tobacco control over more than two decades. The policy context was framed by COTPA, a national law against tobacco, and the adoption of a dedicated national program providing structural support and being a signatory to the global FCTC treaty to enable commitment to act against tobacco. The collaborative action was sustained by participation from key actors in the Ministry of Health and Family Welfare, state departments of health, research organizations, technical support organizations, non-governmental organizations, citizenry, and the media. The participation of such a diverse group of actors also confirms that governance has become truly polycentric and crosses the usual administrative boundaries during policy formulation and adoption for implementation. The state level efforts concentrated on mobilizing the politico-administrative framework and garnering institutional mechanisms enabling financial support for local level implementation.

Using Berlan et al.(144), I describe the five key steps from policy adoption to implementation, which highlight the policy processes and overlapping and complementary role of the engaged stakeholders. These steps are: a) the role of research and evidence in the generation of policy alternatives; b) deliberation, consultation and the role of expert opinion; c) political sensitization and legal intervention; d) lobbying to influence policy decisions; and e) state adoption and implementation.

In an attempt to further insights into MSA, I identify the key drivers for collaborative action using a collaborative governance framework (145). These drivers are: (1) institutional mechanisms for collaboration; (2) multi-level cross-sectoral leadership; (3) political motivation; and (4) mobilization. However, the findings show that, despite building common grounds for action and trustworthy relationships, the process of collaboration was not completely free from conflict. The challenges of policy incoherence at the national level, especially different sectoral priorities which included both tobacco control measures and the encouragement of tobacco cultivation,

presented a challenge for collaborative action at the national and state level. The other major factor was the negative impact of lobbying tactics used by the tobacco company representatives on the process of policy formulation and adaptation. The use of legal instruments and litigation has been the most successful mechanism to limit industry interference.

The findings from this empirical research conclude that the nature of multisectoral health policy processes remain dynamic, complex, contentious, and is constantly evolving. The findings contribute towards the generation of knowledge for enabling a macro policy context in multisectoral policies, highlighting how different actors can engage with the policy processes.

10.1.3 The local level implementation network, decision space and adaptive governance practices

The local level implementation analysis follows a two-part mixed-methods explanatory methodology: the exploration and structural analysis of the implementation network; and the explanation of observed patterns in the networks and documenting governance practices for implementation. In the first part of the investigation, I started by mapping the district level stakeholders and quantifying their relationships in implementing tobacco control policy using social network analysis (manuscript 3). I selected two districts with different compliance to the tobacco control law, one with greater (district 1) and another with lesser (district 2), for comparison and produced three comparative social network maps: 1) interaction; 2) information-seeking; 3) decision-making. The mapping suggested that the department of health is the lead organization driving the implementation. The members of the district tobacco control team are the most central actors in the network across both districts. In the first district, the district nodal officer for tobacco remained central, well connected to other members across the district, and led the network. The second district showed a similar centralization pattern, however, the sub-district health managers were identified as prominent nodes (actors) and acted as brokers in their sub-districts to provide information and decision-making support. The most engaged departments across both districts were health, education, police and municipal. The first district also had higher centralization score, reciprocity, and density, suggesting a more cohesive, reciprocal and centrally connected network, making communication and the sharing of information easier and more direct than in the second district.

The differences identified between district networks can offer some plausible explanation as to their compliance levels. District 1, with higher compliance, had a more centralized network that offered the potential for rapid diffusion of information, with high reachability of a central actor. In district 2, the sub-district health managers acted as brokers or bridges to the main network in facilitating the flow of information and resources within groups of people separated from the main network. In a dispersed network, initiating and maintaining communication channels requires intensive efforts, whereas in a centralized, denser and more reciprocal network the members are more connected, and information and behaviour can spread more quickly.

Using the SNA, I illustrated the actors, their position in the implementation network, and the relationship between them, thus providing a map of the district levels' implementation structure. I further offer plausible explanations to help pinpoint the factors that affect compliance by calculating the network indices. I demonstrate how structural mapping allows us to understand the network dynamics, and the role played by the central actors. Exploring and understanding the network characteristics provides a useful tool for allow researchers and policy practitioners to intervene in these networks to strengthen the relationships and build capacities of the lead actors, and thus can effectively contribute to improvements in the policy implementation processes.

Building on these observed patterns in network analysis and identification of key actors in the implementation process, I further deepened the enquiry, using a sequential explanatory mixed-methods design (147). The qualitative phase is guided and informed by the quantitative phase and provides a complementary understanding of observed patterns in the networks and governance practices employed and the roles and experiences of the actors.

The findings from the qualitative phase suggest that local level governance practices are sustained by a mix of complementary hierarchical and network/relational mechanisms as forms of exchange governance. The hierarchical governance utilizes formal contracts utilizing authoritative power, relying on legitimacy, and enforcing administrative accountability for implementation. The networked/relational governance relies on social exchange by mobilizing social relations, creating trustworthy and reciprocal relationships built on common values, and enabling a learning culture to promote joint working. The interplay between these two aspects of governance creates

a dynamic decision space at the local level, enabling stakeholders across different departments to exert a degree of choice and discretion to seek cooperation, coordination and sustain continued support for implementing the policy.

Thus, using qualitative methodology I further the local level interrogation of implementation networks, documenting the adaptive governance practices and the importance of dynamic decision space. The findings suggest the need for and significance of creating innovative spaces for local deliberation and decision-making that can provide a way of balancing formal hierarchical mechanisms with emerging engaging informal ones in everyday governance practices.

10.2 Implications for multisectoral implementation and governance practice

10.2.1 Multisectoral policy implementation: utilizing networked theory

"Networks have been widely recognized by both scholars and practitioners as an important form of multiorganizational governance. The advantages of network coordination in both public and private sectors are considerable, including enhanced learning, more efficient use of resources, increased capacity to plan for and address complex problems, greater competitiveness, and better services for clients and customers." (Provan and Kenis, 2007)

I conceptualized the implementation structure and governance in a multisectoral policy as a network. The complex landscape and associated challenges of multisectoral policies have been characterized as 'wicked' problems (138). The nature of these issues requires the intervention and support of more than one sector or department, as well as societal actors, to take joint action. Networked governance is a form of multi-organization governance as it increases capabilities to plan and take action, enhancing the pooling of and efficient use of resources (124,125). It also captures complexity, which arises due to multiple actors who engage in governance and reflect the dynamic nature of a system's components and relationship, making it hard to predict how a system may behave and effect outcomes (171,172). Networks take into consideration horizontal relationships and informal norms and practices between mutually dependent (public, private, citizenry) actors to solve a complex policy issue or deliver on a program (173). Thus, networks provide adequate theoretical conceptualization for multisectoral policy implementation where multiple actors are engaged and focused on cooperation and coordination to work horizontally in steering the network. This

enables the illustration of how governance increasingly occurs through interactions between multiple actors through both formal and informal processes.

In my enquiry, I combined a networks analytical approach and networks as a form of governance. The network as an analytical approach explains network structural characteristics using concepts such as density and centrality. The main objective was to describe, explain, or compare relational configurations or to use these configurations to explain certain outcomes of policy. The network as a form of governance approach views it as a mechanism of coordination. I use a combination of these two approaches to provide the analytical depth by mapping the structural pattern of relationships, providing scope to explore these relationships as governance mechanisms.

The results of the study highlight how the politics of multisectoral policy implementation involves managing actors, organizations, and institutions. It also requires paying attention to the interests of the actors involved, building consensus, managing conflict, bargaining and stimulating joint action. By using networks as a technique and conceptualization, I demonstrate how they are beneficial to uncover relational aspects, and how these networks are steered and governed. The findings indicate that governance mechanisms in multisectoral implementation are mixed, where hierarchical or governance interacts with relational or horizontal governance. The contractual form of governance remains the main mechanism within an institutional setting, but in a joint-working arrangement where institutions and actors need to interact, relational mechanisms gain importance. These seemingly different mechanisms can act in a complementary way, providing a 'decision space' at the local level. This space is utilized to build and nurture relationships by enabling trust, creating a learning environment, and leveraging social relationships. As these relationships are embedded in power differences and departmental hierarchies, formal and hierarchal means of governance, especially having the legitimacy to convene, authoritative power to make decisions, and enforcement of administrative accountability, remain important. Thus, my contribution to the implementation literature provides an account of ‘how’ these practices balance each other and act in a complementary way to provide a dynamic 'decision space' at the local level, enabling them to improve the implementation process.

10.2.2 Towards a multi-level governance perspective on MSA

This section discusses the findings from manuscripts 2, 3 and 4 (chapters 7, 8 and 9) to examine the interconnectedness between local level implementation and the national and state level through the use of a multi-level governance frame. By detailing multi-level issues, such as enabling supportive policy environment, this section shows how public health policies can be better supported from higher (national and state) level decision-making.

Governance of multisectoral policies is an archetypical example of a wicked problem (174). Multisectoral policy typically cuts across policy sectors and established levels of government and affects all levels of society, diverse policy areas and many different sectors (106,138). The effective and long-term management of such policies is typically hindered by traditional hierarchical and departmentalized methods of governing (163). Multi-level governance relates to increasing integration, dependence between administrative levels and sectors, and the corresponding development of new governance strategies. This is assumed to have important consequences for the capacity of governments and organizations to effectively govern, and for citizens to participate in and influence decision-making and politics (175).

Bach and Flinders (174) specify that "multi-level referred to the increasing interdependence of governments operating at different territorial levels, while the governance signalled the growing interdependencies between governments and non-government actors." Multi-level governance is generally understood to operate in two directions: vertical (in a hierarchy of jurisdictions or central bodies with coordination of actors) and horizontal (a sideways ‘dispersion of power’ or cross-sectoral integration across departments or industries). Young (176) also distinguishes between horizontal and vertical interplay: horizontal interplay concerns interplay at the same level of social organization (functionally separated regimes); vertical interplay appears between different levels of social organization (global, national, sub-national and local levels).

This section will focus on the vertical dimension between national, sub-national (state) and local (district) and some aspects of horizontal at the national and state level. We have already discussed the horizontal aspect of the local level in the focus of our enquiry. The actors engaged at each level with their specific roles are discussed in manuscripts 2 - 4.

The below-mentioned table (Table 10.1) illustrates the overlapping roles and interdependencies between different levels (national-state-district) of governance. The darkest shade of grey shows the primary responsibility, and successive lighter shades represent secondary but necessary responsibility in the policy process. The exact shade of grey in the same row shows shared participation.

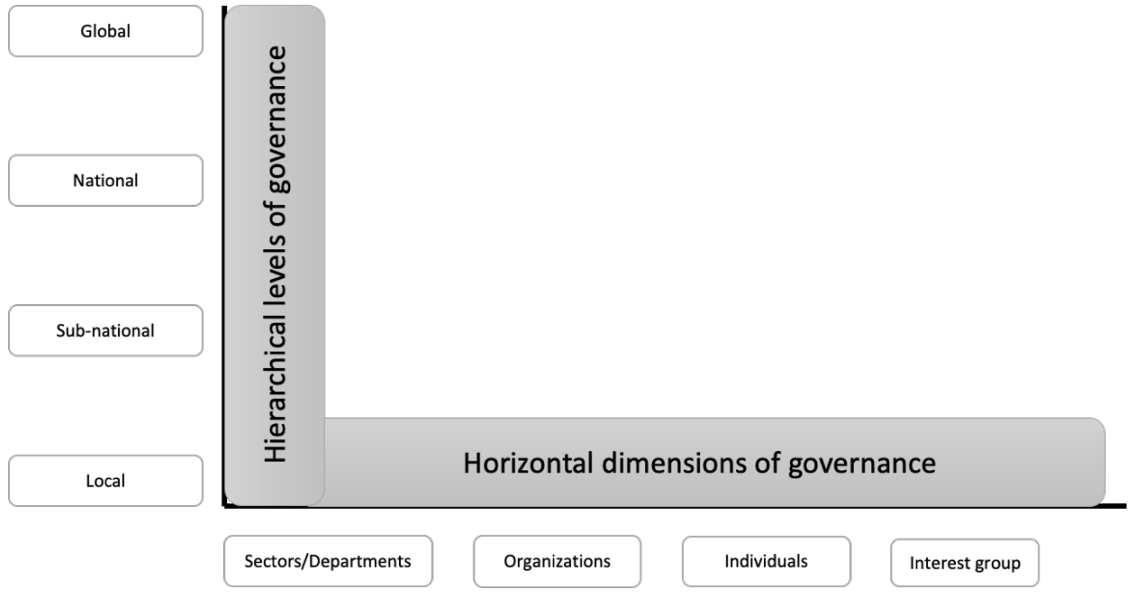

Figure 10. 1: A multi-level, cross-level and cross-sectoral matrix of tobacco control (Adapted from Di Gregorio et al. 2019)

Table 10. 1: Multi-level governance in tobacco control program (tasks and level of governance).

Actual Governance Responsibility	Specific task	National	State	District
Developing policy mandates as a negotiated fit between evidence, negotiation, and consultation	Policy as a negotiated fit between international, national, and contextual experiments and evidence			
	Political mobilization to garner support, advocacy for policy			
	Convening of expert groups/meetings/advisory groups			
	Assessing policy alternatives			
	Seeking support from associated ministries/departments			

Defining guidelines and adaptation, organizational responsibilities	Defining roles and responsibility of actors and sectors			
	Defining mechanisms/structures of collaboration and coordination with other sectors/ actors at all levels			
	Budgetary allocations for the program			
	Defining human resources for the program			
	Developing Monitoring & Evaluation systems (Performance review)			
Implementation of guidelines-aligning planning, human resources, and financial systems	Mobilizing socio-political environment			
	Planning (piloting)			
	Allocation of resources, hiring human resources			
	Monitoring and review of the program			
	Technical support program for the program			
	Innovation/adaptation based on context			
	Structures for coordination			
Leadership to lead multisectoral action to promote multisectoral action	Promotion of collective vision			
	Mobilizing political, social support and structures for action			
	Institutionalization of innovation			
	Promoting joint learning strategies			
Legal framework	Act development/mobilization			

I did not cover the international or supra-national level in the table as those stakeholders were not part of the study design and research. However, some national level participants did articulate the importance of the supra-national or global level for COTPA policy development. This includes the positive influence on the national policy environment of the multilateral FCTC treaty, to which India is a signatory, and the availability of evidence-based guidance like MPOWER: (a) **M**onitoring of tobacco use and prevention policies (b) **W**arning against hazardous tobacco use (c) **P**rotecting population from tobacco smoke (d) **E**nforcing tobacco advertisement and sponsorship (e) **O**ffering help to quit tobacco (f) **R**aising tobacco taxes (32,177). The

implementation of each of these evidence-based measures necessitates collaboration between health and other non-health sectors, and a call for multisectoral approach with political leadership (178).

The national level played a key role in mobilizing support for policy development, weighing and generating contextualized evidence, and focused on processes to gain momentum by mobilising political support and formalizing a national program and implementation guideline. The creation of a national health program ensured institutional support, enabling establishment of an integrated three-tier structure of tobacco control cell at the national, state and district levels. This structural design also ensured adequate provision of technical expertise to each successive level to implement the program and created a dedicated configuration that was responsible for the program at all levels. A dedicated national program also ensured provision of necessary budgetary allocation to support the program and the opportunity to hire adequate human resources and plan activities for the program. Having the COPTA as a national-level legal act enhanced the mandate for different departments to take action on tobacco control. The national level also established high-level inter-ministerial committees to promote coordination across ministries and departments on tobacco issues.

The state level played an essential role in the adoption and implementation of national guidelines. During the initial implementation stages, the piloting of intervention and research on the need for adaptation proved to be critical. The state level also mobilized its socio-political machinery to gain impetus. The formation of a high-powered committee on tobacco, chaired by the principal secretary of state, provided a unique mechanism to ensure multisectoral review at the state level that included taking action, and passing timely resolutions on tobacco control issues to initiate multi-departmental action. The state anti-tobacco cell also supports the districts in annual planning, training, allocation of resources and provision of technical supervision. It also promotes innovation in programs based on the contextual requirement.

The district level implementation activities are in-sync and coordinated with the state level efforts. Under decentralised health planning, district share their annual plan and budget for programs. At the district level, tobacco control activities promote the sensitization and training of engaged stakeholders from other department, provide resources to conduct tobacco enforcement activities, support the cessation of tobacco use, and generate awareness of the harmful effects of tobacco. The district level

coordination efforts are led by the district health department. However, to gain multisectoral support, district level coordination committee meetings are chaired by the highest administrative officer of the district, the district commissioner. These meetings act as a mechanism for departmental coordination, review, and monitoring. Thus, local level implementation is embedded in the state and national policy context. There is necessary commitment from a higher level to provide institutional support in the form of a national program, dedicated human resources, and adequate financial capacity. This is ensured by creation of a three-tier institutional structure (national-state-district), and effective coordination mechanisms at the national, state and district level to review the MSA.

The interconnection between levels is inherently linked to the administrative levels of government. Policy implementers and designers need to recognize the complexities and characteristics of the administrative context in which their policies will become operational. In the Indian federal political system, both the National/Union government and sub-national/state governments enact laws. Each state is administratively divided into districts, which act as the organizational unit for managing and delivering social services, including health. Thus, policy development and guidance come mainly under the purview of national level and policy adoption and implementation is steered by individual states and respective districts.

In effect, health sector policy implementation does not happen in a vacuum but is nested in the context of public sector and administrative structures, including federalism and the devolution of power and control. Framing MSA as a multi-level governance issue takes this into account and conveys the iterative processes of negotiation and co-production across the levels of the health system, in which there is "sharing of responsibilities and power of influence, both horizontally (between ministries and between actors at a local level), and vertically (between various government levels)" (179).

More importantly, I argue that implementation and the multi-level governance perspective is particularly relevant to MSA, and more attention needs to be paid to roles and responsibilities at each level and the interfaces with other levels. The discussion in health research has so far engaged with MSA as a technical issue, requiring adequate structures and support for implementation. However, the nature of these processes is inherently political, and includes interests and power dynamics,

and thus must be accompanied by an understanding of actors' interests and power relations at different levels.

10.3 Study limitations

In this section, I discuss the study in relation to analysis, results, and interpretation of findings. The constraints related to selecting the study site, interviewees, and data collection were already presented in the respective manuscripts (manuscript 6-9)

For my thesis framing, conceptualization, and analysis, I used concepts nested in public administration and political science and primarily applied and explored in the political systems of high-income countries such as governance (collaborative, networked) and multi-level governance, although there have been some instances of applying these in environmental governance in LMIC (180). However, being mindful of these constrains, I used these concepts as a guiding force in exploring the macro context and political environment and situated the local level findings in a multi-level framework and administrative reforms, to ensure that the study findings could be relevant for other federal or multi-level systems beyond India.

One major constraint was imposed by time and resources, which limited other research into salient contextual features of the national level policy. Tobacco control policies are widely impacted by trade and taxation policies, and this is especially true in a tobacco-producing economy such as India, where public subsidies for agriculture are important. For the same reason, I restricted our enquiry by referring to policy documents, acts, orders and amendments within the health sector, and our interviews focused on the health sector, NGOs, research, and technical support organizations. Though the respondents mentioned existing nuances in other sectors, their perspectives are lacking in the thesis. I also excluded tobacco industry participation in the study, as including them would have shifted the focus away from local level implementation in Karnataka state and would have considerably expanded the scope of the study. However, as the study had an immersive focus on local level implementation, I mapped all the sectors and departments engaged at that level and included them in our study.

Finally, some limitations that may have introduced social desirability bias into the studies in this thesis include the fact that findings were self-reported or based on the respondent's perception of context, situation, and outcomes. To mitigate this, I obtained information from different categories of actors in the health system and

information was obtained using more than one source of data. Manuscript 2 used document review and interviews, while Manuscripts 3 and 4 follow a mixed-methods design, connecting one data collection method to another, using methods like survey, interviews, and observation. Multiple methods enabled data triangulation to have coherence in findings.

Chapter-11 Contribution, way forward and conclusion

"A new stage in the development of the world economic and political system has commenced, a new kind of world order, which is characterised both unprecedented unity and unprecedented fragmentation. Understanding this new world order will require new modes of analysis and new theories, and a readiness to tear down intellectual barriers and bring together many approaches, methods and disciplines which have for too long been apart".

(Gamble et al. 1996: 5)

This dissertation has made several contributions through four distinct empirical chapters. In this last concluding chapter, I highlight the contributions of this dissertation towards the theory, research, and practice of implementation and governance of multisectoral policies. I first describe my contribution to literature on implementation and governance and then on advancing the methodology to research multisectoral policies. In the second section, I provide an overview of policy conclusions along with avenues for future research and practice. The final section of this chapter provides a conclusion section to the dissertation.

11.1 Contribution to advance theory and action on implementation and governance of multisectoral policies

This dissertation contributes to the research domain of implementation and web of governance arrangements surrounding local multisectoral policy implementation. This is an area in need of much attention and exploration, especially in the LMIC context. I contribute towards a bottom-up networked perspective, as I work upwards from the local perspective, instead of top down, demonstrating how field level implementation practices can re-shape statutory policies.

First, the dissertation examines the concepts, frameworks, and empirical applications from different knowledge traditions (health, political science and public administration, and environmental sciences) that have been applied in multisectoral policy analysis. The dissertation expands the application of theories on networked governance in the empirical inquiry of MSA implementation in LMICs. It allows for the exploration of the interaction between formal arrangements and informal norms, and examines the interaction of systems hardware (i.e. resources, management systems, structures) and software (more specifically the realms of ideas, values, power). Providing an understanding of the relational dimensions of governance can help

ensure that those responsible for implementation can drive policy into practice more effectively. The network theory and framework presented in this dissertation can be used as a tool to think ahead about the research and conceptualize a multisectoral policy implementation.

Second, the study provides some plausible answers as to the broader question of how local level implementation can be strengthened from inputs and support from the state and national level. This involves the identification of a different bundle of strategies to be implemented at each level, in accordance with mandates and responsibilities. It also shows that the effective implementation (which is emergent joint problem solving) of these policies can only be incremental in nature as actors first have to learn how to work together in traditional vertical bureaucracies before engaging in trustworthy relationships.

Third, the study uniquely contributes to the health governance literature on implementing multisectoral policy by empirically applying network governance and multi-level governance theories to a LMIC governance context. This provides a useful framing to understand the embeddedness of local MSA in multi-level governance arrangements. It also delineates the processes of local level governance to enhance our understanding of how actors engage in intersecting hierarchical top-down governance and emergent bottom-up governance arrangements to sustain MSA. This literature on MSA has paid much attention towards its operationalization by setting up structures for joint action such as committees, units and councils, or joint budgets (64). However, the literature is deficient on the detailing and understanding of actual processes, and the implementation practices that are adopted by the actors involved (109,181). The findings from this dissertation fill this gap in the literature by illuminating how such instruments and structures are used in practice and how actors realize MSA at the local level. The study thus is able to explain the process and answer the 'how' in the policy action continuum.

Finally, my study shows that the governance of multisectoral policies is highly complex as it is embedded in formal rules, informal norms, actor's interests and trustworthy relationships between individuals and sectors.

11.2 Contribution to methodology: meta-narrative review, policy landscape, social network analysis and mixed methods

This dissertation contributes to theory building by grounding the research in theoretical conceptualization and by generating insights and empirical evidence for local MSA implementation in a LMIC. The thesis begins with the documentation of concepts and theories, providing a theoretical foundation for the empirical (field) study. Research on multisectoral collaboration in health has not benefited from and is not often informed by relevant frameworks and theories used in the broader literature (18). The need for theoretical frameworks for MSA that work across sectors and disciplines has already been identified (182). This study provides the first review on MSA that employs meta-narrative methodology to inform and draw theoretical and empirical learnings for health from other disciplines. It serves as a starting point for further integration of MSA and other research traditions, which is very much needed to tackle the complex challenges in the domain of MSA.

Another contribution of the thesis is the use of multiple methodologies. This thesis uses a range of data collection methods, combining qualitative and quantitative methodologies to enable a deeper enquiry, and provides an illustration of the use of mixed methods in researching the implementation of multisectoral policy. Using quantitative SNA as an innovative tool, I map, measure and quantify the relationships in two districts with different implementation performances to aid comparison. The network maps that were generated act as a visual aid and make the structure explicit, contributing to local level network analysis.

The mixed-methods research in which quantitative and qualitative methods are used sequentially broadens and deepens the investigation of health policy and systems, as one stage of the work feeds into another and offers opportunities for triangulation across methods (183–185). I employ a mixed-methods sequential explanatory design to extend the enquiry, initially using quantitative SNA to explore and then using qualitative methods to explain the observed patterns and to capture implementation experiences, perspectives and practices. I further use a data integration tool of joint-display (150), used in mixed-methods to compare qualitative and quantitative results. This provides a further depth to my analysis and produces "*a whole through integration that is greater than the sum of the individual qualitative and quantitative parts"*(186)

Finally, the stepwise nature of enquiry that focused on national, state and local level illustrates the inherent connectedness between these levels. The national and state-level policy landscape allowed me to explore the context and analyze the interaction across the local-state-central level interface and, in turn, to understand how local-level implementation is influenced by national and state-level decision-making processes and enabling the drawing of inferences on the multi-level governance aspects of MSA implementation. These theoretical prepositions, analytical concepts and empirical methodology can be adapted for multisectoral policy setting in different contexts. Hence, this research advances methodological innovation in health systems and policy research to advance the enquiry on MSA.

11.3 Policy conclusions for promoting multisectoral action

At the district level

Local tobacco control program implementation is led by the district department of health and needs necessary resources, skills, and decision space to promote MSA. To enable local level action, policy design at national and state level needs to include local implementers' feedback and experiences to foresee that the adequate support and resources are there for successful implementation.

Spaces for promoting joint action

It needs to be recognized that there are inherent departmental hierarchies; for example, at the district level, the departments of revenue and police remain higher in the departmental hierarchy. The main mechanism to work with this department is through seeking cooperation and coordination. Policy guidelines need to facilitate ways of engagement of these departments in the implementation process.

First, the creation of structures like DLCC (coordination committees) can engage the respective district administrative heads, and enable review, monitoring and garnering support from other departments to participate in the program.

Second, policy design can facilitate the formation of multisectoral teams for the enforcement of tobacco policies at the district level. The formation of a team with joint responsibility promoted ownership with a collaborative spirit and joint-working arrangements to promote a learning culture for team members.

Third, policy design for MSA needs to facilitate spaces for action to enforce accountability through hierarchical and institutional mechanism while at the same time providing avenues for district level actors to come together and function as a team with common goals to promote a shared and mutual learning culture. This complements the interdepartmental committees where accountability is a top-down matter, as team members with joint tasks develop a learning culture and ownership by working together.

Overall, formal strategies need to be balanced and engage with the informal in order to harness knowledge. The creation of spaces for horizontal ways of working alongside the hierarchical modes can provide the necessary decision space to develop at the local level.

Training support and monitoring

The district level health department drives the program and must seek cooperation and support from multiple departments and actors that are higher in departmental hierarchy or have higher administrative ranks. The training of the district team thus needs to focus on building leadership and negotiation skills, with analytical performance reviews to improve steering capability and critical reflection, as these capacities are beyond the technical expertise of the program.

SNA and network maps can be used by the district level teams to strengthen the program by identifying departments and actors needing more engagement, and to strengthen brokers' involvement to transfer the flow of information more quickly. A map can also be used as a tool to measure the change in the delivery of program-related training and to visually depict how it promotes new relationships with departments and/or strengthens existing relationships among the members.

Districts as learning sites

The findings from this local level, bottom-up research on implementation shows the potential role of districts or local level to inform the actual practices that can realize effective multisectoral policies. During the early phases of development of the operational guidelines for tobacco control, implementation pilot districts were chosen to produce feedback about policy design. However, the implementation context and practices remained dynamic and evolving, thus for policies to remain relevant there is

a need to incorporate or create a dedicated feedback channel from the districts to state and national levels

Developing districts as 'learning sites', through long-term, formalized, continuous research and partnerships can promote continuous learning that creates an overlap between policy development and implementation. This can also promote the refinement of national policy and program design and can promote continuous joint learning at the national level and between different states as well as cross learning between districts. Simultaneously, this can also provide the scope for the improvement of everyday practice at local level by engaging and informing wider policy discussions.

At the national and state level

The local level implementation is nested within national and state level dynamics. The roles and responsibilities for action, and adequate support from these levels is essential to enable implementation at the local level.

National level for guidance and state level for operationalization and adaptation

In a large federated system like India, the national level can steer policy development and implementation by designing necessary guidelines and frameworks. However, state level adoption, adaptation and advancement of these institutional frameworks, are necessary for effective implementation and to remain relevant to context and need of the state. In other words, national level guidelines only come to life when the state's own politico-administrative framework and coordination mechanisms are mobilized to set the policy into practice. Thus, the purpose of national policy guidelines should provide an overview and serve as a guide that can promote and allow for some measure of state level innovation.

The state level can also act as the balancing lever between national guidelines and enabling implementation support at the districts. The state can encourage action on multisectoral mandates by engaging with participating departments to carve out their role and develop mechanisms for institutionalization and integration. For example, COTPA reporting on violations and fines by the police department shared with other departmental reporting in their monthly crime review meeting. Such integration promotes departmental interest, accountability, and responsibility for action in multisectoral policy. This kind of operationalization is best suited by states, as they

can mobilise the administrative engagement between departments and also have the contextual knowledge to suitably adapt national guidelines.

Invited spaces

In India's NTCP, the policy design also provides 'invited spaces' for non-state actors such as NGOs, technical support organizations, research organizations and individuals to engage in the policy process throughout the stages of policy development. These actors have helped the ministry of health and state health departments in advancing policy and have provided valuable implementation support. These policy spaces are crucial for MSA policy development, and the interaction between stakeholders to advance multisectoral policy is essential as MSA needs constant adaptation to remain relevant and focused.

Framing as larger social good

In the case of tobacco control, the motivation for joint action across national, state and district levels were driven by the harm caused by tobacco related products, either in the productive life years or as a threat to future generations. Moreover, death and disabilities caused by tobacco were seen as largely preventable. Stakeholders utilized a larger framing and social value attached to harm caused by tobacco to draw attention and support for MSA. Thus, the framing of multisectoral policies as a larger societal good and promoting societal value can gather support for action from multiple actors and the engaged organizations.

Claimed spaces

These are the spaces which are claimed by less powerful actors to create autonomous room for policy action. In the case of tobacco control policy, there was action taken by the citizens in filing PILs, which played a critical role in mobilizing public opinion and dampening the tactics used by the tobacco industry to promote its products. They also questioned the intent of governmental decisions and argued for the adoption of a human rights approach. At the state level, tobacco victims engaged in state level political sensitization and advocacy against the use of tobacco products. Multisectoral policies are often contested, and it is important that they follow the principles of human rights and ethics to promote larger equity in the society. Engagement of societal actors

in the policy process using tools like PILs and advocacy can help ensure checks and balances on governmental action.

11.4 Future directions for research

I examined a multisectoral policy through the case of tobacco control in India, focusing on local level implementation and using an explanatory mixed methods design, and linked it to the national and state level context. This dissertation intends to lay the groundwork for future research regarding the understanding of local MSA implementation and governance practices. I suggest four propositions for advancing the theory and research on MSA.

1. The local level decision space remains dynamic, and actors employ several relational/horizontal/informal practices in addition to formal/contractual/hierarchical governance practices. These practices can better be understood through ethnographic fieldwork that involves a detailed understanding of the practices in action and the real-life environment. This research approach can explore power, politics, informal relations, resistance and change in organizations, producing valuable insights on multisectoral implementation settings.

2. I also demonstrate, through a multi-level framework, that local level governance spaces are interwoven with the macro national and state context, particularly in the historical evolution of administrative structures and public sector reforms. These structural factors deeply affect governance practices in local health systems and are likely to differ between national contexts. We need, therefore, a better understanding of how these structures and practices operate at other levels, especially in a federal system, and cut across these levels. One possible direction for research is to compare these multisectoral governance practices on specific health issues at the local level in different countries, with a comparative analysis of governance arrangements as a starting point. This domain of research can contribute towards the development and applications of implementation theories specifically by testing them across administrative and institutional configurations. It will thus allow researchers to revisit their theories and refine them to take into consideration the influence of contextual factors, including organizational cultures, political structures, and economic systems which differ across countries but matter in affecting policy outcomes and the behaviors of policy actors. A major contribution of this category of research is in the

development and applications of public policy theories by testing their explanatory power across institutional configurations.

3. I used a meta-narrative review to understand theoretical propositions and empirical applications to inform MSA in the health sector. This led to the first review to explore MSA across disciplinary traditions and provides an essential step to encourage interdisciplinary research in generating solutions for complex problems. The domains of public administration and political science advanced the theory and thinking for MSA for decades; in their empirical application, environmental sciences are concerned about how power and interests lie at the core of MSA and comparative across different countries. Other research domains such as organizational sociology and management sciences have explored and lent importance to MSA. Organizational sociology, for example, can provide a better understanding of organizational structures, cultures and processes and their influence on work practices, while management studies can enhance the understanding of day-to-day complex management and decision-making practices to steer complex partnerships. These research domains can also be explored in future studies to develop a deeper understanding of MSA in practice.

4. I used SNA in an innovative mapping of the MSA implementation structure at the district level, identifying key actors and their relationships. However, due to the limitation of time and resources, I could not measure change in the network structure over a longer period. As these networks are dynamic, it will be valuable to note change using stochastic actor-oriented modelling (SAOM) (187) to assess the dynamics of social relations by collecting network data at different points in time. Stochastic models can predict (to a certain extent) the formation of ties among people as the product of various micro-structural properties of networks and personal attributes of people, controlling for internal tendencies of social networks. The main advantage of this approach over conventional regression models is the ability to predict structural trends in social networks and consider longitudinal changes as continuous processes.

11.5 Conclusion

This dissertation contributes towards a knowledge gap by focusing on the actualization of process by delineating the unfolding and adopting of a multisectoral policy in a LMIC. I unpack the dynamic and multilayered process of policy adoption and implementation by stakeholders. This research demonstrates that local level

implementation relies on working with and through a set of actors and structures to coordinate efforts, communicate policy objectives, achieve reciprocity from implementers, build a learning culture, and seeking cooperation by building trustworthy relations to sustain MSA. Local level governance practices are more adaptive in nature, sustained by complementary hierarchical and relational mechanisms, making it more conducive to MSA. The fluid nature of exchange between these mechanisms provides a porous and dynamic decision space at the local level, constructing innovative spaces for deliberation and decision making.

In a federated country like India, the role of the multi-level (national and state) policy environment is essential. These levels provide the framework and structure that can allow for local level space for experimentation and adaptations pertinent to local conditions. The supportive role of other levels and channels for policy feedback from the district level can provide continuous refinement of policies and can contribute towards sustainability of MSA. Multi-sectoral action is not static but rather a involves continuous engagement, and a better understand of the dynamics of policy processes in the implementation of multisectoral policy is essential to guide and ensure its success in practice.

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APPENDICES

Appendix A: Research ethics certificates

INSTITUTE OF PUBLIC HEALTH
BENGALURU
Strengthening health systems since 2005

12th June 2018 **IPH/18-19/E/32**

INSTITUTIONAL REVIEW BOARD DECISION COMMUNICATION

Study ID	**IEC-ER/01/2018**
Date of submission	15th April 2018
Title of Proposal	Understanding the dynamics of inter-sectoral policy implementation: An examination of policy networks and practices in tobacco control in India
PI	Shinjini Mondal
Category of review	Full review
Review date	31st May 2018
Decision	**Approved**
Valid till	**31st May 2019**

Dear Principal Investigator,

The protocol **IEC-ER/01/2018** was reviewed by members of the IEC on the 31st of May 2018 and they have decided to **approve the study.**

We request you to submit a final report at end of project in the format specified by the IEC. Also, in case there are changes or amendments to the protocol submitted (Version1.2_11.06.2018) please notify the IEC. At any time during the research, if you are faced with an adverse event or an ethical concern, you are expected to bring it to the notice of the IEC.

Best wishes,

Dorothy Lall, IEC Member secretary,
IPH, Bengaluru

No 250, Master's Cottage, 2nd 'C' Cross, 2nd 'C' Main, Giranagar 1st Phase, Bengaluru 560085
Contact: 080 26421929, mail@iphindia.org, www.iphindia.org

McGill

Faculty of Medicine
3655 Promenade Sir William Osler #633
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3655, Promenade Sir William Osler #633
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CERTIFICATION OF ETHICAL ACCEPTABILITY FOR RESEARCH INVOLVING HUMAN SUBJECTS

The Faculty of Medicine Institutional Review Board (IRB) is a registered University IRB working under the published guidelines of the Tri-Council Policy Statement, in compliance with the Plan d'action ministériel en éthique de la recherche et en intégrité scientifique (MSSS, 1998), and the Food and Drugs Act (17 June 2001); and acts in accordance with the U.S. Code of Federal Regulations that govern research on human subjects. The IRB working procedures are consistent with internationally accepted principles of Good Clinical Practices.

At a Board meeting on 14 May 2018, the Faculty of Medicine Institutional Review Board, consisting of:

Patricia Dobkin, PhD	Frank Elgar, PhD
Sylvie Lambert, PhD	Catherine Lecompte (non-voting)
Sally Mann, M.S.	Kathleen Montpetit, MSc
Roberta Palmour, PhD	Lucille Panet-Raymond, BA
Shahad Salman, LL.M.	Daniel Saumier, PhD
Blossom Shaffer, MBA	Margaret Swaine, BA

Examined the research project **A05-E24-18B** titled: *Understanding the dynamics of inter-sectoral policy implementation: an examination of policy networks and practices in tobacco control in India*

As proposed by: Prof. Antonia Maioni (Applicant) to _____ (Granting Agency, if any)

And consider the experimental procedures to be acceptable on ethical grounds for research involving human subjects.

14 May 2018 (Date) — Roberta Palmour (Chair, IRB) — Dean of Faculty

Institutional Review Board Assurance Number: FWA 00004545

Appendix B: Study Permissions letters

State Tobacco Control Cell,
Department of Health & Family Welfare Services,
Anand Rao Circle, Bengaluru -09

No: **NHM/NTCP/13/2018-19** **Date: 16th August 2018**

To,

Dr. Shinjini Mondal,
Institute of Public Health (IPH),
No:250, 2nd 'C' Main, 2nd 'C' Cross,
Girinagara, 1st Phase, Bengaluru – 560085.

Subject: Permission to undertake study under tobacco control programme in Karnataka.

Reference: Request received on 30/7/2018 from Dr.Shinjini Mondal, PhD Candidate, McGill University, Montreal, Canada & Honorary Associate, Institute of Public Health, Bengaluru .

Request received from Dr. Shinjini Mondal was examined by a committee consisting of Deputy Director (Medical -1), State Consultant - NTCP and Project Manager, Bloomberg Initiative Project, State Tobacco Control Cell, Bangalore. The Committee after examining the proposal recommended the study titled ***"Understanding the dynamics of inter-sectoral policy implementation: An examination of policy networks and practices in tobacco control in India"***, focusing in 2 districts Udupi and Ramanagara.

Based on the recommendation, approval is accorded to Dr. Shinjini Mondal for the said study for a period of 15 months with effect from August 2018 under the following conditions:

1. There shall be no financial implication to Department of Health & Family Welfare.
2. Final report copy shall be submitted to the under signed.
3. Candidate shall keep Deputy Director (Medical -1) informed about the progress of the study on monthly basis.
4. Data/information collected or acquired shall be solely utilized for the purpose of Research Study only and prior permission should be availed from Health department to publish papers, articles, journals etc related to this study.

Joint Director (Medical) &
Member Secretary,
State Tobacco Control Cell,
Health & Family Welfare Services,
Bengaluru

-PTO-

Copy for kind information to:

1. Commissioner, Health and Family Welfare Services, Bengaluru
2. Mission Director, National Health Mission, Bengaluru
3. Director, Health and Family Welfare Services, Bengaluru

Copy for necessary action to:

1. District Health and Family Welfare Officer, Udupi and Ramnagara Districts.
2. District Surveillance Officer, National Tobacco Control Program (NTCP) Udupi & Ramanagara.
3. Dr. Shinjini Mondal, PhD Candidate, McGill University, Montreal, Canada & Honorary Associate, Institute of Public Health, Bengaluru
4. Office Copy

ಕರ್ನಾಟಕ ಸರ್ಕಾರ

ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಅಧಿಕಾರಿಯವರ ಕಛೇರಿ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ-೫೬೨೧೫೯
ಇ ಮೇಲ್, dhoramangaram@gmail.com, Ph No: 080-27276058. Mobile No: 9449843061

ಸಂ:, ಆಡಳಿತ/01/2018-19 ದಿನಾಂಕ: 19-09-2018

ರವರಿಗೆ
ಡಾ॥ ಶಿಂಜಿನಿ ಮೋಂಡಲ್
ಇನ್ಸ್‌ಟಿಟ್ಯೂಟ್ ಆಫ್ ಪಬ್ಲಿಕ್ ಹೆಲ್ತ್
ಬೆಂಗಳೂರು-85

ವಿಷಯ: ರಾಮನಗರ ಜಿಲ್ಲೆಯ ತಂಬಾಕು ನಿಯಂತ್ರಣ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು ಅನುಮತಿ ನೀಡುವ ಬಗ್ಗೆ.

ಉಲ್ಲೇಖ: ಜಂಟಿ-ನಿರ್ದೇಶಕರು, ರಾಜ್ಯ ತಂಬಾಕು ಕೋಶ, ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಸೇವೆಗಳು, ಬೆಂಗಳೂರು ರವರ ಪತ್ರ ಸಂ: NHM/NTCP/13/2018-19 ದಿನಾಂಕ: 16-08-2018

*****

ಮೇಲಿನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ತಾವುಗಳು ರಾಮನಗರ ಜಿಲ್ಲೆಯ ತಂಬಾಕು ನಿಯಂತ್ರಣ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು ಅನುಮತಿ ನೀಡುವಂತೆ ಉಲ್ಲೇಖಿತ ಪತ್ರದಲ್ಲಿ ಕೋರಿರುತ್ತೀರಿ. ಅದರಂತೆ ಸದರಿ ಕಾರ್ಯಕ್ರಮದ ಅಧ್ಯಯನ ನಡೆಸಲು ಅನುಮತಿಯನ್ನು ನೀಡಿದೆ.

ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣಾಧಿಕಾರಿ
ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ

ಪ್ರತಿಯನ್ನು
1. ಮಾನ್ಯ ಜಿಲ್ಲಾಧಿಕಾರಿಗಳು, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
2. ಮುಖ್ಯ ಕಾರ್ಯನಿರ್ವಹಣಾಧಿಕಾರಿಗಳು, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
3. ಪೋಲಿಸ್ ಅಧೀಕ್ಷಕರು, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
4. ಉಪ ನಿರ್ದೇಶಕರು, ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
5. ಉಪ ನಿರ್ದೇಶಕರು, ಸಾರ್ವಜನಿಕ ಕಾರ್ಮಿಕ ಇಲಾಖೆ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
6. ಉಪ ನಿರ್ದೇಶಕರು, ಅಬಕಾರಿ ಇಲಾಖೆ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
7. ಉಪ ನಿರ್ದೇಶಕರು, ಇನ್‌ಫರ್‌ಮೇಷನ್ ಇಲಾಖೆ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
8. ಉಪ ನಿರ್ದೇಶಕರು, ಸಮಾಜ ಕಲ್ಯಾಣ ಇಲಾಖೆ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
9. ಉಪ ನಿರ್ದೇಶಕರು, ಹಿಂದುಳಿದ ಮತ್ತು ಅಲ್ಪ ಸಂಖ್ಯಾತರ ಇಲಾಖೆ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
10. ವಿಭಾಗೀಯ ವ್ಯವಸ್ಥಾಪಕರು, ಕೆ.ಎಸ್.ಆರ್.ಟಿ.ಸಿ, ರಾಮನಗರ ಜಿಲ್ಲೆ, ರಾಮನಗರ ರವರಿಗೆ ಮಾಹಿತಿಗಾಗಿ ಸಲ್ಲಿಸಿದೆ.
11. ಕಛೇರಿ ಪ್ರತಿ

ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಕುಟುಂಬ ಮತ್ತು ಕಲ್ಯಾಣ ಇಲಾಖೆ,
ಉಡುಪಿ ಜಿಲ್ಲೆ , ಉಡುಪಿ-576101

ಇ-ಮೇಲ್: dhoudupi@gmail.com ಫೋನ್ ನಂ: 0825-2525666

ಸಂಖ್ಯೆ: ಡಿಹೆಚ್ಓ/ಎನ್.ಟಿ.ಸಿ.ಪಿ./ 194 / 2018-19 ದಿನಾಂಕ: 27-09-2018

ರಿಗೆ,

ಡಾ. ಶಿಂಜಿನಿ ಮೋಂಡಲ್,
ಇನ್ಸ್ಟಿಟ್ಯೂಟ್ ಆಫ್ ಪಬ್ಲಿಕ್ ಹೆಲ್ತ್,
ಬೆಂಗಳೂರು-85

ಮಾನ್ಯರೇ,

ವಿಷಯ : ಉಡುಪಿ ಜಿಲ್ಲೆಯ ತಂಬಾಕು ನಿಯಂತ್ರಣ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು ಅನುಮತಿ ನೀಡುವ ಬಗ್ಗೆ.

ಉಲ್ಲೇಖ: ಜಂಟಿ-ನಿರ್ದೇಶಕರು, ರಾಜ್ಯ ತಂಬಾಕು ಕೋಶ, ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ಸೇವೇಗಳು, ಬೆಂಗಳೂರು ಇವರ ಪತ್ರ ಸಂಖ್ಯೆ: NHM/NTCP/13/2018-19 ದಿನಾಂಕ: 16-08-2018

★★★★★★

ಮೇಲಿನ ವಿಷಯಕ್ಕೆ ಸಂಬಂಧಿಸಿದಂತೆ, ತಾವುಗಳು ಉಡುಪಿ ಜಿಲ್ಲೆಯ ತಂಬಾಕು ನಿಯಂತ್ರಣ ಕಾರ್ಯಕ್ರಮವನ್ನು ಅಧ್ಯಯನ ಮಾಡಲು ಅನುಮತಿ ನೀಡುವಂತೆ ಉಲ್ಲೇಖಿತ ಪತ್ರದಲ್ಲಿ ಕೋರಿರುತ್ತೀರಿ. ಅದರಂತೆ ಸದರಿ ಕಾರ್ಯಕ್ರಮದ ಅಧ್ಯಯನ ನಡೆಸಲು ಅನುಮತಿಯನ್ನು ನೀಡಿದೆ.

ಈ ಸಂಶೋಧನೆಯ ಫಲಿತಾಂಶದ ದತ್ತಾಂಶ ಹಾಗೂ ವರದಿಯ ಪ್ರತಿಯನ್ನು ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣ ವಿಭಾಗಕ್ಕೆ ಸಲ್ಲಿಸುವಂತೆ ಸೂಚಿಸಲಾಗಿದೆ ಹಾಗೂ ಸಂಶೋಧನೆಗೆ ಅನುಮತಿ ಇದರ ಮೇರೆಗೆ ನೀಡಲಾಗಿದೆ.

ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಮತ್ತು ಕುಟುಂಬ ಕಲ್ಯಾಣಾಧಿಕಾರಿ,
ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ

ಪ್ರತಿಯನ್ನು :

1. ಜಿಲ್ಲಾ ಪೋಲೀಸ್ ಅಧೀಕ್ಷಕರು ಉಡುಪಿ ಜಿಲ್ಲೆ.ಉಡುಪಿ.
2. ಮುಖ್ಯ ಕಾರ್ಯ ನಿರ್ವಾಹಣಾಧಿಕಾರಿ, ಜಿಲ್ಲಾ ಪಂಚಾಯತ್, ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ

3. ಅಪರ ಜಿಲ್ಲಾಧಿಕಾರಿಯವರು, ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ.

4. ಉಪನಿರ್ದೇಶಕರು, ಸಾರ್ವಜನಿಕ ಶಿಕ್ಷಣ ಇಲಾಖೆ, ಉಡುಪಿ.

5. ಉಪನಿರ್ದೇಶಕರು, ಪದವಿ ಪೂರ್ವ ಶಿಕ್ಷಣ ಇಲಾಖೆ, ಉಡುಪಿ

6. ಜಿಲ್ಲಾ ಶಸ್ತ್ರ ಚಿಕಿತ್ಸಕರು, ಜಿಲ್ಲಾ ಆಸ್ಪತ್ರೆ, ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ

7. ಅಧ್ಯಕ್ಷರು ಜಿಲ್ಲಾ ಹೋಟೆಲ್ ಮಾಲಿಕರ ಸಂಘ ಉಡುಪಿ ಜಿಲ್ಲೆ. ಉಡುಪಿ

8. ಸಹಾಯಕ ಔಷಧ ನಿಯಂತ್ರಕರು ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ.

9. ಅಂಕಿತ ಅಧಿಕಾರಿಯವರು, ಆಹಾರ ಸುರಕ್ಷತೆ ಮತ್ತು ಗುಣಮಟ್ಟ ಕಾಯಿದೆ, ಉಡುಪಿ ಜಿಲ್ಲೆ. ಉಡುಪಿ.

10. ಸಹಾಯಕ ಆಯುಕ್ತರು ವಾಣಿಜ್ಯ ತೆರಿಗೆ ಇಲಾಖೆ VAT 280 ಉಡುಪಿ.

11. ಜಿಲ್ಲಾ ವಾರ್ತಾ ಅಧಿಕಾರಿಗಳು ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ

12. ಡಾ। ಪಿ.ವಿ ಭಂಡಾರಿ, ಮಾನಸಿಕ ರೋಗ ತಜ್ಞರು, ಬಾಳಿಗಾ ಆಸ್ಪತ್ರೆ, ಉಡುಪಿ ಜಿಲ್ಲೆ. ಉಡುಪಿ.

13. ಡಾ। ಪ್ರಕಾಶ್ ತೋಳಾರ್ ಮಾನಸಿಕ ರೋಗ ತಜ್ಞರು,ಮಾತಾ ಆಸ್ಪತ್ರೆ, ಕುಂದಾಪುರ.

14. ಅಧ್ಯಕ್ಷರು ಐ.ಎಮ್.ಎ. ಉಡುಪಿ, ಕುಂದಾಪುರ, ಕಾರ್ಕಳ

15. ಜಿಲ್ಲಾ ಕೋ ಆರ್ಡಿನೇಟರ್ ಶ್ರೀ ಕ್ಷೇತ್ರ ಧರ್ಮಸ್ಥಳ ಗ್ರಾಮಾಭಿವೃದ್ಧಿ ಸಂಸ್ಥೆ, ಪ್ರಗತಿ ಸೌಧ, ಉಡುಪಿ.

16. ಅಧ್ಯಕ್ಷರು ಜಿಲ್ಲಾ ವೈನ್ ಮರ್ಚೆಂಟ್ ಅಸೋಸಿಯೇಶನ್ ಉಡುಪಿ ಜಿಲ್ಲೆ.

17. ಜಿಲ್ಲಾ ಕ್ಷಯ ರೋಗ ನಿಯಂತ್ರಣಾಧಿಕಾರಿ, ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ

18. ಜಿಲ್ಲಾ ಸರ್ವೇಕ್ಷಣಾಧಿಕಾರಿ, ಉಡುಪಿ ಜಿಲ್ಲೆ ಉಡುಪಿ.

19. ತಾಲೂಕು ಆರೋಗ್ಯಾಧಿಕಾರಿಗಳು, ಕುಂದಾಪುರ, ಉಡುಪಿ, ಕಾರ್ಕಳ

20. ಡೀನ್ ಕೆ.ಎಂ.ಸಿ ಯುನಿರ್ವಸಿಟಿ ಮಣಿಪಾಲ

21. ಪ್ರಾಂಶುಪಾಲರು ಸರ್ಕಾರಿ ಪ್ರಥಮ ದರ್ಜೆ ಕಾಲೇಜು ತೆಂಕನಿಡಿಯೂರು.

22. ಪ್ರಾಂಶುಪಾಲರು ಮಹಿಳಾ ಪ್ರಥಮ ದರ್ಜೆ ಕಾಲೇಜು, ಉಡುಪಿ

23. ಪ್ರಾಂಶುಪಾಲರು ಎಮ್.ಐ.ಟಿ. ಮಣಿಪಾಲ.

24. ಪ್ರಾಂಶುಪಾಲರು ಎಮ್.ಜಿ.ಎಮ್ ಕಾಲೇಜು, ಉಡುಪಿ

25. ಪ್ರಾಂಶುಪಾಲರು ಭುವನೇಂದ್ರ ಕಾಲೇಜು ಕಾರ್ಕಳ.

26. ಪ್ರಾಂಶುಪಾಲರು ಎಸ್.ಎಮ್.ಎಸ್ ಕಾಲೇಜು, ಬ್ರಹ್ಮಾವರ

27. ಪ್ರಾಂಶುಪಾಲರು ಪಿ.ಪಿ.ಸಿ. ಕಾಲೇಜು, ಉಡುಪಿ.

28. ಆಯುಕ್ತರು, ನಗರ ಸಭೆ ಉಡುಪಿ.

29. ಜಿಲ್ಲಾ ಕಾರ್ಮಿಕ ಅಧಿಕಾರಿ, ಉಡುಪಿ ಜಿಲ್ಲೆ, ಉಡುಪಿ.

30. ಜಿಲ್ಲಾ ಆರೋಗ್ಯ ಮೇಲ್ವಿಚಾರಕರು, ಡಿ.ಎಚ್.ಓ ಕಛೇರಿ, ಉಡುಪಿ.

31. ಗ್ರಾಮ ಲೆಕ್ಕಿಗರು, ತಾಲ್ಲೂಕು ಕಛೇರಿ, ಉಡುಪಿ/ಕುಂದಾಪುರ/ಕಾರ್ಕಳ

32. ವಿಭಾಗೀಯ ನಿರ್ವಹಣಾಧಿಕಾರಿಗಳು, ಕೆ.ಎಸ್.ಆರ್.ಟಿ.ಸಿ., ಉಡುಪಿ ಜಿಲ್ಲೆ.

33. ಕಛೇರಿ ಪ್ರತಿ

Regarding HMSC Decision

icmr@cdac.in

Mon 9/17/2018 5:48 AM

Inbox

To:Shinjini Mondal <shinjini.mondal@mail.mcgill.ca>;

Dear DR. UPENDRA BHOJANI,

The proposal with proposal id **2018-0504** entitled **UNDERSTANDING THE DYNAMICS OF INTER-SECTORAL POLICY IMPLEMENTATION: AN EXAMINATION OF POLICY NETWORKS AND PRACTICES IN TOBACCO CONTROL IN INDIA,** was considered during the HMSC meeting held on 10-09-2018 and the decision of the HMSC is as follows:

Approved . However, the Committee suggested that requisite clearance may be taken by PI from MHA, GoI for mentoring a foreign university student for the said study.

You may now take necessary action at your end to initiate the project and let us know the date of initiation of the project. You are requested to kindly ensure submission of progress report of the project to ICMR.

You are also requested to upload the duly filled in and signed DST project summary sheet and DST check list by logging into your account at http://icmrextramural.in/ICMR/ for onward transmission to DST by ICMR.
For any further queries please contact the coordinator, ICMR at 011-26589492

With Regards
ICMR Team.

This is a system generated mail.Please do not reply to it. For Any Further Correspondence please contact only at "hmscihdicmr@gmail.com / 011-26589492 ".

Appendix C: Data Collection Instruments

Key informant interview (National level actor and State level actor) to map the policy landscape: Topic guide (Objective no-1)

Interview type: In-depth interview Remind respondent that the interview will remain confidential and its results anonymised, that it is not possible to trace back comments, and explain the opt out rules.	
Elements	**Actions/Questions/Probes**
Arrival	Settling in
Introduction	Intro interview (personal introduction, explaining objectives of the study) Written informed consent procedure Ask permission to audio-record and to take notes
Equipment check	Check the audio conditions and if the tape recorder is functioning
General information	Name of respondent: Reference code: (for anonymization) Area of expertise: Date: Setting: Length of discussion:
General Part	Q: Could you describe me your role/responsibilities in tobacco control programme/policy at national/state level? Q: What is your involvement with tobacco control programme/policies, type of involvement? Q: How long have you been involved with the tobacco control programme/policy at national/state level?
Themes	Transition to key questions
History/evolution of policy/context of initiation	Q: Can you describe, me the context in which these tobacco control policy decisions/programmes were initiated? Q: What were the key factors that helped in policy formulation/implementation? What were factors that hindered policy formulation/implementation? (Probe: for example,...) Q: Which role played your organisation? (Probe: compared to others) Q: Who were, according to you, key players/leaders that helped to shape the policy? (P: If you had the name a top 3 who would be the most important ones?)
Critical points/junctions	Q: Tobacco smoking reduced with % / % in India/Karnataka state in the last decade. Can you describe, how national tobacco control programme/policies helped in reducing tobacco smoking in the last decade?

	Q: Can you describe the most critical points/events in developing/implementing these policies in the last decade?
Current status of policy	Q: Can you describe the current status of tobacco control programme/policies at the National/State level? Q: Who are the key partners/institutions/organisation at national/state level in implementation?
Success/challenges	Q: Can you describe the usefulness/impact of existing policies and guidelines for tobacco control programme/policies? Probe: At the national level? At the state level? Q: Can you share examples of success/ failure of tobacco control programme/policies at the national level/ at the state level? Why were they successful in their understanding. P: Can you share your assessment of the success/failures/gaps in tobacco control programme/policies. Q: What factors influenced the outcomes of the policy? Q: Can you describe the challenges the national/ state level programme faced? How were these addressed?
Avenues for strengthening/refinement	Q: Can you suggest ways /processes to strengthen tobacco control programme/policies at National & State levels? Q: What are, according to you, the challenges for the future?
Announce the end of interview	'A last question (…) Mention question here
After the interview	Word of thanks. Offer the possibility to withdraw after the interview. Hand over contact card. Explain how the interview will be used and how it would contribute to policy implementation (?)

In-depth interview (district level) for case study: Topic guide
(Objective no-3)

Interview type: In-depth interview Remind respondent that the interview will remain confidential and its results anonymised, that no one will be able to trace back comments, and explain the opt out rules. Share the sociogram (social network diagram) with respondent to engage in conversation	
Elements	**Actions/Questions/Probes**
Arrival	Settling in
Introduction	Intro interview (objectives of the study) Written informed consent procedure Ask permission to audio-record and to take notes
Equipment check	Check the audio conditions and if the tape recorder is functioning
General information	Name of respondent: Reference code: (for anonymization) Organisation: District: Date: Setting: Length of discussion:
Sociogram to start interview	
General part	Q: Could you please describe me your responsibilities as a part of tobacco control programme/policy? Q: How long have you been working in the district? How long in the tobacco control programme?
Themes	Transition to key questions
Status of implementation	Q: Can you tell me about the situation/status of implementation in the district regarding tobacco control programme/policy? What may be the probable reasons? How is the implementation compared to other region/district? Q: Can you tell me, which are the key organisations in the implementation process? What are their roles? Probe: NGOs involved? District health management team (local name)? Q: How do they work together/collaborate?
Transition	I briefly described the study at the beginning of the interview. I am trying to find out how to improve implementation and better governance of the programme at district level. In a first instance, I would like to look into the views of different actors on inter-sectoral implementation
Inter-sectoral policy (perceptions)	Q: Could you describe to me what working with different actors/institutions to implement a policy means to you?

	Q: In your view, what does it mean from the perspective of your organisation to implement this policy?
Relationship between organisations	Q: Can you describe me how different organisations are involved in decision-making? Q: How do you describe your relationship with other implementing organisation/actors? Q: If a department starts activities for the programme, do they usually meet with the other departmental members? Can you give me an example of what usually happens? Q: What are the formal consultation mechanisms between different organisations/actors? Probe: Are these meetings organised? Are these meetings regular? Who hosts the meeting? Who is invited? What is discussed? Q: Suppose there is a dispute or a decision made in the meeting that is not agreed by everyone. Is there a way to resolve it to reach consensus? Can you give me an example of what happens in this case? Q: Is there anything else you would like to say about your relationship with other organisations/actors?
Steering/negotiations/leadership	Q: Is there an organisation steering or leading the work? Q/P: Can you tell me how interests of different organisations are otherwise balanced? Q: How are rules/ terms of work negotiated with in the network?
Implementation success/challenges	Q: Can you describe me what you think would enable better implementation? Can you share an example? Q: What are the most common challenges that you faced? Q: How can these challenges be dealt with?
Interaction between actors/organisations	Q: Can you tell about the different strategies to achieve/seek cooperation/coordination? Q: How do you suggest coordination can be improved between different actors/organisations?
Strengthening the implementation	Q: What measures would you suggest to improve implementation? What would you change? Probe: at district, state and national level
Announce the end of interview	'A last question (...)
After the interview	Word of thanks. Offer the possibility to withdraw. Explain how the interview will be used.

DATA COLLECTION INSTRUMENT: DISTRICT LEVEL SURVEY

Explain the purpose of the survey and the rights of the respondent. Make sure to include the following points:
This survey is carried out as a part of doctoral research work by Shinjini Mondal (McGill University supported by IPH Bangalore) to understand the implementation of tobacco control policy/programme in the district. We would like to talk to you for 20 minutes to 30 minutes and would ask a few questions about yourself and the people you interact with in different aspects of implementation of the tobacco control policy/programme in the district. Your participation is completely voluntary; your answers are completely confidential; we will ask for your name and the names of other people you are in contact with but we will not reveal the names to anyone else; the names will be known only by the research team; you don't have to answer any questions you don't want to and you can stop the survey at any time. If you may wish to retract your participation after the interview, please contact, shinjini.mondal@mail.mcgill.ca
Telephone: +918860524408.

Do you understand the purpose of the survey? (Y/N)
Do you understand that your answers are confidential, that you do not have to answer any questions you do not wish to and that you can stop the interview at any point? (Y/N)
Do you agree to participate? (Y/N)

PART:1 Demographic and Socioeconomic Information

UNIQUE IDENTIFIER	
F1.1 Organisation Name	1=Department of Health
	2= District Tobacco control Cell
	3=Department of Education
	4= Department of Law & Order
	5=Urban Works Department
	6= Transport Department
	7= Non-Governmental Organisation
	8= Research Organisation
	9= Advocacy Organisation
	10= Women and child development
	11= Department of labour
	12=Exercise Department
	13= Department of Information
	14= Rural development and Panchayat raj
	15= Revenue department
	16= Social Welfare department
	17=Backward class and minorities department
	99= Other (specify.....)
F1.2 Years of total work experience	
F1.3 Position in the organisation	1=Director
	2=Deputy Director
	3=Coordinator
	4= Programme Manager
	5= Assistant Programme Manager

	6= Consultant
	7= Social worker
	8= Psychologist
	99= Other (Specify.....)
F1.4 Years in same organisation	
F1.5 Years in current position	
F1.6 Sex	0= Male
	1= Female
F1.7 Year of birth	
F1.8 Highest Academic Qualification obtained	1= Higher Secondary
	2= University or college Diploma
	3= Bachelors Degree
	4= Master's Degree
	5= PhD or higher Degree
	99= Other (Specify.....)
F1.9 Are you a full time or contractual staff?	0= Full Time
	1= Contractual
F1.10 Geographic location, District 1 or 2	0= District 1
	1= District 2
F1.11 Are you currently engaged in any aspect of implementation of Tobacco control policy/programme in your district?	0=Yes
	1= No
F1.12 How long have you been engaged in implementation of Tobacco control policy/programme in your district?	
F.1.13 Have you attended any meeting on Tobacco control policy/programme in your district?	0=Yes
	1=No
F.1.14 Have you attended any training Tobacco control policy/programme in your district?	0=Yes
	1=No

PART 2: SOCIAL NETWORK QUESTIONS

I will ask you to identify all the individuals from the list, whom you interact with while implementing any aspect of Tobacco control policy/programme at the district level. By "interacted," I mean individuals who you worked with or communicated or received information or assistance in any other form while implementing the programme. These names will help me to build a map of the network of people. If I have not already contacted them, I will add them to my list of people to interview and survey. I will not tell them who identified them, and it is possible that another respondent has already identified them. In the final analysis, maps will not be linked to individual names, but I will describe groupings according to their relevant characteristics (for example, organizations). It is up to you whether you do or do not want to name an individual contact. Do you have any questions?

A. List of individual from different organisation involved in implementation of Tobacco Control Policy/Programme at district level.

Designation	Please put a ( ) Mark
Health	
1. District Health and Family Welfare Officer	
2. District Surgeon	
3. District Tobacco Nodal officer	
4. State Tobacco Consultant	
5. Divisional Tobacco Consultant	
6. State Tobacco Nodal Officer	
7. Taluk health officers	
8. Administrative Medical Officers- PHC	
9. Medical Officers PHU	
10. Sr. and Junior Male Health Assistants	
11. Sr. and Junior female Health Assistants	
12. Block health Education Officers	
Education Department	
13. Deputy Director Public Instruction	
14. Deputy Director PU	
15. Programme Officer	
16. Principals of colleges	
17. Block education officer	
18. High school teachers and head masters	
19. Primary school teachers and head masters	
20. Principal PU College and teachers	
21. Dean Medical College	
Urban Development	
22. Project Director	
23. Municipal Commissioner	
24. Municipal Chief officer	
25. Health Inspector	
26. Environmental Engineers	
Transport Department	
27. Divisional Manager	
28. Public Relation	
29. Welfare Officer	
Women and Child Development Department	
30. Deputy Director- WCD	
31. Child Development Project Officer	
Information Department	
32. Deputy Director -Information	
33. District Information and Technology officers	
34. District broadcasting and information officers	
Department of labour	
35. Deputy Director	
36. District Child Labour Officer	
Rural development and panchayat raj	

37. CEO	
38. Deputy Secretary	
39. Gram panchayat secretaries	
40. Panchayat Development Officers	
41. Executive officers	
Revenue Department	
42. DC	
43. ADC	
44. Tasildar	
45. Deputy Tasildar	
Social Welfare department	
46. Deputy Director	
47. Hostel warden officers	
48. Block extension officer	
49. Taluka development officer	
Home Department	
50. Deputy Superintendent of Police	
51. Commissioner of Police	
52. District Prison Officers	
53. Superintendent of police.	
54. Circle Inspector	
55. Sub inspector	
56. Constable Police	
Finance department	
57. District sub treasury officers	
58. Taluka treasury officers	
Law department	
59. District Legal cell	
60. Taluka law advisory board officers	
Media	
61. Local Media	
Non Govt Organizations	
62. SKDRDP	
63. Tax and exercise Department	
Chemicals and fertilizers	
64. Assistant Drug Controller	
Others	
65. Hotel Owners Association	
66. Auto owners Association	
67. Wine merchant Association	
68. Private bus owner's association	
69.	
70.	

B. (*Interaction)*For each identified individual as 'Yes' for interaction, please fill the next section
Can you please provide me the following information for each identified individual from the above mentioned list

	Name 1 Position Serial no.	Name 2 Position Serial no.	Name 3 Position Serial no.	Name 4 Position Serial no.
F2.1 How long have you known____	___Yrs ___months	___Yrs ___months	___Yrs ___months	___Yrs ___months
F2.2 How do you know______ (check all that apply)	1. Classmates 2.Friends 3.Collegues (where) 4.Relative (social conn) 5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other	1. Classmates 2.Friends 3.Collegues (where) 4.Relative (social conn) 5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other	1. Classmates 2.Friends 3.Collegues (where) 4.Relative (social conn) 5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other	1. Classmates 2.Friends 3.Collegues (where) 4.Relative (social conn) 5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other
F2.3 Who initiated the relationship /communication	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial
F2.4 What is the reason for engagement?	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme

	4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person 7. Media outreach /engagement 8.Assistance /participation in conducting DLCC Meeting, 99. Others............	4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person 7. Media outreach /engagement 8.Assistance /participation in conducting DLCC Meeting, 99. Others............	4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person 7. Media outreach /engagement 8.Assistance /participation in conducting DLCC Meeting, 99. Others............	4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person 7. Media outreach /engagement /Assistance /participation in conducting DLCC Meeting, 99. Others............
F2.5 What is the primary method of communication?	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............
F2.6 How often has............ approached you for advice on tobacco policy implementation	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent

	Name 1 Position Serial no.	Name 2 Position Serial no.	Name 3 Position Serial no.	Name 4 Position Serial no.
F2.1 How long have you known____	___Yrs ___months	___Yrs ___months	___Yrs ___months	___Yrs ___months
F2.2 How do you know______ (check all that apply)	1. Classmates 2.Friends 3.Collegues (where) 4.Relative (social conn)	1. Classmates 2.Friends 3.Collegues (where) 4.Relative (social conn)	1. Classmates 2.Friends 3.Collegues (where)	1. Classmates 2.Friends 3.Collegues (where)

	5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other	5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other	4.Relative (social conn) 5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other	4.Relative (social conn) 5. Introduced by someone (who) 6. Met at a professional event 7. Work part of joint/advisory/ other committee meeting 8. Prior colleague 9. Reputation 10. Position 11. professional network 99. Other
F2.3 Who initiated the relationship /communication	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary 4.Circumstantial
F2.4 What is the reason for engagement?	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme 4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person 7. Media outreach /engagement 8.Assistance	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme 4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person 7. Media outreach /engagement 8.Assistance	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme 4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person 7. Media outreach /engagement 8.Assistance	1. Assistance in implementation of school programme/IEC activities/ sensitization programme. 2. Assistance in organising/ conducting enforcement drives 3.Assistance in conducting/ organising training programme 4. Administrative support to the programme 5.Approval/ permission for conducting implementation, e,g drives, training. 6. Connects to another resourceful person

	/participation in conducting DLCC Meeting, 99. Others.....	/participation in conducting DLCC Meeting, 99. Others.....	/participation in conducting DLCC Meeting, 99. Others.....	7. Media outreach /engagement /Assistance /participation in conducting DLCC Meeting, 99. Others.....
F2.5 What is the primary method of communication?	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....
F2.6 How often has..... approached you for advice on tobacco policy implementation	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent

C. (*Information/assistance/clarification)* Now, I would like to know about the colleagues from the list that whom you have approached to seek information/assistance/clarification as a part of implementation of tobacco control policy/programme in the district.

	1 Position Serial no:	2 Position Serial no:	3 Position Serial no:	4 Position Serial no:
F3.1 Indicate the hierarchical level of person with whom you approach for information/assistance/clarification	1.Higher 2. Same 3. lower	1.Higher 2. Same 3. lower	1.Higher 2. Same 3. lower	1.Higher 2. Same 3. lower
F3.1 Who initiated the relationship/communication	1. Self 2.Mutual outreach 3. Intermediary (who) 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary (who) 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary (who) 4.Circumstantial	1. Self 2.Mutual outreach 3. Intermediary (who) 4.Circumstantial
F3.3 What is the reason for engagement?	1. Assist in organising implementation-enforcement drives 2. Assist in organising implementation	1. Assist in organising implementation-enforcement drives 2. Assist in organising implementation	1. Assist in organising implementation-enforcement drives 2. Assist in organising implementation	1. Assist in organising implementation-enforcement drives 2. Assist in organising implementation

	school programmes/IEC activities/sensitization 3. Issuing of issuing circular 4. Helps in assigning officers 5. Provides clarification/guidance on policy/guidelines/implementation 6. Connects to another resourceful person 7. Media outreach /engagement 8. Organising /participate meetings like DLCC 99. Others............	school programmes/IEC activities/sensitization 3. Issuing of issuing circular 4. Helps in assigning officers 5. Provides clarification/guidance on policy/guidelines/implementation 6. Connects to another resourceful person 7. Media outreach /engagement 8. Organising/participate meetings like DLCC 99. Others............	school programmes/IEC activities/sensitization 3. Issuing of issuing circular 4. Helps in assigning officers 5. Provides clarification/guidance on policy/guidelines/implementation 6. Connects to another resourceful person 7. Media outreach /engagement 8. Organising/participate meetings like DLCC 99. Others............	school programmes/IEC activities/sensitization 3. Issuing of issuing circular 4. Helps in assigning officers 5. Provides clarification/guidance on policy/guidelines/implementation 6. Connects to another resourceful person 7. Media outreach /engagement 8. Organising/participate meetings like DLCC 99. Others............
F3.4 What is the primary method of communication?	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.............
F3.5 How often has............approached you for advice on tobacco policy implementation	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent

D. *(Decision making)* Now, I would like to know about the colleagues from the list that whom you have approached for decision making, like engagement with enforcement drives, DLCC Meeting, section 4 – section6 implementation etc

	1. Position Serial no:	2 Position Serial no:	3 Position Serial no:	4 Position Serial no:

F3.1 Indicate the hierarchical level of person for decision making	1.Higher 2. Same 3. lower	1.Higher 2. Same 3. lower	1.Higher 2. Same 3. lower	1.Higher 2. Same 3. lower
F4.2 What is the reason for seeking decision?	1. Provides programmatic or financial approval Implementation. E,g Incudes training, Drives, school activities 2. Chairs meetings and sign approval 3. Signs proceeding Or other files 4.Provides technical inputs 5. Decision in planning /scheduling activities 6.Displaying signages 99. Others.....	1. Provides programmatic or financial approval Implementation. E,g Incudes training, Drives, school activities 2. Chairs meetings and sign approval 3. Signs proceeding Or other files 4.Provides technical inputs 5. Decision in planning /scheduling activities 6.Displaying signages 99. Others.....	1. Provides programmatic or financial approval Implementation. E,g Incudes training, Drives, school activities 2. Chairs meetings and sign approval 3. Signs proceeding Or other files 4.Provides technical inputs 5. Decision in planning /scheduling activities 6.Displaying signages 99. Others.....	1. Provides programmatic or financial approval Implementation. E,g Incudes training, Drives, school activities 2. Chairs meetings and sign approval 3. Signs proceeding Or other files 4.Provides technical inputs 5. Decision in planning /scheduling activities 6.Displaying signages 99. Others.....
F4.3.4 What is the primary method of communication?	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....	1.Email 2.Telephone 3.SMS/Text 4.Official letter 5.Face to Face meetings 6. Group meetings 99. Other.....
F4.5 How often has..... approached you for advice on tobacco policy implementation	1. 1-2 times a week 2. 1-2 times amonth 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6.Event/project/task dependent	1. 1-2 times aweek 2. 1-2 times amonth 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent	1. 1-2 times a week 2. 1-2 times a month 3. 3-5 times a year 4. 1-2 times a year 5. Annually 6. Event/project/task dependent

Observation Guide

Observation guide: Joint meetings/reviews Introduce yourself, affiliation and purpose of the study Remind respondent that the interview will remain confidential and its results anonymised, that no one will be able to trace back comments, and explain the opt out arrangements (include telephone no, contact email, address)	
Elements	**Components to observe**
Arrival	Settling in
Introduction	Intro (objectives of the study) Ask permission to take notes
General information	Number of respondent: Venue: Reference code: (for anonymization): Date: Setting: Length of discussion:
General Part	Who has organised the meeting Who has prepared the agenda What are the agenda points Which departments have been invited for the meeting
Chairing/steering/leadership	Who chairs the meeting Who participates in discussion during the meeting Members involved in convening the meeting Who steers the meeting Who is absent Do actors refer to absentees in discussion
Content of the meeting	What are the different discussion points? Summary of discussion
Dynamics between actors	What are the relationship dynamics between actors Who agree or disagree with each other and on what points Which actors are more dynamic and participative? Who are the key decision maker in the meeting? Who is taking the lead Who disagrees Alliances between different actors, sector actors Do actors refer to outside actors
Consensus building or difference resolution mechanism	How do people indicate support or disagreement? What are the mechanisms for consensus building in the group? How much is the process participatory? Which actors/groups participate in the process? How disagreement is resolved within the group How are final conclusions made and proceedings decided? Signs of hidden conflicts, power struggles? (eg verbal or visual: signs of disagreement with what other actor says)
After the observation	Word of thanks. Offer the possibility to withdraw. Explain how the interview will be used.