Université de Montréal

Knowledge Translation in Public Health

A Case Study in Manguinhos, Brazil

Par

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Résumé

Le transfert de connaissances (TC) est un processus de collaboration entre les producteurs de connaissances (principalement des chercheurs) et les utilisateurs des connaissances (communautés, intervenants et décideurs) impliquant de nombreux éléments comme la synthèse, la diffusion et le partage. Cette thèse a pour objectifs de comprendre le TC dans différents projets de recherche et pratiques de gestion et de proposer une feuille de route de TC adapté au contexte brésilien. Plus spécifiquement, elle visait à : i) décrire trois projets comme exemples de trois modalités différentes de TC, ii) effectuer une analyse rétrospective des actions et stratégies de TC mises en œuvre par trois projets du réseau PDTSP-*Teias* couvrant la période de 2009 à 2013, et iii) vérifier comment la participation au réseau PDTSP-*Teias* a facilité le TC entre les producteurs et les utilisateurs de connaissances. À cette fin, cette thèse examine les pratiques de TC entre la recherche en promotion de la santé et la pratique de la santé dans le Programme de développement et d'innovation technologique en santé publique / *Programa de Desenvolvimento e Inovação Tecnológica em Saúde Pública* (réseau PDTSP-*Teias*). Un plan de TC existant de l'Institut national de santé publique du Québec (INSPQ) a été utilisé comme cadre théorique pour orienter l'approche déductive-inductive utilisée pour générer et analyser les données provenant des documents, d'entrevues et de groupe de discussion.

Méthodes : Cette thèse a utilisé une étude de cas multiple rétrospective qualitative avec trois cas imbriqués dans le réseau PDTSP-*Teias*. L'accent était mis sur des questions suivantes : i) quelles approches de TC le réseau PDTSP-*Teias* a-t-il adoptées, ii) quelles actions et stratégies de TC les trois projets du réseau PDTSP-*Teias* ont-ils mis en œuvre, et iii) comment la participation au réseau PDTSP-*Teias* a-t-elle facilité le TC entre les utilisateurs et les producteurs de connaissances. Les données empiriques comprenaient l'analyse de documents (rapports, ouvrages et articles scientifiques), des entretiens semi-structurés avec des producteurs de connaissances (N = 9) et un groupe de discussion avec des utilisateurs des connaissances (N = 4 participants). Les entretiens portaient sur le développement des projets, l'élaboration de produits de TC et l'interaction entre les producteurs et les utilisateurs de connaissances.

Résultats : En ce qui concerne le premier objectif, nous avons pu distinguer différentes expertises, approches et pratiques de TC des groupes de recherche. De cette première analyse, des exemples de trois pratiques différentes de TC ont été identifiés comme étant Majoritaire, Modéré et Peu ou Pas du tout. Ces exemples ont ensuite été analysés à l'aide des huit dimensions proposées par le cadre théorique utilisé. Le deuxième objectif a constaté que six des huit dimensions analysées semblaient être mieux intégrées dans les projets : D1 Analyse du contexte et besoins des utilisateurs, D2 Connaissances à traduire, D3 Connaissances sur les utilisateurs des connaissances, D4 Partenaires de TC, D5 Stratégies de TC et D6 Approche globale de TC. Cependant, deux dimensions étaient moins bien intégrées : D7 L'évaluation de TC et D8 Les ressources. Le troisième objectif nous a permis de constater que le manque d'évaluation des projets de TC, les questions liées aux ressources financières des projets de TC, le manque de soutien organisationnel et politique pour les projets de TC, et le manque d'outils conceptuels de TC pour la mise en œuvre des projets sont des obstacles au TC au Brésil. Toutefois, la participation au réseau PDTSP-*Teias* semble avoir favorisé les pratiques de TC. Ces résultats ont fourni une description et une analyse approfondie de la complexité des pratiques de TC contribuant ainsi à une meilleure compréhension des pratiques de TC au Brésil.

Conclusion : Compte tenu de la manière dont les cas ont été caractérisés, on peut conclure que les pratiques de TC peuvent être très différentes même dans un contexte et des conditions de recherche similaires. Ces pratiques TC contrastées peuvent être dues à l'absence d'un outil conceptuel de TC approprié. Un tel outil peut combler le vide dans les approches et stratégies de TC du Brésil. Ainsi, l'adaptation du plan de TC du INSPQ peut permettre l'évolution du dialogue entre les producteurs et les utilisateurs de connaissances dans les projets de recherche, comprendre le contexte, et contribuer à la validation et à l'adoption des produits de TC. Ces changements profiteraient au changement des connaissances, des attitudes et des comportements des différents groupes impliqués. Enfin, cette thèse propose une adaptation fondamentale du plan de TC du INSPQ au contexte brésilien.

Mots-clés : Transfert des connaissances, application des connaissances, feuille de route de transfert des connaissances, plan de transfert des connaissances, promotion de la santé, étude de cas, analyse du cadre, recherche qualitative, santé publique, Brésil.

Abstract

Knowledge translation (KT) is a collaborative process between knowledge producers (mostly researchers) and knowledge users (communities and decision-makers) involving many elements like synthesis, dissemination, and sharing. This thesis' main objectives are to understand KT in different research projects and management practices and propose a KT roadmap adapted to the Brazilian context. The three specific objectives pursued were to: i) describe three projects as examples of three different modalities of KT, ii) perform a *post hoc* analysis of the KT actions and strategies implemented by three projects of the PDTSP-*Teias* network in the period from 2009 to 2013, and iii) verify how participation in the PDTSP-*Teias* network facilitated KT between knowledge producers and knowledge users. To this end, this thesis examines KT practices between health promotion research and health practice in the Program for Technological Development and Innovation in Public Health/*Programa de Desenvolvimento e Inovação Tecnológica em Saúde Pública* (PDTSP-*Teias* network). An existing KT plan from the Quebec Public Health Institute (*Institut national de santé publique du Québec* - INSPQ) was employed as a theoretical framework to orient the deductive-inductive approach used to generate and analyze documents, interviews, and focus group materials.

Methods: This thesis used a retrospective qualitative multiple case study with three cases nested in the PDTSP-*Teias* network. The focus was on relevant questions concerning KT in health promotion in Brazil, such as i) what KT approaches did the PDTSP-*Teias* network adopt, ii) what KT actions and strategies did the three projects of the PDTSP-*Teias* network implement, and iii) how did participation in the PDTSP-*Teias* network facilitate KT between knowledge users and knowledge producers. The empirical data included document analysis (reports, books, and scientific papers), semi-structured interviews with knowledge producers (N=9), and one focus group with knowledge users (N=4 participants). The interview guide addressed three sets of questions: project development, KT product elaboration, and interaction between knowledge producers and knowledge users.

Results: Regarding the first objective, we were able to distinguish different KT expertise, approaches, and practices of the research groups. From this initial analysis, examples of three

different KT practices were identified as Predominantly, Moderately, and Hardly or Not at all. These examples were then analyzed using the eight dimensions proposed by the theoretical framework. The second objective found that six of the eight dimensions analyzed seemed to be better integrated in the projects: D1 Analysis of the Context and Users' Needs, D2 Knowledge to be Translated, D3 Knowledge about the Knowledge Users, D4 KT Partners, D5 KT Strategies, and D6 Overall KT Approach. However, two dimensions were less well-integrated: D7 KT Evaluation and D8 Resources. The third objective allowed us to see that the lack of KT project evaluation, issues related to KT projects financial resources, lack of organizational and political support addressed to KT projects, and lack of conceptual KT tools to implement KT projects are barriers to KT in Brazil. Nevertheless, albeit with some limits, participation in the PDTSP-*Teias* network seems to have facilitated KT practices. These results provided a description and an in-depth analysis of the complexity of KT practices in areas of high social vulnerability and contributed to a better understanding of KT practices in Brazil.

Conclusion: Considering how the cases were characterized, it can be concluded that KT practices can be quite different even in a similar context and research conditions. These contrasting KT practices may be due to the absence of a suitable conceptual KT tool. Such a tool can fill the gap in Brazil's KT approaches and strategies. Thus, the adaptation of the INSPQ KT plan can allow the evolution of the dialogue between knowledge producers and knowledge users in research projects, understand the context, and contribute to the validation and adoption of KT products. These changes would benefit the change in knowledge, attitudes, and behavior of the different groups involved. Lastly, this thesis offers a seminal adaptation of the INSPQ KT plan to the Brazilian context.

Keywords: Knowledge Translation, Knowledge Transfer, Knowledge Translation Roadmap, Knowledge Translation Plan, Health Promotion, Case Study, Framework Analysis, Qualitative Research, Public Health, Brazil.

Resumo

Translação do conhecimento (TC) é um processo colaborativo entre produtores de conhecimento (principalmente pesquisadores) e usuários do conhecimento (comunidades, trabalhadores da saúde e gestores) envolvendo muitos elementos como síntese, disseminação e compartilhamento. Os principais objetivos desta tese são compreender a TC em diferentes projetos de pesquisa e práticas de gestão e propor um roteiro/*roadmap* de TC adaptado ao contexto brasileiro. Os três objetivos específicos foram: i) descrever três projetos como exemplos de três modalidades diferentes de TC, ii) realizar uma análise retrospectiva das ações e estratégias de TC implementadas por três projetos da rede PDTSP-Teias no período de 2009 a 2013, e iii) verificar como a participação na rede PDTSP-Teias facilitou o TC entre produtores e usuários do conhecimento. Para tanto, esta tese examinou as práticas de TC entre a pesquisa em promoção da saúde e a prática em saúde no Programa de Desenvolvimento Tecnológico e Inovação em Saúde Pública (rede PDTSP-Teias). O plano TC do Instituto de Saúde Pública de Quebec (*Institut National de Santé Publique du Québec* - INSPQ) foi empregado como quadro teórico para orientar a abordagem dedutiva-indutiva usada para gerar e analisar documentos, entrevistas e o grupo focal.

Métodos: Esta tese utilizou um estudo de caso múltiplo qualitativo retrospectivo com três casos imbricados na rede PDTSP-Teias. As questões do estudo referiram-se a i) quais abordagens de TC a rede PDTSP-Teias adotou, ii) quais ações e estratégias de TC os três projetos da rede PDTSP-Teias implementaram e iii) como a participação na rede PDTSP-Teias facilitou a TC entre usuários e produtores de conhecimento. Os dados empíricos incluíram análise de documentos (relatórios, livros e artigos científicos), entrevistas semiestruturadas com produtores de conhecimento (N = 9) e um grupo focal com usuários do conhecimento (4 participantes). O guia de entrevista abordou três conjuntos de questões: desenvolvimento do projeto, elaboração do produto de TC e interação entre produtores e usuários do conhecimento.

Resultados: Em relação ao primeiro objetivo, a descrição dos três casos permitiu observar as diferentes expertises, as abordagens e as práticas de TC dos grupos de pesquisa. A partir dessa análise inicial, exemplos de três práticas diferentes de TC foram identificados como

Predominante, Moderado e Pouco ou Nada. Estas práticas foram posteriormente analisadas a partir do quadro teórico utilizado no estudo, em suas oitos dimensões. O segundo objetivo, constatou que seis das oito dimensões analisadas pareciam estar mais integradas nos projetos: D1 Análise do contexto e necessidades dos usuários, D2 Conhecimento a ser traduzido, D3 Conhecimento sobre os usuários do conhecimento, D4 Parceiros de TC, D5 Estratégias de TC e D6 Abordagem general de TC. No entanto, duas dimensões foram menos integradas: D7 Avaliação de TC e D8 Recursos. O terceiro objetivo, permitiu contatar que a falta de avaliação dos projetos de TC, questões relacionadas aos recursos financeiros dos projetos de TC, a falta de apoio organizacional e político aos projetos de TC, e a falta de ferramentas conceituais de TC para implementação de práticas de TC são barreiras para a implementação de TC no Brasil. No entanto, a participação na rede PDTSP-Teias fomentou as práticas de TC, embora com alguns limites. Esses achados forneceram uma descrição e uma análise aprofundada da complexidade das práticas de TC em áreas com vulnerabilidade social substancial e contribuíram para um melhor entendimento das práticas de TC no Brasil.

Conclusão: Considerando como os casos foram caracterizados, pode-se concluir que as práticas de TC podem ser diferentes mesmo em um contexto e condições de pesquisa semelhantes. Estas práticas contrastantes podem ser devido à ausência de uma ferramenta conceitual adequada de TC. Essa ferramenta pode preencher a lacuna nas abordagens e estratégias de TC do Brasil. Assim, a adaptação do plano de TC do INSPQ pode permitir a evolução do diálogo entre produtores do conhecimento e usuários do conhecimento em projetos de pesquisa a compreender o contexto e contribuir para a validação e adoção de produtos de TC. Essas mudanças beneficiariam a mudança de conhecimento, atitudes e comportamento dos diferentes grupos envolvidos. Por fim, esta tese oferece uma adaptação seminal do plano de TC do INSPQ para o contexto brasileiro.

Palavras-chave: Translação do Conhecimento, Tradução do Conhecimento, Rodmap de Translação do Conhecimento, Plano de Translação do Conhecimento, Promoção da Saúde, Estudo de Caso, Análise Estrutural, Pesquisa Qualitativa, Saúde Pública, Brasil.

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List of Acronyms and Abbreviations

CAPES: Coordination for the Improvement of Higher Education Personnel/*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior*

CGI: Intersectoral Management Council of the *Teias*-School Manguinhos/*Conselho de Gestão Intersetorial*

Chaire CACIS: Canada Research Chair Community - Approaches and Health Inequalities/*Chaire de recherche du Canada - Approches communautaires et inégalités de santé*

CIHR: Canadian Institutes of Health Research

CNPq: National Council for Scientific and Technological Development/*Conselho Nacional de Desenvolvimento Científico e Tecnológico*

ÉQUIPE RENARD: RENARD Research Team/*L'équipe de recherche en partenariat RENARD*

FIOCRUZ: Oswaldo Cruz Foundation*/Fundação Oswaldo Cruz*

INSPQ: Quebec Public Health Institute/*Institut national de santé publique du Québec*

KT: Knowledge Translation

LTM: Manguinhos Territorial Laboratory/*Laboratório Territorial de Manguinhos*

PDTSP: Program of Development and Technological Innovation in Public Health/*Programa de Desenvolvimento e Inovação Tecnológica em Saúde Pública*

PMA: Program of Public Policies and Models of Health Care and Management/*Programa de Políticas Públicas e Modelos de Atenção e Gestão à Saúde*

SUS: Unified Health System/*Sistema Único de Saúde*

TC: *Tranfert des connaissances/Translação do Conhecimento*

UPP: Pacifying Police Unit/*Unidade de Polícia Pacificadora*

In loving memory of mom and dad

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"Feliz aquele que transfere o que sabe e aprende o que ensina."

"Happy is who transfers what knows and learns what teaches."

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Introduction

Knowledge Translation Practices and Strategies between Research and Practice

This thesis will look at knowledge translation (KT) practices between health promotion research and health practice in Brazil. It recognizes that the KT process is not well established in research institutions and universities in Brazil, even though building capacity for KT was one of the required actions for health promotion in the Bangkok Charter (WHO, 2005). The focus is on three relevant questions concerning health promotion in Brazil. First, how do KT practices favor health promotion? Second, what are the conceptual KT tools (KT theories, models, frameworks, plans, and roadmaps) adapted to the Brazilian context? And third, what is the theoretical and methodologic understanding of KT know-how in Brazil?

Knowledge Translation Practice in Health Promotion in Brazil

Knowledge translation is described as a complex and multidimensional process of putting knowledge into action (CIHR, 2016b; Lemire et al., 2009; Prihodova et al., 2019; Sudsawad, 2007). This process consists of the following steps: synthesis, dissemination, communication, and education, as well as exchange, application and evaluation of knowledge aimed at improving the health of populations (CIHR, 2005; Graham et al., 2007). This demands a complete understanding of mechanisms, methods, and influencing factors at the individual and contextual levels (Sudsawad, 2007).

In high-income countries, KT terminology is increasingly used in healthcare practices. It represents the "process of moving what we learned through research to the actual applications of such knowledge in a variety of practice settings and circumstances" (Sudsawad, 2007, p. 399). Thus, this terminology seems to overlap with the literature about the evidence-based practice (EBP) approach. EBP aims to maximize health interventions through principles learned by research-based findings, clinical expertise, and knowledge from users/clients (CPA Task Force on Evidence-Based Practice of Psychological Treatments, 2012).

In Brazil, there is a substantial gap between knowledge produced by academia and research institutions, and knowledge used in practice (Dias et al., 2015; Straus et al., 2009). The lack of transition from knowledge-produced to knowledge in practice can be seen in all groups, from decision-makers to service users (Straus et al., 2009). Despite strong endorsement for evidence-based practice and KT, the use of research for practice is still lacking (Gagliardi et al., 2008; McAteer et al., 2018).

In this sense, one objective of health promotion research is to incorporate research evidence into health practice to improve health outcomes (Barac et al., 2014). In this field of action, which "enables people to increase control over, and to improve, their health" (WHO, 2016, p. 1), health promotion researchers and practitioners advocate for better KT practices, thus improving its action feature. KT can also improve health systems, increasing the likelihood that scientific evidence will be used in policy and practical decisions, thus enabling health promotion researchers to further contribute to these questions (Miranda et al., 2020a). In Brazil, health promotion researchers are trying to use robust research evidence to improve the health care system (WHO, 2008). Nonetheless, the application of good evidence in health promotion in Brazil is not easy. Health promotion researchers usually know a great deal about a specific issue and the context they are working with (Miranda et al., 2020a). Even so, significant gaps remain to speeding up KT practices such as conceptual KT tools adapted to the Brazilian context, and an insufficient theoretical and methodologic understanding about know-how to effect change.

As mentioned, KT is a well-established practice in high-income countries such as Canada, Australia, the United States, and the United Kingdom. Conversely, KT practices are less well-established in Brazil (Miranda et al., 2020a), a country with extremes in income and health inequalities (Landmann-Szwarcwald & Macinko, 2016). The gap in KT practices can increase the colonization of knowledge, and accentuate the dominance of high-income countries in knowledge production over low-income countries (Leda Kamenopoulou, 2020; Lida Kamenopoulou, 2020; Keikelame & Swartz, 2019). According to Manuel Tavares (2009), "the world is a complex multicultural mosaic" (Tavares, 2009, p. 183); however, the depreciation of local and low- and middle-income countries knowledge can lead to scientific knowledge being planned on the basis of a "single epistemological model" (Tavares, 2009). Because of this epistemological injustice, I

was interested in trying to understand how KT practices were implemented in Brazil. I recognized that Brazil's KT practices are in their early stages, which shows the need to understand Brazil's experiences and alternative social and political practices.

Besides, the lack of knowledge about KT practices in Brazil can increase health inequalities within the country and contribute to the waste of health research resources(Chalmers & Glasziou, 2009; Salvo, 2019). Chalmers and Glasziu (2009) showed that, globally, approximately 85% of all investments in health research are lost, generating waste of around 200 billion dollars a year (Chalmers & Glasziou, 2009). This waste of resources may be related to the lack of an adequate conceptual tool to guide KT practices. Financial resource management is crucial to a country with substantial social vulnerability related to health conditions. Closing this KT gap will help the Brazilian health system to improve the way knowledge producers will work closely to meet knowledge user needs. In these complex contexts, "uncertainty and unpredictability" play a significant role, and the ability to adapt and change quickly is something that knowledge users are required to do daily (Jordan, 2015, p. 1). What is more, when it comes to more practical change that relies on a change to systems and processes, the challenges are higher (Jordan, 2015). If scientific knowledge emerges in a receptive socio-political context, it can trigger changes in public health policies (Lowery et al., 2021). Thus, translating scientific knowledge into ways to meet knowledge users' needs should be a policy priority in all health systems (Morris et al., 2011). In low- and middle-income countries this is even more important. Consequently, knowledge translation can play an important role in closing the health inequalities gap in Brazil. Conceptual Knowledge Translation Tools Adapted to the Brazilian Context

Another critical point of consideration is the lack of conceptual knowledge translation (KT) tools (KT theories, models, frameworks, plans, and roadmaps) adapted to the Brazilian context. For example, the conceptual Knowledge-to-Action model developed by Graham and collaborators (Graham et al., 2006a) was discussed by research teams in Brazil. However, this model was not adapted or tested in the Brazilian context (Oelke et al., 2015). As conceptual KT tools guide the process of translating research into practice (Graham et al., 2006a), the implementation of KT in Brazil is "both a necessity and a challenge" (Oelke et al., 2015, p. 116). Authors interested in the

KT practice in Brazil listed some barriers to disseminating and using research results in the Brazilian context, such as:

i. the lack of knowledge and familiarity with the translation of knowledge in general,

ii. difficulties in identifying and clearly outlining a problem,

iii. the little participation of the main interested parties leading to the lack of partnership between knowledge producers and knowledge users in the research process, and

iv. the lack of funding to implement a KT plan (Oelke et al., 2015, p. 116).

In this sense, to Oelke and colleagues (2015), future research is needed to adapt conceptual KT tools to the Brazilian context and to analyze innovative approaches to KT to improve the use of research results in health promotion in Brazil (Oelke et al., 2015).

There is an extensive literature that has been produced in high-income countries about conceptual KT tools (Graham et al., 2006a; Lemire et al., 2009; Strifler et al., 2018; Tchameni Ngamo et al., 2016). Recently, a scoping review found 596 studies reporting on the use of 159 KT models, frameworks, or theories. These conceptual tools were mostly used to inform planning, implementation, and evaluation activities, and less to inform dissemination and sustainability activities (Strifler et al., 2018). Even though conceptual KT tools can help understand contextual factors that could play essential roles in the success or failure of KT practices (Sudsawad, 2007), until now, conceptual KT tools are not a reality in health promotion research in Brazil.

Worldwide, there are several conceptual KT tools for translating evidence into policies and practices (Esmail et al., 2020). However, most of these tools are developed and adapted to high-income countries' contexts. Some of them are considered “linear or cyclical and very few come close to reflecting the dense and intricate relationships, systems, and politics of organizations and the processes required to enact sustainable improvements” (Kitson et al., 2017, p. 231), particularly in Brazil. Using a conceptual KT tool will strengthen local health organisations to better support the implementation of evidence-based tools and guidelines in Brazil (Zhao et al., 2020). Therefore, a conceptual KT tool may help health promotion knowledge producers and knowledge users in Brazil to improve the quality of health by integrating KT concepts in the

research process (Chen et al., 2017). Given that, health promotion in Brazil will be based on relevant, reliable, and frequent research evidence (Landmann-Szwarcwald & Macinko, 2016). However, knowledge producers, including health promoters, cannot assume that effective research evidence naturally flows from knowledge producers to knowledge users in frontline practice (Breckon & Dodson, 2016; Glasgow et al., 2003). Having the skill or intention to use evidence cannot be regarded as a reliable indicator of change in practice (Breckon & Dodson, 2016; Langer et al., 2016). For example, a recent study emphasised that inadequate planning can be a barrier to health promotion research and programs (Sibbald et al., 2021). It is important to use a "theoretically grounded plan" for program management; however, using conceptual tools only in the early stages of the intervention "is insufficient even when an intervention is based on evidence to support higher quality care" (Sibbald et al., 2021, p. 2).

To the World Health Organization, there are three key elements of health promotion: i) good governance for health, ii) health literacy, and iii) healthy cities (WHO, 2021). All three elements require acquired knowledge and good quality information to foster better decisions. With knowledge users' support – particularly decision makers' support – a conceptual KT tool will certainly foster the implementation of better-adapted health promotion interventions in Brazil, contributing to the operationalization of the three key elements of health promotion. By sharing easily accessible and useful research results, plus political will, knowledge producers in Brazil will support knowledge users to make informed decisions about their own health (Chalmers & Glasziou, 2009). Also, an adequate conceptual KT tool will help knowledge users in Brazil to understand all available health alternatives and their respective benefits and risks (CanChild, 2021). Consequently, health promotion interventions can be positively affected, enabling people to increase control over their own health and favoring the reduction of health inequalities.

To reduce the KT conceptual gap in Brazil, health promoters need a conceptual KT tool suitable to Brazil's reality. This conceptual KT tool will allow knowledge producers and knowledge users in Brazil to have substantially more support to effectively implement health promotion recommendations in local and minority settings facing health inequalities (Glasgow et al., 2003).

Theoretical and Methodologic Understanding about Knowledge Translation Know-How in Brazil

As mentioned before, the interface between health practice and academia is not yet common practice in Brazil. This is not only due to the Brazil's cultural heritage, but also to structural problems in research institutions and health service centers, such as:

i. insufficient training of most people who work in the health service system,

ii. lack of career management in the health system that allows continuity of the work developed by health workers,

iii. little participation of the health service system in the design of the research project and its application - a culture that has not been developed in the academia nor in the health service in Brazil, and

iv. overall access to the health service system and institutions (Santos et al., 2016).

Therefore, the most crucial aspect of an effective KT practice is knowing how to translate knowledge into action. Theoretical and practical contributions are required to address this gap, especially how and when producers' findings should be translated into users' needs (Ellen et al., 2014b). The participatory or collaborative way of co-constructing knowledge among research partners can fulfill this gap and build interfaces between research teams, universities, policy-makers, and communities (Clavier et al., 2012). Nonetheless, the adaptation of the research cycle to fit real-world timelines, establishing relationships with decision-makers, and justifying activities that fit poorly with traditional academic performance expectations are some of the challenges to knowledge producers involved in the KT process (Mitton et al., 2007). This challenge can be related to the lack of skills required to appraise evidence, especially since this approach has been absent from most educational curricula (Rubin, 2014; Straus et al., 2009).

The lack of KT know-how has only been recently acknowledged in Brazilian research literature. Few studies have evaluated the mechanisms involved in the "uses and influences" of knowledge produced by health research (Couto & Figueiro, 2019, p. 102), the occurrence and conditions of knowledge production in graduate studies (Cruz et al., 2016), and the analysis of KT occurrence

in health surveillance (Bezerra et al., 2019). Although a good start, these studies provide evidence of how little we know about the day-to-day KT practices in Brazil. Within the context of KT practices in Brazil, this thesis is particularly interested in understanding how this process facilitates KT between knowledge producers and knowledge users. To that end, we analyzed the KT practices developed by the Program of Development and Technological Innovation in Public Health - *Teias* network (PDTSP-*Teias* network) in the Manguinhos area, a neighborhood in Rio de Janeiro, Brazil.

The PDTSP-*Teias* Network

Manguinhos is an underprivileged area in the northern part of the city of Rio de Janeiro, with 13 *favelas* (slums) and a total population of about 50,000 residents (Rabello & Soares Santos, 2015). Marked by poverty, violence, and intense drug trafficking, it presents one of the worst Human Development Indexes in the city of Rio de Janeiro (Santos et al., 2016). The Oswaldo Cruz Foundation (Fiocruz) headquarters are located in the area, where it has been developed education programs, research activities, and public health care for many years (Rabello et al., 2013).

The *Germano Sinval Faria* School Health Center, associated with the National School of Public Health (ENSP/Fiocruz), was for more than 50 years the only health facility providing primary healthcare in Manguinhos. In 2009, with the start of the Growth Acceleration Program (PAC)[1], Manguinhos received an Emergency Care Unit (UPA) and the *Victor Valla* Family Clinic (CFVV). Currently, there is also the Manguinhos Health Clinic (Santos et al., 2016). In 2011, the Manguinhos Intersectoral Management Council was set up to strengthen the participatory management of health policy among Manguinhos residents. This Council helps managers, health professionals, civil society groups, and government agencies from different sectors to work on the social determinants of health that affect the quality of life in the area (Santos et al., 2016).

[1] The Growth Acceleration Program (PAC) was a program created by the federal government of Brazil in 2007. It promoted the planning and execution of major social, urban, logistics, and energy infrastructure in the country, contributing to the accelerated and sustainable development of the country (Ministério do Planejamento, 2020).

Lastly, during this period, a Pacifying Police Unit/*Unidade de Polícia Pacificadora* (UPP)[2] was installed.

The focus on the PDTSP-*Teias* network KT practices allows us to address areas of concern for health promotion in Brazil. KT practices and their conceptual tools are well established in high-income countries, whereas significant deficiencies remain in low- and middle- income countries like Brazil. The lack of a conceptual KT tool may widen the gap in health knowledge between northern and southern countries. Even though social participation and empowerment were listed as part of the health promotion themes stipulated by the Brazilian Ministry of Health in 2007 (Buss & Carvalho, 2009), few KT practices were implemented in Brazil to reduce this gap since then. Thus, this thesis's main contributions are centred on the development of personal skills and building capacity through KT practices (WHO, 1986). In this sense, the KT roadmap will support health promotion by looking at how strategies and programs are adapted to Brazil's local needs considering differing social, cultural, and economic systems. With this in mind, this thesis seeks to decrease the knowledge gap between countries by adapting a KT roadmap that is suitable to the Brazilian context.

General Objective of this Thesis

Given the theoretical gaps that persist in the KT practices in Brazil, this thesis's main objectives are to understand KT in different research projects and management practices and propose a KT roadmap adapted to the Brazilian context. Hence, with these objectives, we sought to:

i. present three projects as examples of three different modalities of KT,

ii. perform a *post hoc* analysis of KT actions and strategies implemented by these three projects undertaken by the PDTSP-*Teias* network embracing the period from 2009 to 2013, and

[2] The Pacifying Police Unit (UPP) is a program implemented by the Government of Rio de Janeiro in 2008 aiming to recover areas under the control of illegal armed groups, to restore the State's legal and legitimate monopoly of force and to reduce crime (ISP, 2020).

iii. verify how participation in the PDTSP-*Teias* network facilitated KT between knowledge producers (mostly researchers) and knowledge users (in Manguinhos).

To achieve these objectives, this study has focused on knowledge producers who were members of the PDTSP-*Teias* network and knowledge users who were also members of the PDTSP-*Teias* network as well as residents of the Manguinhos area. A qualitative methodology was used based on semi-structured face-to-face interviews, a focus group, and document analysis of the texts produced by the PDTSP-*Teias* network steering committee, including books, minutes, meeting reports, management reports, promotional material, institutional documents, and scientific papers.

Thesis Layout

This thesis aims to contribute to the production of knowledge about the KT practices in health promotion in Brazil. In order to respond to the research question, this thesis is organized into seven chapters.

The thesis begins by presenting an overview of relevant KT research and literature so as to better understand the need for knowledge concerning the interactions between knowledge producers and knowledge users in Brazil. In this chapter, KT definitions, concepts, conceptual tools, and research are explored based on the literature drawn from health fields.

The theoretical framework chapter presents the KT plan developed by the Quebec Public Health Institute/*Institut national de santé publique du Québec* (INSPQ). This plan was used to better understand and describe the interactions between knowledge producers and knowledge users in Brazil. The INSPQ KT plan is based on a literature review of more than ten conceptual KT tools used in Canada and the United States. It additionally has specific dimensions to assess the interaction between individual and contextual levels. This dimension facilitated the analysis and understanding of the collaboration between knowledge users and knowledge producers.

In the following chapter, the methodological framework is discussed. This is informed by a qualitative case study with levels of analysis involving the PDTSP-*Teias* network (with 14 projects), and the three projects selected. This case study relied mainly on document analysis (texts

produced by the network steering committee, meeting minutes and reports, management reports, and promotional material), interviews with knowledge producers (N=9), and focus group with knowledge users (N=4 participants). The framework analysis was applied to provide clear steps to follow and structured outputs of summarized data. A framework analysis of this material used categories such as project development, KT product elaboration, and interaction between knowledge producers and users.

The results chapter presents the analysis of the face-to-face interviews, focus group, and key documents of the PDTSP-*Teias* network. The results provided answers to the thesis's main objectives, which were to understand KT in different research projects and management practices and propose a KT roadmap adapted to the Brazilian context. The results present an essential understanding of the actions and strategies applied by knowledge users and knowledge producers in the PDTSP-*Teias* network.

Finally, the discussion chapter attempts to respond to some reflections regarding the KT process and the interaction between knowledge producers and knowledge users in the PDTSP-*Teias* network. In order to contribute to a better understanding of the KT process in Brazil's health promotion field, this thesis will end by looking at how participation in the PDTSP-*Teias* network facilitated knowledge development and what are the obstacles to promoting KT between knowledge producers and knowledge users.

Chapter 1 – Literature Review

This literature review is divided into three sections. The first section presents an introduction to knowledge translation (KT) definitions and an understanding of conceptual KT tools. The second section offers the importance of KT to health promotion in general and more specially to the Brazilian context. The last section presents the main challenges associated with assessing KT in Brazil.

This literature review is not intended to be a systematic review; however, it is an in-depth review of KT concepts and conceptual tools. The body of work in this literature review was selected from frequently cited KT literature in Canada and Brazil, representing a variety of approaches that apply to knowledge translation globally, and more specifically, to the Brazilian context.

1.1. Introduction to Knowledge Translation Concepts

1.1.1. Definition of Knowledge Translation

Knowledge translation (KT) is a collaborative process between knowledge producers (mostly researchers) and knowledge users (end users of research results in the real world) (Nguyen et al., 2020), such as communities, health practitioners, decision-makers, and stakeholders (CIHR, 2016b). Thus, KT is a complex and multidimensional process of putting knowledge into action (CIHR, 2016b; Lemire et al., 2013; Prihodova et al., 2019; Sudsawad, 2007). KT increases the likelihood that research evidence will be used in policy and practice decisions, enabling researchers to identify practice- and policy-relevant research questions (Mitton et al., 2007; Siron et al., 2015). It involves the exchange of knowledge between knowledge producers and knowledge users (Mitton et al., 2007). Different terminologies across different sources of literature are used for KT, such as knowledge transfer, knowledge sharing, knowledge implementation, and knowledge translation (Prihodova et al., 2019; Siron et al., 2015). The term knowledge transfer emerged during the 1990s as a process by which research messages were "pushed" by knowledge producers towards knowledge users. The Canadian Institutes of Health Research (CIHR) defined knowledge transfer as "a dynamic and iterative process that includes synthesis, dissemination, exchange and ethically sound application of knowledge to improve the

health of Canadians, provide more effective health services and products and strengthen the health care system" (CIHR, 2016b, p. 2). The terminology has also changed according to different contexts, from implementation science in Europe, to dissemination and research use in the United States, to knowledge translation in Canada (Colquhoun et al., 2014; Straus et al., 2009). In Brazil, knowledge translation/*translação do conhecimento* is the most commonly used terminology, but is still developing (Abreu et al., 2017; Andrade et al., 2020; Bezerra et al., 2019; Vieira et al., 2020). The most important aspect of an effective KT practice is knowing how to translate knowledge into action despite the terminology chosen. Such "know-how" and translation are at the interface between universities, public policies, and communities. Actors working at this interface contribute to the co-construction of knowledge among research partners (Clavier et al., 2012).

In 2009, the Quebec Institute of Public Health/*Institut national de santé publique du Québec* (INSPQ) published a report and an action tool guide titled *"Animer un processus de transfert des connaissances."* This report presented a KT synthesis from the perspective of supporting action (Lemire et al., 2009). According to the report, "introducing new knowledge to inform decision-making, to change individual or organizational behaviors, to develop policies and programs, or to change professional practice is a complex process" (Lemire et al., 2009, p. 16). To the authors, KT involves seven steps: adaptation, diffusion, reception, adoption, appropriation, use, and production or co-production (Figure 1). Also, it is essential to add the dimension of the impact assessment to all seven stages. The impact assessment can be made at different times in the KT process (Lemire et al., 2009). The number and the order of KT phases may vary according to the knowledge to be translated, the objectives to be achieved, and the context of the actors involved (Lemire et al., 2009). In this regard, the authors mentioned the importance of the interaction between knowledge producers and knowledge users throughout the process.

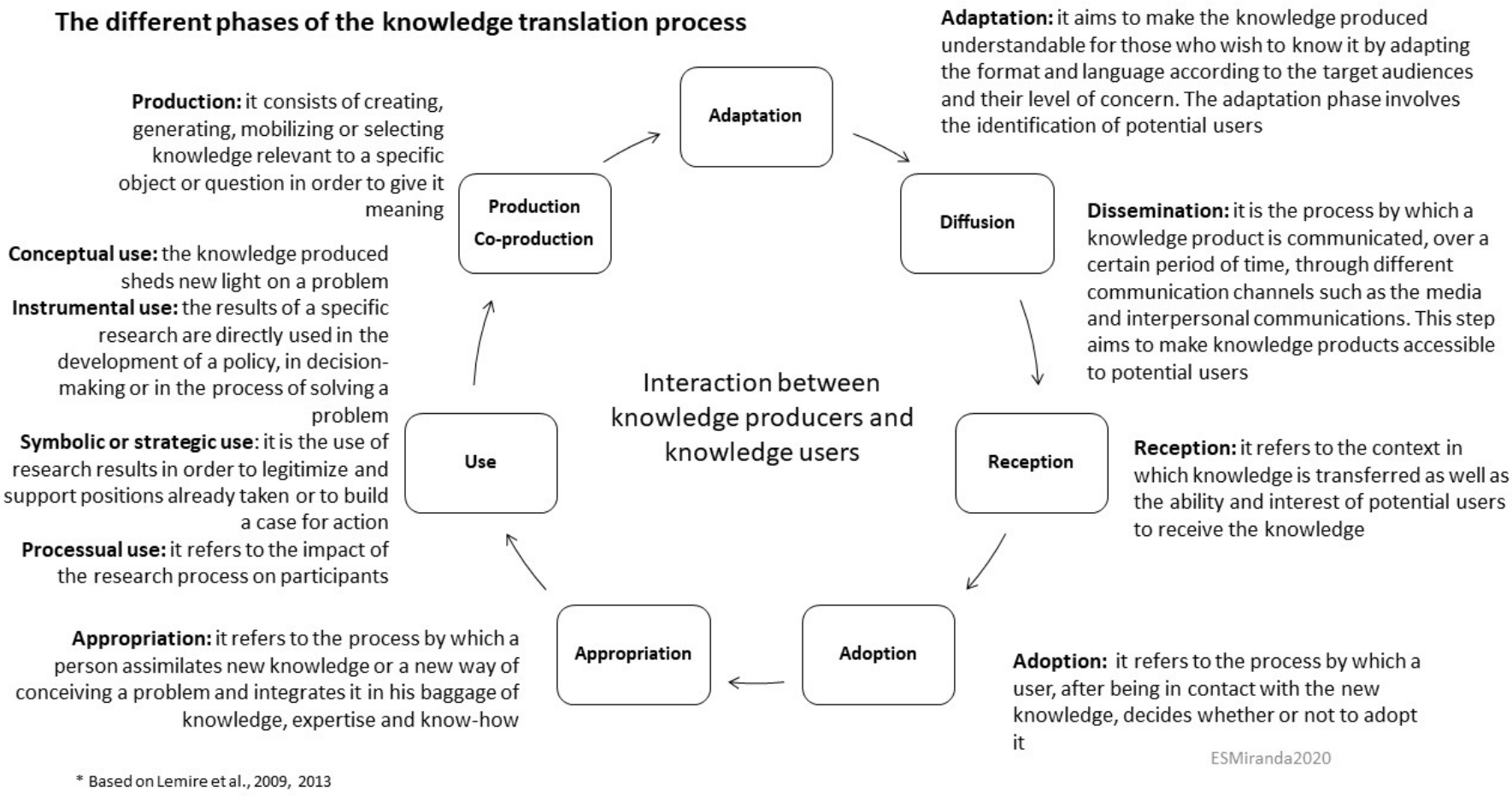

Figure 1: The Different Phases of the Knowledge Translation Practices

1.1.2. Knowledge Translation: Unravelling Concepts

Regarding public health, knowledge can be divided into four major categories:

i. knowledge from research (often referred to as scientific knowledge and research-based knowledge),

ii. knowledge from tactics (knowledge of practitioners, managers, researchers or professionals who have accumulated background of practical experiences),

iii. knowledge from data analyzed (multiple data that need to be transmitted in an appropriate form to policy-makers, managers and stakeholders) (Lemire et al., 2013), and

iv. knowledge from users/clients.

These categories help to define KT practices and how to implement them. Besides, concepts such as knowledge exchange, translational research, knowledge translation, and knowledge transfer need to be fully explored to better understand KT practices (Graham et al., 2006b).

Exchange of Knowledge or Knowledge Exchange (KE) involves interaction between research users and research producers, resulting in reciprocal learning. KE must be adapted to the community resulting in benefits to all partners (Graham & Tetroe, 2007). KE was recently defined as "a process which brings together academic staff, users of research and wider groups and communities to exchange ideas, evidence, and expertise" (The University of Edinburgh, 2016, p. 2). KE usually takes place in public consultation forums and meetings organized by governmental, professional, and special interest groups.

Translational Research originated during the early 1990s with cancer research (Rubio et al., 2010). For Rubio and colleagues (2010), “translational research moves in a bidirectional manner from one type of research to another – from basic research to patient-oriented research, to population-based research, and back – and involves collaboration among scientists from multiple disciplines” (Rubio et al., 2010, p. 7). Translational research was recently defined as “research that applies discoveries generated in the laboratory to studies in humans (bench to bedside), or that speeds

up the adoption of the best practices into community settings (bedside to practice)" (MICHR, 2014, p. 1). Lately, there has been a push by funding agencies to grant funds to research projects that have an essential translational component (Green & Mercer, 2001; Minkler et al., 2003). Whether this policy will achieve practical "bench to bedside" translation is still debatable (Drolet & Lorenzi, 2011; Hu et al., 2015; Keramaris et al., 2008; Naidu, 2011).

Knowledge Translation (KT) encompasses "all steps between the creation of new knowledge and its application to yield beneficial outcomes for society" (CIHR, 2006, p. 2). Linkage and exchange, communication and education, policy change and program, and practice improvement initiatives are some of the strategies for a successful KT (Barwick et al., 2014; CIHR, 2006). According to the CIHR, there are two categories of KT: End-of-grant KT and Integrated KT. End-of-grant KT is commonly known as dissemination or communication of researcher-initiated activities (i.e., publications in peer-reviewed journals; conference presentations; summary briefings to stakeholders; educational sessions with patients, practitioners or policy-makers; media engagement; and the commercialization potential of scientific discoveries) (Graham & Tetroe, 2007). Integrated KT implicates active collaboration between researchers and research users in all parts of the research process, which includes the shaping of the research questions; methodology; involvement in the data collection and tools development; interpretation of the findings; and dissemination and implementation of the research results (Graham & Tetroe, 2007). In a recent commentary, Kothari and colleagues (2017) defined Integrated KT as "a model of collaborative research, where researchers work with knowledge users who identify a problem and have the authority to implement the research recommendations" (Kothari et al., 2017, p. 299). An integrated KT approach recognizes that, to influence policy, knowledge users and producers need to set goals from the start and in many ways (Edwards et al., 2019).

Knowledge Transfer is often referred to as the transfer of knowledge in one direction, usually starting from the academic world to knowledge users. Knowledge transfer "describes the one-way flow of knowledge from researchers to potential users, including policy-makers, clinicians, and clients; it is also considered the responsibility of researchers" (Johnson, 2005, p. 11). Researchers may use three categories of transfer activities ranging from passive to active activities, namely:

i. the diffusion of knowledge through journals, newsletters, websites, and mass media to promote awareness;

ii. the dissemination of activities to share research findings by mailing results to a specific group of stakeholders; workshops in conferences; and

iii. the implementation of transfer activities, such as face-to-face contact with experts, to create behavior change and build strategies to overcome barriers to research implementation (Johnson, 2005).

1.1.3. Conceptual Knowledge Translation Tools

Conceptual knowledge translation tools can guide the process of translating research into practice (Graham et al., 2006a). KT models can offer a global picture of the KT process from knowledge production to knowledge use. Frameworks can provide practical guidelines that can be used by knowledge producers and knowledge users engaged in the KT process (Sudsawad, 2007). Recently, a scoping review of KT theories, concepts, models, and frameworks mentioned 596 studies reported using 159 knowledge translation theories, models, and frameworks (Strifler et al., 2018). Some of the theories that researchers find useful for understanding or explaining aspects of research implementation are the Rogers's Theory of Diffusion, Bandura's Social Cognitive Theory, and May's Normalization Process Theory (Strifler et al., 2018). While many conceptual tools guide knowledge translation interventions, the proliferation of these tools with little guidance can create confusion for knowledge producers and knowledge users on which tool to choose (Esmail et al., 2020), which means that their applicability and relevance are unknown.

Thus, knowledge translation frameworks are frequently used to guide intervention development (Haynes et al., 2018; Ward et al., 2009a). In this regard, Strifler and colleagues (2018) listed some of the KT frameworks described as useful for understanding or explaining influences, implementing outcomes, and evaluating implementation efforts. They are:

i. Theoretical Domains Framework (Michie et al., 2005),

ii. Consolidated Framework for Implementation Research (Damschroder et al., 2009), and

iii. Reach Effectiveness Adoption Implementation Maintenance Framework (Glasgow et al., 1999).

Lastly, the authors mentioned that the Knowledge-to-Action Framework by Graham and colleagues (Graham et al., 2006b) and the Quality Implementation Framework by Meyers, Durlak and Wandersman (Meyers et al., 2012) were useful examples of KT models for guiding the steps or process of implementation (Strifler et al., 2018). Although researchers are aware of KT theories, models, and frameworks, "studies have shown that researchers fail to use them or may not use them appropriately" (Strifler et al., 2018, p. 92). Likewise, Shibasaki and colleagues (2019) published a scoping review after searching publicly accessible and relevant KT models and frameworks (Shibasaki et al., 2019). Fifteen models and frameworks were selected for analysis, and, surprisingly, very few KT models and frameworks were framed from the perspective of the knowledge users (Shibasaki et al., 2019). The authors also pointed out that several implementation factors were not addressed in the 15 KT models and frameworks analyzed, such as:

i. knowledge itself, the knowledge user's perception about research and research-based knowledge;

ii. knowledge producer's skills, experiences, context, and level of understanding about users; and

iii. the knowledge translation process (planning, engaging, executing and evaluation) (Shibasaki et al., 2019).

It appears all selected models and frameworks were designed based on knowledge producers' point of view, which means they had limited information about knowledge users' perceptions in the KT process (Shibasaki et al., 2019).

In a 2019, a review and synthesis of frameworks for engagement in health research was released (Jull et al., 2019). The authors intended to identify frameworks of knowledge user engagement and describe the concepts comprising these frameworks (Jull et al., 2019). Engagement in research integrates the views and values of people actively involved in the knowledge production

process to those of the people who might benefit or be affected by the research study (knowledge users). The authors identified 15 concepts related to knowledge user engagement in health research:

i. researcher-related process: prepare, support (support researcher capacity for power-sharing, expertise, engagement, including language and knowledge differences);

ii. knowledge user-related process: prepare, support (support knowledge user organizational capacity for power-sharing, expertise, engagement);

iii. relational process (sustain a relationship building between knowledge users and knowledge producers to promote respect, reciprocity, trust and partnership synergy);

iv. research agenda (a process to define study agenda: scope, priorities, objectives);

v. ethics: principles/values (develop the knowledge users-producers partnership in an ethical way through reflection on ethical concepts);

vi. research questions (define research questions to identify what the research project aims to achieve to justify the need to conduct the research);

vii. resources development (develop proposals to obtain resources (e.g. funding, time) to support knowledge users-producers engagement);

viii. ethics: policy/rules (develop the knowledge users-producers partnership in an ethical way through participation in an ethical application development);

ix. methodology (decide on the research approach or report process to justify the use of the proposed methodology);

x. methods (decide on research methods and the justification for the use of the proposed methods);

xi. collect data (data collected includes tool development);

xii. analysis (decide about data analysis and interpretation);

xiii. dissemination (identify the appropriate audience to disseminate the research findings, tailoring the message to the audience to create tangible products);

xiv. evaluation (evaluate the research processes); and

xv. sustainability (maintain study benefits at a certain level) (Jull et al., 2019).

However, it is difficult to determine which order might be best for knowledge user engagement in health research (Jull et al., 2019). Research practices should be guided by conceptual tools focusing on implementation, thus promoting knowledge user engagement. However, there is "little consensus on the essential concepts of knowledge user engagement and guidance for the effective conduct of health research" (Jull et al., 2019, p. 3). There is a need to understand best practices in research engagement, encouraging dialogue between knowledge users and knowledge producers about the concepts of knowledge user engagement in health research (Jull et al., 2019). Since there are few examples of studies that systematically evaluate the frameworks that help guide teams of knowledge producers and knowledge users, health researchers "need to go beyond reporting on the framework used”," and "present analysis about the use of frameworks that guided research” (Jull et al., 2019, p. 11).

With many conceptual tools for knowledge translation to choose, it can be confusing for knowledge producers who are seeking to understand knowledge translation or to plan KT activities (Ward et al., 2009a). However, these models and frameworks can be used to identify standard components of an interactive and multidirectional knowledge translation process. These components are:

i. problem identification,

ii. knowledge development and selection,

iii. context analysis,

iv. KT interventions; and

v. knowledge utilization.

Hence, it is not easy to choose among several KT conceptual tools. In order to choose the best tool to adapt to Brazil, a shortlist of models and frameworks developed in Canada was analyzed (Sudsawad, 2007). The authors intended to bring together several KT aspects to raise awareness and stimulate ideas and questions about KT for future research in this area (Sudsawad, 2007). The models and frameworks based on Pimjai Sudsawad (2007) study are listed in Table 1.

Table 1: Conceptual Knowledge Translation Tools

Focus	Conceptual KT tools	Authors	Strengths	Weaknesses
Interaction-Focused	Understanding-User-Context Framework	(Jacobson et al., 2003)	✓ Derived from a review of the literature and the author's experience ✓ Provides practical guidelines to researchers and others engaged in the KT process	• Does not take into consideration the context before the knowledge was developed • Does not present the knowledge creation process • Does not talk about local knowledge • Knowledge producers' point of view
Context-Focused Can be used to understand the contextual factors that could play essential roles in the success or failure of the KT process	The INSPQ Plan	(Tchameni Ngamo et al., 2016)	✓ Derived from a review of the literature and the author's experience ✓ Provides practical guidelines to researchers and others engaged in the KT process ✓ Addresses Integrated and End-of Grant KT approaches ✓ Considers different types of knowledge (research-based knowledge, tacit knowledge, knowledge derived from data analysis and local knowledge) Takes into consideration the context before the knowledge was developed	• Does not mentioned barriers and facilitators to KT strategies
	The Ottawa Model of Research Use	(Hogan & Logan, 2004)	✓ Interactive model	• There is no mention of the interaction between

Table 1: Conceptual Knowledge Translation Tools

Focus	Conceptual KT tools	Authors	Strengths	Weaknesses
Context-Focused Can be used to understand the contextual factors that could play essential roles in the success or failure of the KT process			✓ Addresses the implementation of existing research knowledge ✓ Relies on the process of assessing, monitoring, and evaluating each KT element (before, during, and after the innovation implementation)	knowledge producers and knowledge users. • Does not present the knowledge creation process • Does not talk about local knowledge • Knowledge producers' point of view
	Knowledge-to-Action Process Framework (KTA)	(Graham et al., 2006a) (Graham et al., 2006a)	✓ Useful for facilitating the use of research knowledge by several stakeholders (practitioners, policymakers, patients, and the public) ✓ Two components o Knowledge creation o Action ✓ Knowledge is mainly research-based o Incorporates experiential knowledge ✓ Emphasizes collaboration between the knowledge producers and knowledge users throughout the KTA process ✓ Adapts the knowledge to fit with the local context	• Does not take into consideration the context before the knowledge was developed • Analyzes the context after the knowledge was produced • Does not mention KT partners • Does not mention intermediaries (knowledge brokers) • Knowledge producers' point of view
	The Promoting Action on Research Implementation	(Harvey & Kitson, 2016)	✓ Describes the implementation of research in practice	• Does not discuss elements or factors related to the

Table 1: Conceptual Knowledge Translation Tools

Focus	Conceptual KT tools	Authors	Strengths	Weaknesses
	in Health Services Framework (PARIHS)		Identifies facilitation as one of the main elements in the research utilization process	knowledge creation process • Needs more demonstration of how the model could be applied in practice • Knowledge producers' point of view
	The Coordinated Implementation Model	(Lomas, 1993)	✓ Demonstrates some of the additional and largely unexploited routes through which research information could influence clinical practice ✓ Increases awareness of factors that should be taken into consideration in the implementation effort within the KT process	• Analyzes the context after the knowledge was produced • Does not mention the coproduction of knowledge • Knowledge producers' point of view
Individual-Focused Models	The Stetler Model of Research Utilization	(Stetler, 2001)	✓ Practitioner-oriented model ✓ To be used by individual practitioners as a procedural and conceptual guide for the application of research in practice	• Only knowledge user-oriented
Country-level Framework	Framework for assessing country-level efforts to link research to action	(Lavis et al., 2006)	✓ Highlights the general climate for research use	✓ Needs more demonstration of how the model could be applied in practice ✓ Mostly knowledge synthesis oriented

1.2. Health Promotion Evidence into Practice

The literature about knowledge translation (KT) suggests mechanisms that may enable the translation of health promotion findings into practice (Lemire et al., 2009, 2013) (Figure 2). The underutilization of knowledge as a result of inferior communication methods, inappropriate user skills, and delayed dissemination of outcomes have been mentioned as limitations in efforts to support knowledge translation into action (Ellen et al., 2014a; Haynes et al., 2018). According to Ellen and colleagues (2014), "bridging the gap between what we 'know' and what we 'do' is an important challenge" (Ellen et al., 2014a, p. 2). For this reason, a range of mechanisms has been used in developing knowledge translation into action strategies to facilitate the connection between health promotion research and practice (Lemire et al., 2009, 2013) (Figure 3). KT strategies are referred to as mechanisms to increase the use of research evidence in policy and decision-making contexts (Armstrong et al., 2013). Based on systematic reviews, Breckon and Dodson (2016) listed some of the most promising KT strategies (Breckon & Dodson, 2016) (Appendix G).

a) Joint researcher-practitioner workshops: Workshops are strategic to knowledge translation into action. Workshops are places where researchers and practitioners work together to share their preoccupations with the audience they want to reach (Lavis et al., 2003). It is the starting point of an interesting conversation about the needs and communication styles that each audience requires (Mitton et al., 2007). Workshops may also establish formal agreements of expectations and resources to be provided by researchers and decision-makers. In the course of the workshops, each partner's role should be carefully defined (CIHR, 2009a, 2009b, 2010).

b) A collaborative definition of research questions: Gagliardi and colleagues (2008) mention that some decision-makers want to have more involvement in shaping research questions (Gagliardi et al., 2008). A collaborative definition of the research questions may nurture the interest of knowledge users in the process of knowledge translation into action process, increasing the sense of belonging and responsibility in both parties. Besides, research questions developed together should foster a greater sense of interest and commitment by knowledge

users and knowledge producers involved in this process. A collaborative research question would, in turn, facilitate "handing over the baton" when transitioning from research into practice.

c) The use of intermediaries, known as “knowledge brokers” (KB): KBs are people or organizations that know how to facilitate and support change (Dobbins et al., 2009). The literature about KBs has increased in the last few years (Barac et al., 2014; Bornbaum et al., 2015; Gagliardi et al., 2008; Newman et al., 2020; Ward et al., 2009b). KBs “work collaboratively with stakeholders to facilitate the transfer and exchange of information in contextually diverse settings” (Bornbaum et al., 2015, p. 2). Some authors understand that the human component is important to knowledge translation; however, the role of funding agencies as KBs, is even more fundamental to knowledge translation strategies (Cordero et al., 2008; Tetroe et al., 2008). In knowledge translation strategies, KBs play an essential role as the human component of these strategies. Moreover, to Cordero and colleagues (2008), funding agencies acting as KBs may encourage research synthesis focusing on health equity by "fostering and encouraging interactions between researchers and relevant stakeholders" (Cordero et al., 2008, p. 532).

d) Face-to-face encounters and interpersonal contact between researchers and stakeholders: Websites and newsletters are attractive infrastructure supports for the knowledge translation into action process; nevertheless, they should never replace face-to-face encounters (Boyko et al., 2012; Lavis et al., 2003). One crucial aspect of interpersonal contact and face-to-face encounters is the creation of trust between both sides. Moreover, face-to-face encounters should convey non-verbal communication, such as gestures and facial expressions that would otherwise be missed in written communication.

e) Researchers and stakeholders as an interdisciplinary research team: In the literature, interdisciplinary interaction has been less explored compared to the other strategies; however, recent publications have shown the importance of practical knowledge sharing during public health outbreaks. As reported by Delaunay and colleagues (2016), "the global public health community is still unprepared to collect good quality, standardized data and biomaterials during emergencies and to share them in ways that provide equitable access to researchers" (Delaunay et al., 2016, p. 236). That said, it is crucial to explore ways of facilitating the relationship between

knowledge users and knowledge producers. This exercise should aim to reduce the gap between research evidence and practice before a call for emergency sharing.

Further innovation and interventions need to be considered to improve the application of health promotion research evidence at the practice level (health system level). Accordingly, knowledge translation raises challenges for both research and action practices as well as across organizations. For example, the development of trust between parties, organization of time and agenda, and prioritization of interests. One of the biggest challenges to knowledge translation is to build trust in partnerships involving knowledge producers and knowledge users. To this end, some steps to ease this gap might involve:

i. identifying the target audiences to translate research into practice in ways consistent with the available research evidence,

ii. finding the credible messengers of both knowledge producers and knowledge users' arena,

iii. creating an interactive engagement between knowledge producers and knowledge users,

iv. collaboratively evaluating how the research knowledge has been used in practice,

v. sponsoring organization interest in knowledge translation, and

vi. having health research funders focusing attention on knowledge translation.

Nevertheless, these challenges may be mitigated using knowledge translation strategies that are adequate for each target audience. Improving dialogue and face-to-face encounters is necessary to increase the process of turning health promotion evidence into practice. Successful and non-successful knowledge translation programs should report their experiences to help improve future knowledge translation partnerships. As Lemire and colleagues (2009, 2013) mentioned, there is an increasing need to assess the effectiveness of knowledge translation strategies that improve the interaction between knowledge producers and knowledge users (Lemire et al., 2009, 2013).

The combined use of KT strategies such as policy briefings, workshops, policy dialogues, and meetings with communities of practice hold promise, as these are KT strategies familiar to both

knowledge producers and knowledge users. However, the time, effort and resources involved in these strategies should not be underestimated. Conducting KT strategies requires investment to obtain timely access to good quality and relevant research evidence, as well as skill building with policymakers (Clar et al., 2011; Oliver et al., 2014).

A central barrier to implementing KT strategies is the lack of high-quality evidence relevant to local health systems contexts (Edwards et al., 2019). Context specificity is a key challenge to KT practices. Therefore, “research that meets local demands and aligns with local priorities is more likely to be translated into policy” (Edwards et al., 2019, p. 10). Problems with stakeholder engagement, including communication problems between knowledge producers and knowledge users, lack of resources and funding, staff turnover, and inadequate methods of dissemination are frequent factors hindering the uptake of health research into policy (Clar et al., 2011).

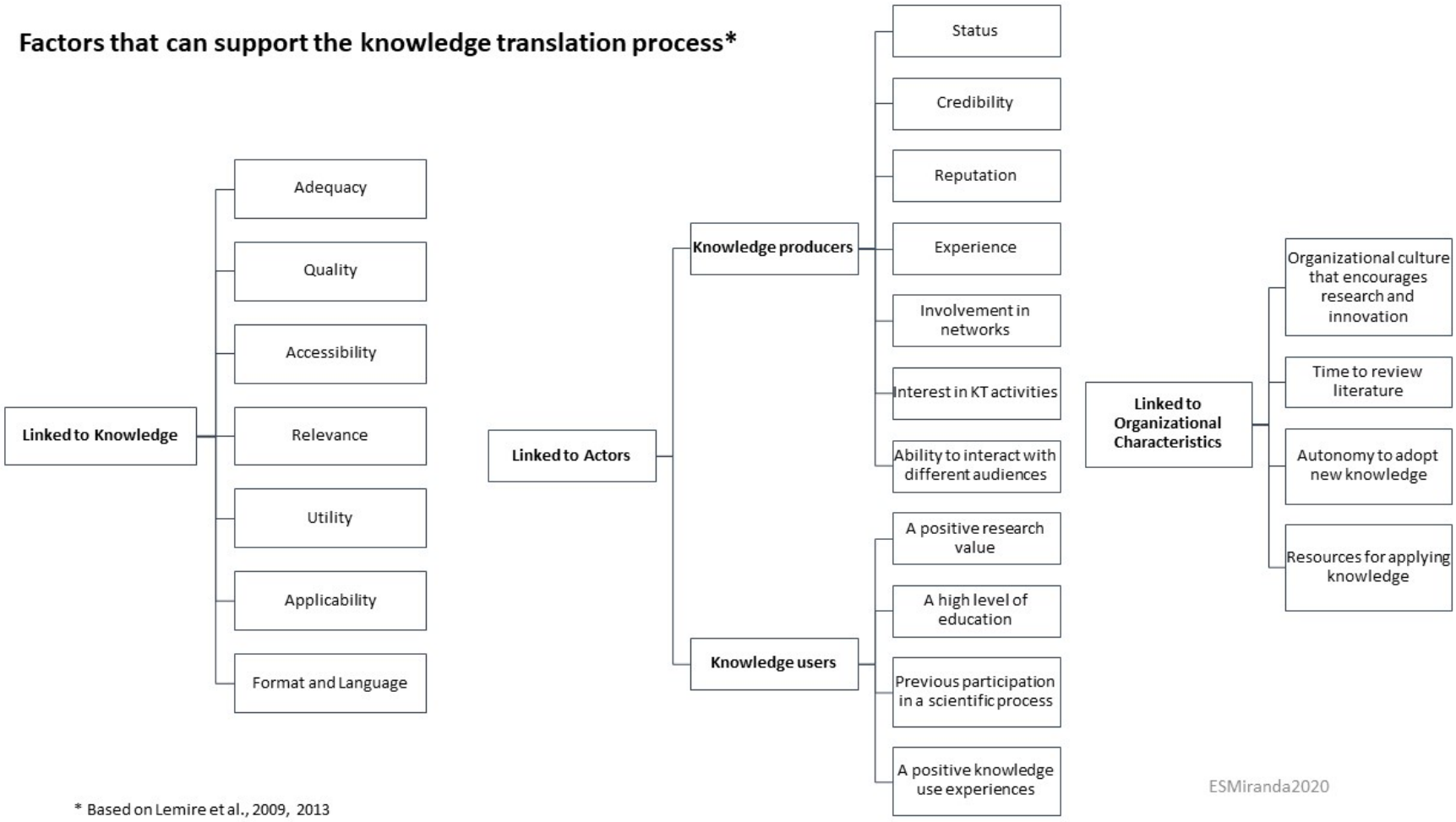

Figure 2: Factors that Can Support Knowledge Translation Practices

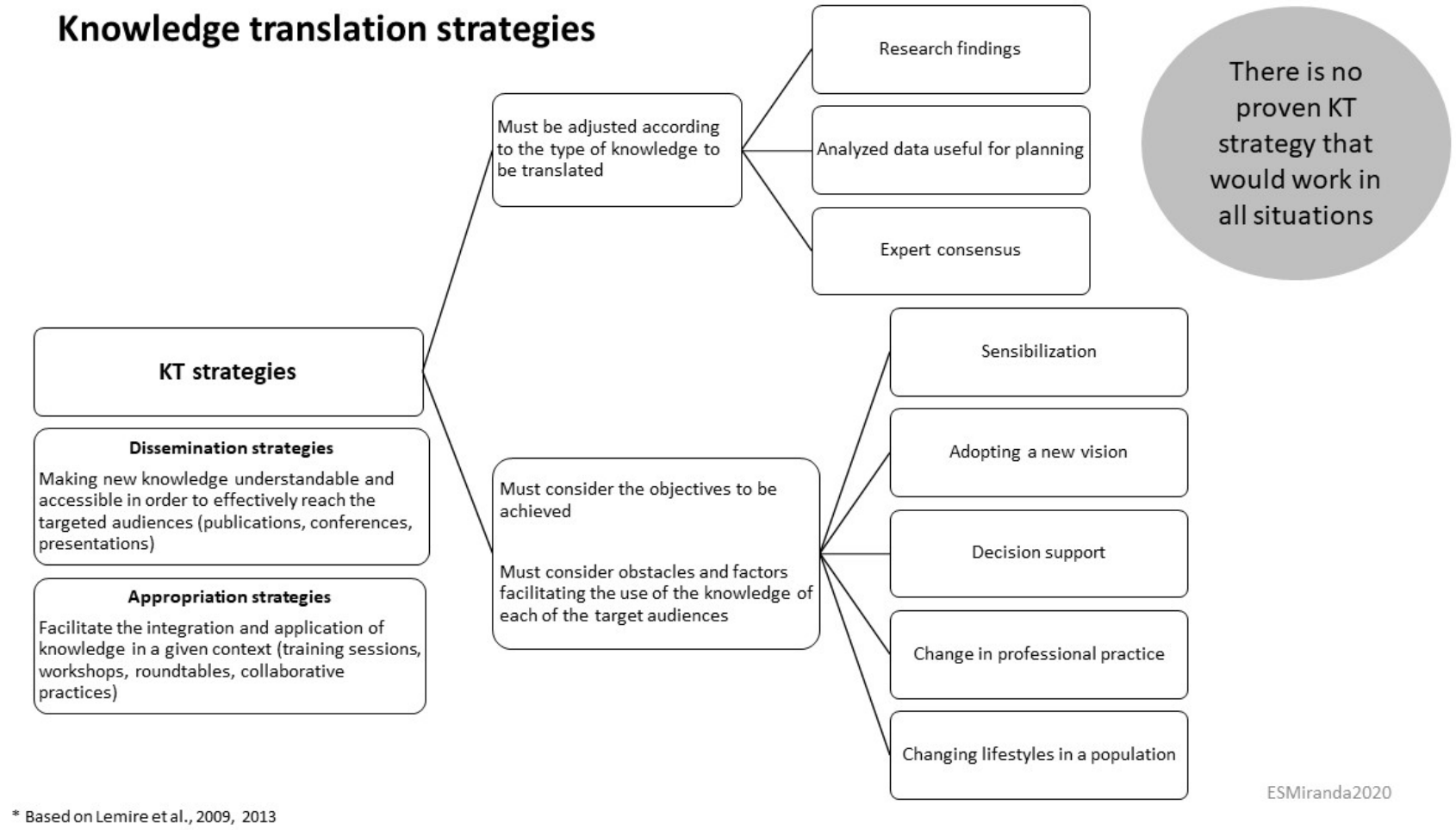

Figure 3: Knowledge Translation Strategies

1.2.1. Knowledge Translation in Health Promotion in Brazil

Knowledge translation (KT) is still a new concept to knowledge producers in Brazil (Andrade et al., 2020; Bezerra et al., 2019; Oelke et al., 2015; Vieira et al., 2020). However, concepts of knowledge use have been studied. For example, Dias and colleagues (2015) have examined strategies to encourage the use of scientific evidence in health policy decision-making (Dias et al., 2015). The authors revised seven systematic reviews identifying four main strategies that can possibly stimulate the use of evidence in decision-making language adaptation in order to:

i. produce and disseminate evidence syntheses to different audiences, which can reduce regional inequalities and increase access to information;

ii. encourage the use of journalism and other forms of communication to expand the dissemination of scientific knowledge, which can be done by written language or using strategies that are less dependent on written communication, such as the dissemination of news through radio, reaching audiences traditionally neglected;

iii. disseminate scientific knowledge using online platforms, thus lowering the barrier of unavailability of relevant scientific evidence for ready access; and

iv. promote interaction between knowledge producers and knowledge users, which can be achieved by creating deliberative spaces or institutionalized platforms, where research findings and health policy projects are presented and discussed with the participation of knowledge users and knowledge producers (Dias et al., 2015).

After analyzing the advantages and disadvantages of these knowledge translation strategies, the authors deemed that these strategies are relevant to the Brazilian context; however, "it is necessary to evaluate the local context and the implications of each of the strategies for improving the health system as a whole" (Dias et al., 2015, p. 321). In this sense, there is a need to assess the impact of different strategies to stimulate the use of scientific evidence by knowledge users not only on the cost and efficiency of knowledge translation processes but also on improving the health of the population (Dias et al., 2015).

The KT concept has been used in the evaluation of graduate programs to assess the occurrence and conditions of knowledge production (Marques da Cruz et al., 2016). Studies have contributed to discussions on more effective uses of knowledge resulting from scientific production and on the formulation and implementation of health policies (Marques da Cruz et al., 2016; Pessoa et al., 2016). The debate on South-South cooperation was examined in a partnership among the Oswaldo Cruz Foundation and the Ministries of Health of Brazil and Haiti (Pessoa et al., 2016). The study included an analysis of the Physical and Technological Resources in Health Management course in Haiti. The course objective was to expand the capacity to build the viability of the operation and maintenance of health units in partnership with Haitian workers (Pessoa et al., 2016). The authors point out that there are enormous challenges to knowledge construction in health in Brazil and Haiti. This construction is a challenge for both countries' internal and international cooperation processes. For the authors, the difficulties are often expressed in the construction of the concept and the approach to what it means to build knowledge (Pessoa et al., 2016). Therefore, the collective construction process is still considered a challenge for Brazil and Haiti.

Even though KT is a new concept in Brazilian scientific literature, there is a “growing need to use the scientific knowledge produced into health strategies, actions, and policies” (Dias et al., 2016, p. 95). Thus, KT became critical for health promotion research in Brazil. Knowledge producers in Brazil are looking for a better understanding of the impact of the KT process in the empowerment and capacity building of several stakeholders (Dias et al., 2016). Therefore, knowledge producers are expecting to know how conceptual KT tools can operate more effectively and efficiently. Some conceptual and theoretical reflections based on KT were carried out in an exploratory study in Brazil (Abreu et al., 2017). The study sought to identify possible alliances and factors that could facilitate or hinder KT. The results indicated that KT guided “the construct validation of the utilization process, establishing a rational and logical basis to cover different actors and the interests that mobilize them” (Abreu et al., 2017, p. 302). However, it is still necessary to theorize the role of intermediary actors and Brazil's mobilization of knowledge. Efforts are needed to develop theories that integrate the diverse mechanisms of inclusive social change (Abreu et al., 2017).

In 2017, the main challenges of the 2030 Agenda[3] and its Sustainable Development Goals with its ambitious goals for restructuring public policies that promoted KT was discussed by knowledge producers in Brazil (Martins & Martins, 2017). Martins and colleagues (2017) published a conceptual and theoretical study referring to social technologies as a subsidy for sustainable development. For the authors, "social transformation will be possible based on the ethics of life, with a collective mode of production and emphasizing the reduction of social inequalities" (Martins & Martins, 2017, p. 343). The authors point out that health issues are determined by complex social factors. For the social factors to be dealt with more effectively, it is necessary to translate knowledge from different disciplines and sectors (Martins & Martins, 2017). Thus, it is necessary to relate concepts of social inequalities with the KT for social change.

Recently KT was analyzed at the Executive Health Surveillance Secretariat in the state of Pernambuco. For the authors, there is a need to answer questions related to the use of knowledge produced by the Secretariat, coupled with the importance of applying conceptual KT tools in the Brazilian context (Bezerra et al., 2019). The study was a qualitative case study in the period 2011-2015. It was promoted by the Surveillance Secretariat based on the production of knowledge in a graduate program. The interview guide used the Knowledge to Action - KTA model by Graham et al. (2006). To the authors, the Surveillance Secretariat adopted an integrated KT. This meant that the graduate program implemented strategies that promoted connection and exchange with the health system, which could contribute to the creation of an easy-to-use knowledge. The authors conclude that it is essential that future graduate programs include KT as part of planning in order to increase its scope and support its sustainability (Bezerra et al., 2019).

As mentioned in this literature review, KT is a well-established practice in high-income countries such as Canada, Australia, the United States, and the United Kingdom. Conversely, KT practices are less well-established in Brazil (Miranda et al., 2020a), a country with extremes in income and other health inequalities (Landmann-Szwarcwald & Macinko, 2016).The gap in KT practices can increase the colonisation of knowledge between different income countries emphasizing the

[3] The 2030 Agenda is a 15-year global framework centered on a set of 17 Sustainable Development Goals. The agenda combines social, economic, and environmental dimensions of sustainable development with peace, governance, and justice elements (Canada, 2017).

dominance of the high-income countries in knowledge production (Kamenopoulou, 2020; Lida Kamenopoulou, 2020; Keikelame & Swartz, 2019). According to Manuel Tavares (2009), “the world is a complex multicultural mosaic” (Tavares, 2009, p. 183). However, the depreciation of local and low- and middle-income countries knowledge can make the scientific knowledge planned by a “single epistemological model” (Tavares, 2009). Because of this epistemological injustice, I was interested to understand how KT practices were implemented in Brazil. I recognized that Brazil’s KT practices are in its early stages, which shows the need to understand Brazil’s experiences and alternative social and political practices.

Besides, the lack of knowledge about KT practices in Brazil can increase health inequalities within the country and contribute to waste of health research resources (Chalmers & Glasziou, 2009; Salvo, 2019). Chalmers and Glasziu (2009) showed that, globally, approximately 85% of all investments in health research are lost, generating waste of around 200 billion dollars a year (Chalmers & Glasziou, 2009). This waste of resources may be related to the lack of an adequate conceptual tool to guide KT practices. Financial resource management is crucial to a country with substantial social vulnerability related to health conditions. Closing this KT gap will help the Brazilian health system to improve the way knowledge producers will work closely to knowledge user needs. In these complex contexts, “uncertainty and unpredictability” play a significant role, and the ability to adapt and change quickly is something that knowledge users are required to do daily (Jordan, 2015, p. 1). Besides, when it comes to more practical change that relies on a change to systems and processes, the challenges are higher (Jordan, 2015). If scientific knowledge emerges in a receptive socio-political context, it can trigger changes in public health policies (Lowery et al., 2021). Thus, translating scientific knowledge into knowledge users' needs should be a policy priority in all health systems (Morris et al., 2011). In low- and middle-income countries this is even more important. Consequently, KT practices can play an important role in closing the health inequalities gap in Brazil.

1.3. Main Challenges Associated with Assessing Knowledge Translation in Brazil

As presented above, knowledge translation (KT) is a new field, and research about KT is mostly about concepts and conceptual tools of the knowledge translation process (Khalid et al., 2020; Oelke et al., 2015; Shibasaki et al., 2019; Strifler et al., 2018). Globally, more and more empirical qualitative studies, in particular qualitative case studies related to KT practices, are being published in high-income countries (Bourbonnais & Michaud, 2018; Sibley et al., 2017). In countries considered upper-middle-income like Brazil, there is little evidence and analysis of such practices (Bezerra et al., 2019; Malla et al., 2018; Marques da Cruz et al., 2016; Siron et al., 2015). Nonetheless, improved reporting of case studies by qualitative researchers is critical for the benefit of knowledge producers and knowledge users in all countries (Hyett et al., 2014). Although research about KT has increased for several years, the many terms used to indicate similar or complementary practices demonstrate how much KT is expanding (Miranda et al., 2020). Also, little progress has been made about how KT practices can be improved in Brazil (Oelke et al., 2015). Besides, there are substantial factors that affect how research can be used for health promotion actions, such as:

i. tensions between 'global' and 'local' health research,
ii. difficulties in creating and accessing evidence,
iii. adaptation of KT strategies for low- and middle-income countries, and
iv. role of non-government organizations in the KT process (Malla et al., 2018).

Even though there is a growing body of literature about the use of research findings by knowledge users, especially policy-makers, research about KT are still "either descriptive or theoretical" (Haynes et al., 2018, p. 2); for example, descriptive studies often struggle to identify findings that are transferable to other contexts, limiting their value for informing intervention design. Conversely, theoretical studies produce many conceptual tools, but they are often hard to operationalize (Haynes et al., 2018). Research evaluating specific KT strategies to improve the use of research findings in policy processes remains underdeveloped (Haynes et al., 2018). There are

many good ideas about what may or may not support the use of research findings in policy-making, but there is little robust empirical information about KT strategies that are effective in a given context (Haynes et al., 2018). Therefore, a realistic scoping review showed limited instrumental use of research on interventions designed to increase the ability to use research in policy-making processes. The research was rarely translated directly into political action, even where the research was valued and understood (Haynes et al., 2018). According to the authors, due to the complexity of the policy-making field, there is no KT strategy superior to another to help policy-makers to use research (Haynes et al., 2018). Examples of promising strategies are tailored interactive workshops supported by goal-focused mentoring and genuine collaboration. Infrastructure, governance arguments, and workforce development are examples of systems support that have an essential role, but it is tough to measure their effects compared to other knowledge translation strategies (Haynes et al., 2018).

The limited interaction and collaboration between knowledge users and knowledge producers are some of the challenges associated with assessing KT in Brazil. This lack of communication represents an important limitation to the incorporation of scientific knowledge to health policies formulation and implementation process. In addition, adaptation of the research cycle to fit real-world timelines, establishing relationships with decision-makers, and justifying activities that fit poorly with traditional academic performance expectations are some of the challenges associated with KT that researchers face (Mitton et al., 2007). In the same way, these authors pointed out that lack of funding, time, and resources to participate in KT activities are frequently mentioned as barriers to policy-makers and researchers (Haynes et al., 2018; Mitton et al., 2007; Potvin et al., 2003). Nevertheless, there are effective mechanisms provided by the knowledge translation process that can reduce the challenges to the application and dissemination of this practice in public health outcomes. They are:

i. joint researchers-decision-makers workshops where knowledge producers and knowledge users can work together and share their preoccupations with the audience they want to reach;

ii. inclusion of decision-makers in the research process as part of interdisciplinary research teams (Mitton et al., 2007);

iii. a collaborative definition of research questions so that collaboration can nurture the interest of knowledge users in the KT process increasing the sense of belonging and responsibility in both parties (Mitton et al., 2007);

iv. use of intermediaries, known as "knowledge brokers," which are people or organizations who know how to facilitate and support changes, and understand both the roles of knowledge producers and users (Neal et al., 2021; Ward et al., 2009b);

v. use of policy briefs, summaries of health information, to help stakeholders understand a health issue (Dagenais & Ridde, 2018);

vi. KT plans to help researchers and stakeholders organize a practical and evidence-informed method to disseminate and implement knowledge (Tchameni Ngamo et al., 2016);

vii. deliberative dialogue, a face-to-face technique in which small groups of diverse stakeholders exchange ideas about a health issue in which they have a shared interest (Mc Sween-Cadieux et al., 2018).

All these factors are not engineering mechanisms. They are social actions requiring a conceptual tool to inform and understand what should be translated, for whom, how, and in what context.

Thus, to propose a conceptual KT tool to the Brazilian context, the KT plan developed by the Québec Public Health Institute/*Institut national de santé publique du Québec* (INSPQ) was used to analyze the actions and practices of knowledge producers and knowledge users in the PDTSP-*Teias* network. The INSPQ KT plan will be presented in detail in the next chapter.

Chapter 2 – Theoretical Framework

2.1. The Quebec Public Health Institute (INSPQ) Knowledge Translation Plan

2.1.1. What is Known About the INSQP KT Plan?

The INSPQ knowledge translation (KT) plan was published in 2016 by a group of researchers from the Quebec Public Health Institute/*Institut national de santé publique du Québec* (INSPQ) and the RENARD Research Team/*L'équipe de recherche en partenariat RENARD* (ÉQUIPE RENARD) of the *Université de Montréal*, Canada. The INSPQ is a major public health reference in Quebec and the rest of Canada (INSPQ, 2019) and the RENARD team is the first Quebec transdisciplinary group devoted to KT research in the field of social interventions (Équipe RENARD, 2019).

This plan was developed drawing on various scientific and gray literature sources, including the INSPQ reference document entitled Facilitating a Knowledge Translation Process/*Animer un processus de transfert des connaissances* (Tchameni Ngamo et al., 2016). In this reference document, KT "knowledge translation refers to the group of activities and interaction mechanisms that foster the dissemination, adoption and appropriation of the most up-to-date knowledge possible to allow for its use in professional practice and in health management" (Lemire et al., 2013, p. 7). The KT process involves several stages, each of which has its consistency and objectives. These stages allow a better understanding of the issues, challenges, and the most appropriate KT strategies according to the objectives and the role of each of the key actors involved (Lemire et al., 2013).

In 2010, the INSPQ launched an organization-wide project to systematize its KT practices. Between 2012 and 2013, the dimensions' operationalization was assessed in a mixed-methods case study of 14 projects developed at the INSPQ. All 14 projects were evaluated for dimensions integration using a contextualized analytical tool and data from interviews with the KT project coordinators (Tchameni Ngamo et al., 2016). The most recent literature on conceptual KT tools was reviewed to enhance the KT plan and develop a more generic methodological instrument

that accurately reflected recent KT advances. The INSPQ study showed that with proper support (periodic consultation and ongoing guidance, methodological development, and training), conceptual KT tools could help clarify KT-related choices and serve as project management tools (Tchameni Ngamo et al., 2016).

With that in mind, the INSPQ KT plan proposes eight dimensions:

i. D1 Context Analysis and User's Needs,
ii. D2 Knowledge to be Translated,
iii. D3 Knowledge Users,
iv. D4 KT Partners,
v. D5 KT Strategies,
vi. D6 Overall KT Approach,
vii. D7 KT Evaluation, and
viii. D8 Resources (see Figure 4).

Some of these dimensions refer to the KT process (analysis of context and users' needs, knowledge users, KT partners, KT strategies). Other dimensions guide KT principles (interaction with users, integrated KT approach). Besides, some dimensions are conditions required to produce KT (leadership, resources, and evaluation) (Tchameni Ngamo et al., 2016). The INSPQ study showed that none of the eight dimensions was perfectly integrated into all the projects. This was probably due to the wide variety of mandates, projects, and contexts within which the teams worked. Their results showed that some dimensions are more accessible or harder to integrate, depending on the project's evolution. The dimensions D1, D2, D4, D5, and, to a lesser degree, D6 were well integrated into more than 70% of the INSPQ projects. The dimensions D3, D7, and D8 seemed harder to integrate into the projects (Tchameni Ngamo et al., 2016).

This plan of translating knowledge into practices might be referred to as the theory-based model presented by Clavier and colleagues (2012). For these authors, the translation process implies

three significant practices: **cognitive practices** (how research questions, knowledge processes, and research contents are produced and circulate between all partners), **strategic practices** (tools and skills to maintain alignment of partners interest in the research, and the balance of power among participants), and **logistic practices** (hands-on coordination tasks) (Clavier et al., 2012). Knowledge production, circulation, and use do not occur in an expected and chronological order, since "there is no simple algorithm that would guide as to how to act in connecting actants in the network" (de Leeuw et al., 2008, p. 8). KT is a process that requires several iterations and the evolution of the KT projects (Lemire et al., 2013; Prihodova et al., 2019; Tchameni Ngamo et al., 2016). For example, for Tchameni Ngamo and colleagues (2016), the KT evaluation should be planned at the beginning of a KT project as a monitoring process (Tchameni Ngamo et al., 2016).

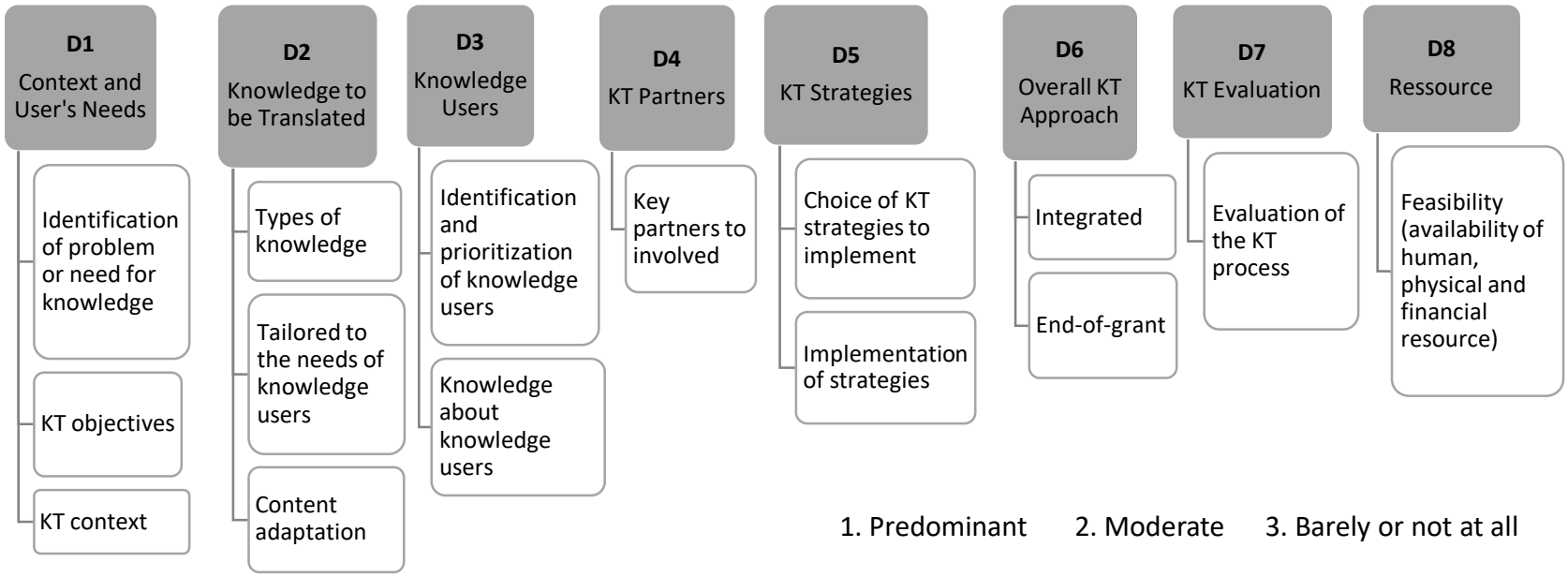

Figure 4: Dimensions of the INSPQ KT Plan

2.1.2 Limitations of the INSPQ KT Plan

The INSPQ study and, consequently, the INSPQ knowledge translation (KT) plan have some limitations. The KT plan was implemented only inside the organization. In qualitative studies, it is hard to generalize observations from a single case study. As such, the INSPQ findings are presented as paths for reflection and require further investigation. For example, this plan does not mention equity, social justice, or any similar concept, which are crucial concepts to health promotion (Davison & National Collaborating Centre for Determinants of Health, 2013).

Another limitation of the INSPQ study is the fact that it describes the projects at a given time (2012-2013). Between the time when the INSPQ KT plan was developed and the present, the dimensions have most certainly evolved, and the challenges to their implementation may have changed. More specifically, there is a lack of information about measuring the barriers and facilitators of the KT strategies in each context. Lastly, there is also a lack of attention to multisectoral approaches.

The INSPQ KT plan can help guide KT to support action on health promotion and health equity; however, there is a need to further develop and test this plan.

2.2. Why the INSPQ KT Plan?

As mentioned, the INSPQ KT plan can help support health promotion actions, especially in Brazil. In this sense, this plan was chosen because of the eight KT dimensions selected and the way its use can be measured. The classification of the dimensions as 1. Predominant, 2. Moderate, and 3. Barely or Not at all is straightforward. This classification can also help understand if the projects used and Integrated KT approach or an End-of-grant KT approach. For example, projects that applied most of the dimensions predominantly could be projects that use an integrated KT approach. Conversely, projects that applied most the dimensions moderately or barely could be projects using an End-of-grant KT approach.

The INSPQ KT plan also corroborates with the theory-based model presented by Clavier and colleagues (2012). The eight dimensions can be classified as cognitive practices (D1 to D3), strategic practices (D4 to D6), and logistic practices (D7 and D8). Besides, the INSPQ KT plan can promote the participation of knowledge users, and it is also sensitive to contextual factors, which are crucial KT dimensions if knowledge producers want to support action on health promotion and health equity.

2.2.1. The Relevance of the INSPQ KT Plan to the Brazilian Context

The complex nature of knowledge translation (KT) practices challenges current trends and invites new orientations and the formulation of new research techniques. In this regard, it is necessary to preserve the KT process's flexibility, allowing the adaptation and recreation of conceptual tools in different contexts. While there have been many publications on conceptual models for KT, the evaluations have primarily occurred for evidence-based medical practice in high-income countries (Davison & National Collaborating Centre for Determinants of Health, 2013). Thus, KT conceptual tools have significant potential to inform action to address Brazil's health promotion issues.

To this end, the INSPQ KT plan analyzed recent scientific and gray literature about KT planning and models in Canada and the United States, summarizing the knowledge obtained from 250 documents (Tchameni Ngamo et al., 2016). The eight dimensions highlighted in the plan corroborate with the recent literature about conceptual KT tools, including the dimension about knowledge users and evaluation of KT practices, which are relevant to the Brazilian context (Graham et al., 2006a; Prihodova et al., 2019; Sudsawad, 2007).

In addition, the INSPQ study's findings remain to be confirmed by further research (Tchameni Ngamo et al., 2016). Therefore, it is expected that other dimensions will be more easily incorporated in different contexts. Given that all dimensions are critical, improving those that appear more challenging to integrate needs to be clarified in another context. However, KT tools, such as a KT planning template and training, can help knowledge producers and knowledge users implement all the dimensions.

Likewise, the INSPQ KT plan could allow the evaluation of the PDTSP-*Teias* KT practices critically. It allowed the Ph. D. candidate to connect with existing knowledge about KT practices, guiding her to address why and how questions. The INSPQ KT plan can also allow the transition from merely describing the KT process to generalizing various aspects of the KT practices developed by the PDTSP-*Teias* network. Lastly, the INSQP KT plan could help define which key variables influenced KT practices in the PDTSP-*Teias* network, highlighting the need to examine how those key variables changed and under what circumstances (Figure 5).

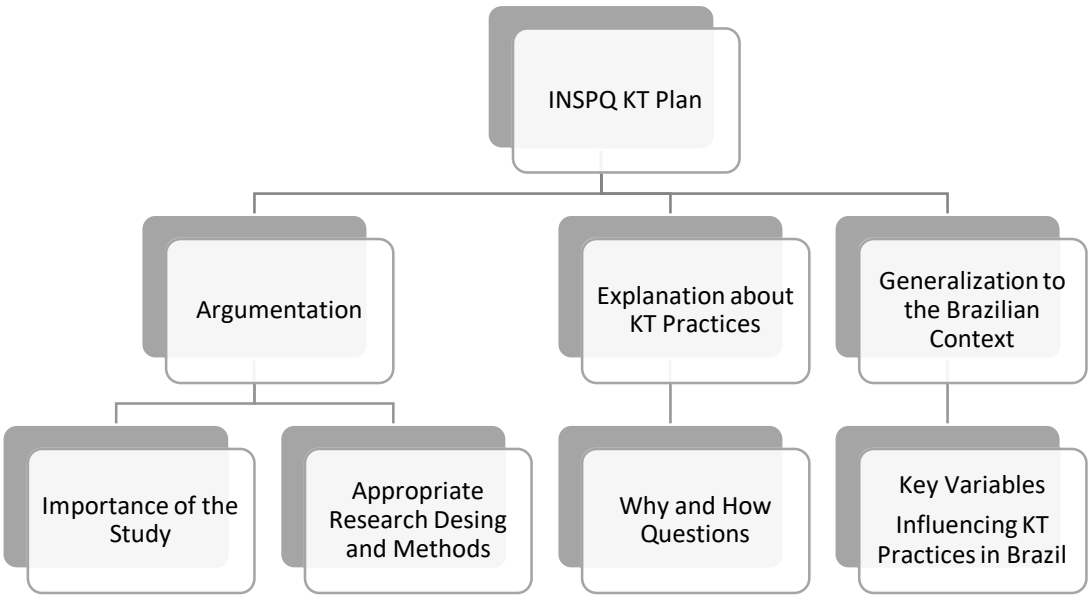

Figure 5: Theoretical Framework

Chapter 3 – Study Context and Objectives

3.1. Study Context

3.1.1. Contextualization of the Program of Development and Technological Innovation in Public Health

The Program of Development and Technological Innovation in Public Health/*Programa de Desenvolvimento e Inovação Tecnológica em Saúde Pública* (PDTSP) was an initiative developed in the Manguinhos area.

The PDTSP was created in 2002. It was proposed by the Presidency of the Oswaldo Cruz Foundation (Fiocruz) and approved by its Board of Directors in 2001 and plenary sessions of the IV and V Internal Congresses, in 2002 and 2005 (VPPLR-Fiocruz, no date). The general objective of the PDTSP was to foster research and development aimed mostly at technological innovation in public health to improve the performance of the Unified Health System/*Sistema Único de Saúde* (SUS). The PDTSP was designed to develop technologies, tools, and mechanisms suitable to the Brazil's health system at the federal, state, and local levels (Buss, 2016). With the creation of the PDTSP, the presidency of Fiocruz sought to change the misleading image that Fiocruz did excellent scientific research but did little in the technological field to satisfy the needs of Brazil's health system (Buss, 2016). To this end, the following networks were created: the PDTSP-Dengue network (2002-2008, with 30 projects), the PDTSP-SUS network (2004-2008, with 24 projects), Campus Fiocruz *Mata Atlântica* network (2005-2010, with one project), Healthy Cities network: health, environment and development (2007 - 2010, with six projects), Clinical Research network (2012-present, with 60 clinical research groups), and the PDTSP-*Teias* network (2010-2013, with 14 projects). The evaluation of the PDTSP-Dengue and PDTSP-SUS networks showed that results were mainly made up of several relevant instruments for use in different aspects of public health (manuals, guides, booklets, games, information systems, and websites), but with a modest translation to the SUS (VPPLR-Fiocruz, no date).

3.1.1.1. PDTSP-*Teias* Network and Working Method

In 2009, Fiocruz took over the management of primary care in Manguinhos. As a result, the PDTSP program was reformulated in 2009 based on an evaluation that found that the PDTSP projects' results were not easily incorporated into the SUS services. The evaluation found that there was:

i. limited participation of managers and other SUS workers in the development of the projects,

ii. short term and limited financial resources for the implementation of the projects,

iii. lack of project management and human resources, and

iv. limited evaluation of the project's results (Santos et al., 2016; Santos & Goldstein, 2016).

Thus, the PDTSP-*Teias* network, coordinated by the PDTSP, was proposed by the Presidency of the Fiocruz and approved by the institution's Board of Directors (Santos & Goldstein, 2016). This research network aimed to promote health intervention research in Manguinhos to improve local health conditions (Santos et al., 2016). The strategy was designed to support, organize and structure integrated public health research and technological innovation projects for the Manguinhos community, where the Fiocruz headquarters are located (Santos et al., 2016). The PDTSP-*Teias* network was also known as the Collaborative Research Network, consisting of several groups of researchers from different Fiocruz units - contributing to greater integration within and between Fiocruz units - and partners from other health and educational institutions (Santos et al., 2016).

As it was a pioneering and new experience at Fiocruz, the research network's formation and the network's activities were a science management innovation (Santos et al., 2016). The central idea of the PDTSP-*Teias* network was to encourage, integrate, and promote research that developed techniques, methods, and work processes that could be replicated in other areas. This could generate concrete products and actions to the SUS management and improve people's lives (Santos et al., 2016). In the PDTSP-*Teias* network, a research and innovation component in health was associated with the practices of promotion, prevention, and health care (Santos et al., 2016). This network was expected to produce real changes in the health care model's reorganization and

practical improvements in the health conditions and quality of life for Manguinhos residents (Santos et al., 2016). It was a way for the Fiocruz to invest in knowledge translation (KT). In this sense, the PDTSP-*Teias* network's plan moved away from the model of research funding agencies, avoided competitive bids, and encouraged partnerships between researchers, health professionals, managers, and communities. The management model's application turned the management, planning, financing, execution, monitoring, evaluation, and publication of research results into collective processes (Santos et al., 2016).

The PDTSP-*Teias* network started in 2010 with an Open Call to Fiocruz researchers. The management model of the PDTSP-*Teias* network played the facilitating role of a steering committee, which was created in June 2010. Initially, the steering committee was composed of managers from Fiocruz and the Rio de Janeiro Municipal Health Secretariat. In August 2011, the steering committee was restructured to include the heads of the Family Health Clinic, community agents, and scientific consultants with expertise in the areas covered by the research groups of the PDTSP-*Teias* network. The steering committee, the PDTSP management team, the PDTSP-*Teias* management committee, and Fiocruz's Strategic Planning Directorate (DIPLAN) also engaged in joint work (Santos et al., 2016).

In response to the Open Call, the PDTSP-*Teias* management committee received proposals from 34 groups of researchers. After the PDTSP-*Teias* management committee's first meeting, it was agreed that networking would need collaborative action and that the final product should be a collective project, resulting from the collaborative work of the participating research teams. The decisions on the progress of the PDTSP-*Teias* network were agreed in meetings with all network participants. The decisions were recorded in memos sent by email to all research proposal coordinators and steering committee members. Researchers were always encouraged to participate in monthly meetings to discuss proposals, identify interfaces between groups and research, overlaps, convergences, and find possible internal or external participants with related experiences (Santos et al., 2016).

In joint collaboration between the steering committee, the PDTSP management team, the PDTSP-*Teias* management team, the Fiocruz Strategic Planning Directorate (DIPLAN) and the research

groups of the PDTSP-*Teias* network, the social network theoretical model, based on the Social Network Analysis methodology, was adopted as the methodological approach of the PDTSP-*Teias* network (Santos et al., 2016). One concern expressed by the PDTSP-*Teias* network's steering committee was to ensure that research activities in Manguinhos were not invasive and repetitive. They wanted to recognize the support, wisdom, and experience of the residents of the local community. As a result, the PDTSP-*Teias* network steering committee encouraged the creation of a group of researchers who worked directly in social participation activities. The groups were divided according to themes, i.e., coordination of meetings with Manguinhos residents, coordination of thematic activities of the PDTSP-*Teias* network, dissemination of information about the research by the PDTSP-*Teias* network (Santos et al., 2016).

In 2011, the PDTSP-*Teias* network research groups were reorganized into the following reference areas:

i. Field Research – coordinating the Survey on Health Conditions and Use of Health Services in Manguinhos.

ii. Information and Geoprocessing - organizing the different information required by researchers from the PDTSP-*Teias* network and geoprocessing activities of the information generated by the field research.

iii. Social Participation - articulating the activities and events related to social participation with the different actors and researchers from the PDTSP-*Teias* network, organising activities to meet the real needs found in Manguinhos.

iv. Health Care – developing activities with managers and health professionals from the PDTSP-*Teias* network and working with the healthcare organization's conception of the work process flows, protocols, and clinical guidelines (Santos et al., 2016).

After rearranging the reference areas, revising the work methods and the products, the research groups reorganized themselves. Some researchers reviewed their availability or the suitability of the proposal and left the PDTSP-*Teias* network. Others clustered. Thus, the PDTSP-*Teias* network

went from 34 proposed projects to 14 projects teams. These teams remained in the PDTSP-*Teias* network until their formal closure in December 2012 (Santos et al., 2016).

In the following years, the research teams continued to develop collective products from the PDTSP-*Teias* network. Some projects were implemented after the PDTSP-*Teias* network was closed. They include:

i. the evaluation of the PDTSP-*Teias* network management committee (Figueiró et al., 2016),

ii. the dissemination of the survey results on living conditions and access to health in Manguinhos (publicly accessible via the Informatics Department of the Unified Health System (Datasus),

iii. the databases in the Manguinhos Health Survey incorporated in the Primary Care Information System (2013-2015),

iv. the publication of the Research Network Portfolio in Manguinhos (Rabello & Soares Santos, 2015), and

v. the publication of the book on the research trajectory of the PDTSP-*Teias* network (Santos et al., 2016).

The PDTSP-*Teias* network sought to develop and evaluate experiences in order to constitute a model of integrated health care management in Manguinhos (ENSP, no date; Informe ENSP, 2016). The approach used in the PDTSP-*Teias* network had three primary purposes: the formulation of public policies, a systemic look at the problems, and the involvement of communities (ENSP, no date; Informe ENSP, 2016). According to the PDTSP-*Teias* network management committee, the most significant contribution of this experience was "the cooperative articulation between researchers from various Fiocruz units, enabling the integration of work proposals, [as well as] the institutionalization of activities and products" (ENSP, no date, p. 1). There was also transparency in the preparation process, methodology, and results. The PDTSP-*Teias* network provided a collective effort to address the health needs of the population of Manguinhos (ENSP, no date; Informe ENSP, 2016). The PDTSP-*Teias* projects shared funding and objectives. This entailed the challenge of working with different research groups on different

interdisciplinary projects (Informe ENSP, 2016). The PDTSP-*Teias* network linked academy, health services, and civil society groups in a strategy that presented research projects that were adjusted to the original idea of the PDTSP (Buss, 2016).

3.1.1.2. Financing of Projects and use of Resources

After the organization of the working groups of the PDTSP-*Teias* network, the financing of projects started. The resources were decentralized according to each activity's demand, aiming at the rational use of financial resources. As an example of rational use of resources, the equipment that was requested by more than one research group was acquired by Fiocruz and shared alternatively by the various groups; and Fiocruz units also provided equipment whenever possible (Santos et al., 2016).

Given the need for several research groups to carry out field research to collect primary data, the PDTSP-*Teias* network management committee proposed the elaboration of a questionnaire with all the information necessary for the various studies. This questionnaire was composed of questions tested and validated by the Brazilian Institute of Geography and Statistics and the National Health Survey, and applied to Manguinhos (Santos et al., 2016).

3.2. Objectives

3.2.1. General Objectives

This thesis's main objectives are to understand knowledge translation (KT) in different research projects and management practices and propose a KT roadmap adapted to the Brazilian context.

3.2.2. Specific Objectives

i. Describe three projects as examples of three different modalities of KT,

ii. Perform a *post hoc* analysis of KT actions and strategies implemented by three projects of the PDTSP-*Teias* network embracing the period from 2009 to 2013, and

iii. Verify how participation in the PDTSP-*Teias* network facilitated KT between knowledge producers and knowledge users.

Chapter 4 – Methods

4.1. Research Design

4.1.1. Research Questions

With the objectives of this thesis in mind, the following research questions were asked:

i. What KT approaches did the PDTSP-*Teias* network adopt?

ii. What KT actions and strategies did the three projects of the PDTSP-*Teias* network implement?

iii. How did participation in the PDTSP-*Teias* network facilitate KT between knowledge users and knowledge producers?

4.1.2. The Strategy of Inquiry: Multiple Case Study

A retrospective qualitative multiple case study design was used to achieve the main objective of this thesis. A qualitative multiple case study is an approach to research that facilitates analyzing a complex social phenomenon within its context using different data sources (Baxter & Jack, 2008; Flyvbjerg, 2006; Willis, 2007; Yin, 2014). Case studies allow us to understand complex social phenomena while preserving the holistic and significant characteristics of real-life events (Yin, 2014). Due to its flexibility of planning, a case study stimulates new findings, emphasizes the multiple dimensions of a problem, and allows an in-depth analysis of the processes and relationships between them (Ventura, 2007). When it is methodologically well-conducted, the essence of a case study is to clarify a set of decisions: the reason they were made, the conditions under which they were made, how they were implemented, and what results were obtained (Silva, 2007). The multiple cases were used to understand differences and similarities between the cases, analyzing the data both within each situation, and across situations (Gustafsson, 2017; Yin, 2014). The knowledge translation practices of the PDTSP-*Teias* network were the phenomenon under study. The period under review was from 2009 to 2013. Hence, this thesis is

a qualitative multiple case study involving the PDTSP-*Teias* network (with 14 projects), and the three projects selected.

4.2. Research Object

According to the Interdisciplinary Research Group on Qualitative Methods, “the research object derives from a researcher's interest" (Groupe de recherche interdisciplinaire sur les méthodes qualitatives, 1997, p. 91). In some cases, the researcher wants “to know to modify” or wants “to know to know better” (Groupe de recherche interdisciplinaire sur les méthodes qualitatives, 1997, p. 92). In this thesis, the researcher's object of interest is the knowledge translation practices carried out by the PDTSP-*Teias* network. The goal here is to understand the knowledge translation practices in order “to know better” about knowledge translation in the Brazilian context, especially since Brazil is the researcher's birthplace. I have been interested in health promotion and health education for over ten years, deepening my interest in knowledge translation practice. In this context, I chose to analyze the interactions between knowledge producers and knowledge users in the PDTSP-*Teias* network in order to adapt the INSPQ KT plan to the Brazilian context.

4.2.1. The Selection of the Three Cases

For this study's purpose, three PDTSP-*Teias* network’s projects (CASE 1, CASE 2, and CASE 3) were selected. The choice was based on Patton’s classification of purposeful sampling methods in which exemplar cases were selected to maximize information (Patton, 1999, 2014). To decide which projects to choose, we met with two former coordinators of the PDTSP-*Teias* network. The PDTSP-*Teias* network included 14 research teams who remained in the network from 2009 until its formal closure in December 2012 (Santos et al., 2016). For this study, we selected three research teams to systematize knowledge translation practices. The inclusion criteria were a) the project team had to hold regular meetings and collaborate with knowledge producers and knowledge users, and b) the project team had to regularly participate in meetings of the PDTSP-*Teias* network. Projects with only the participation of knowledge producers and projects without regular participation of the research team in the PDTSP-*Teias* network were excluded. To decide

which cases to choose, I met with the two coordinators of the PDTSP-*Teias* network. We stipulated that selected projects should include a minimum of three participants, including at least one knowledge producer and one knowledge user.

The three cases selected were investigated to provide valuable information about the network and not just a comparison between the projects. These three cases were selected to maximize information, i.e. each case represented the best possible example of knowledge translation of either one of three KT approaches out of the 14 PDTSP-*Teias* projects. CASE 1 represented a KT integrated approach involving knowledge users as equal partners with knowledge producers, CASE 2 represented a combination of two approaches (Integrated KT and End-of-grant), and CASE 3 represented an End-of-grant approach involving any activity aimed at diffusing, disseminating, or applying research results. Each case made it possible to explore the different stages or levels of development of KT practices, which proved to be adequate after the analysis of the categories.

Once a final decision was made on participating projects, I recruited knowledge producers and knowledge users from the selected projects. Recruitment was made by phone and email. We contacted the former's coordinators of the PDTSP-*Teias* network, and a former research assistant. They were accommodating in providing the latest books, reports, and documents of the program. They also helped us during the recruitment, providing us a letter of support and the list of knowledge producers and knowledge users who participated in the network. These three projects were used to provide valuable insights into the PDTSP-*Teias* network and not merely as a means to compare projects.

4.2.1.1. The Three Cases

4.2.1.1.a. CASE 1: Knowledge Production, Circulation, and Appropriation for Health Promotion and Environmental Justice

The objective of this study was to develop a comprehensive understanding of health problems in the Manguinhos area. It was developed by the Territorial Laboratory of Manguinhos/Laboratório Territorial de Manguinhos (LTM), and the briefcase of work - Recognizing Manguinhos - was one of its KT results. This briefcase had KT strategies of production, circulation, and appropriation of

knowledge on health and the environment. This case was selected because of its predominantly integrated KT approach, and its mixed use of the integrated and End-of-grant approaches.

4.2.1.1.b. CASE 2: Model of Pharmaceutical Services to Patients with Diabetes mellitus

This study's primary purpose was to identify guidelines for better pharmaceutical services organization in the Manguinhos area. It was a collaboration between pharmacists, primary care users, and a multidisciplinary team providing a range of opportunities to improve the health conditions of the Manguinhos population (Luiza et al., 2016). This case was selected because of its mixed use of both KT approaches (Integrated and End-of-grant), with the End-of-grant approach's predominance.

4.2.1.1.c. CASE 3: Contributions to a Socio-Environmental Diagnosis in Manguinhos

This study's main purpose was to analyze the work processes related to the preparation and development of the research project entitled "Environmental Diagnosis of Manguinhos" (Abreu Bruno et al., 2016). This study was a qualitative and quantitative exploratory research project. This case was selected because of its predominantly End-of-grant approach.

4.2.2. Operationalization of the INSPQ KT Plan

To understand the knowledge translation (KT) practices and their impact on practice in Brazil, the interactions between knowledge producers and knowledge users in the PDTSP-*Teias* network were analyzed. The goal was to understand how KT was conducted within the PDTSP-*Teias* network and to observe how the participation in the PDTSP-*Teias* network facilitated knowledge translation. The KT plan developed by the Quebec Public Health Institute/*Institut national de santé publique du Québec* (INSPQ) was used to analyze knowledge producers and knowledge users' actions and practices (Table 2).

4.2.2.1. Analytical Dimensions

It was essential to understand the knowledge translation strategies and actions deployed in the three cases to perform a retrospective analysis of the knowledge translation process implemented in all three projects by the PDTSP-*Teias* network from 2009 to 2013. In this sense,

the analysis of the semi-structured interviews, focus group, and documents highlighted the logic underlying the discourse of the knowledge producers and knowledge users who participated in the PDTSP-*Teias* network.

Table 2: INSPQ KT Plan and the Operationalization Framework

Dimensions	Criterion
D1. Analysis of the Context and User's Needs **Analysis of the Context:** Factors linked to the knowledge to be translated Factors linked to actors Factors linked to organizational characteristics **Analysis of User's Needs:** Upstream from the project During the project After the knowledge has been produced After the knowledge products are developed	**Identification of the Problem or the Need for Knowledge** Predominantly: The problem or the need for knowledge led to the KT process to be verified among knowledge users. Moderately: The knowledge producers identified the problem or the need for knowledge. Hardly or not at all: The problem or the need for knowledge was not identified. **KT Objectives** Predominantly: The general KT objective is defined from the project's viewpoint that it is intended to support. Moderately: The general KT objective is defined but not linked to the project intended to support it. Hardly or not at all: The general KT objective is not defined or specified. **KT Context** Predominantly: KT opportunities and obstacles were analyzed, and mechanisms/solutions were identified. Moderately: KT opportunities and obstacles were analyzed, but the corresponding mechanisms/solutions were not identified yet. Hardly or not at all: The plan does not include an analysis of the KT context.
D2. Knowledge to be Translated **Types of knowledge:** Research-based knowledge Tacit knowledge Knowledge derived from data analyses	**Types of Knowledge** Predominantly: The KT process is based on the four main types of knowledge: research-based knowledge, tacit knowledge, knowledge derived from data analyses, and knowledge from users/clients. Moderately: The KT process is based on two of the four main types of knowledge. Hardly or not at all: The KT process is based on one primary type of knowledge. **Fits with Knowledge User's Needs** Predominantly: The knowledge to be produced or translated fully satisfies the users' need(s) for knowledge. Moderately: The knowledge to be produced or translated partially satisfies the users' need(s) for knowledge. Hardly or not at all: The knowledge to be produced or translated does not satisfy the users' need(s) for knowledge or may do so, but the needs are not explicitly identified. **Content Adaptation**

	Predominantly: Measures are planned to make the content clear, accessible, and useful to knowledge users. Moderately: There is an intention to make the content clear, accessible, and useful to knowledge users, but no measures are planned. Hardly or not at all: No effort has been made, and there is no intention to make the content clear, accessible, and useful to knowledge users.
D3. Knowledge Users Media General public	**Identification and Prioritization of Knowledge Users** Predominantly: The different knowledge users to be reached have been identified and classified by priority. Moderately: The different knowledge users to be reached have been identified but have not been classified by priority. Hardly or not at all: The different knowledge users to be reached have not been identified. **Knowledge about the Knowledge Users** Predominantly: The preferences and characteristics of the knowledge users have been described in detail. Moderately: The preferences and characteristics of the knowledge users have been identified in a general way. Hardly or not at all: The preferences and characteristics of the knowledge users have not been identified.
D4. KT Partners Key actors who should be involved in the KT process	**Key Actors** (individuals, groups, organizations, and networks) to be involved. Predominantly: All actors concerned by the KT process (partners, intermediaries, potential opponents) have been identified and their roles defined. Moderately: The actors concerned by the process have been identified, but their roles have not been defined. Hardly or not at all: The actors concerned by the process have not been identified.
D5. KT Strategies Appropriate KT strategies need to be selected following the overall objectives of the KT process Approaches that combine more than one KT strategy are recommended	**Choice of KT Strategies to be Implemented** Predominantly: The strategies selected are consistent with the objectives identified. Moderately: Most of the strategies selected are consistent with the objectives identified. Hardly or not at all: The selected strategies are hardly or not consistent with the objectives identified. **Multiple Interventions** Predominantly: The project is based on multiple interventions that combine dissemination and uptake/appropriation strategies. Moderately: The project is based on multiple interventions that focus mainly on a single type of strategy (dissemination or uptake/appropriation). Hardly or not at all: The project is not based on multiple interventions. **Implementation of the Strategies**

	Predominantly: The implementation stages for all the KT strategies are presented in detail, and monitoring mechanisms are planned to ensure they are carried out. Moderately: The implementation stages for at least one KT strategy are presented in detail, and monitoring mechanisms are planned to ensure it is carried out. Hardly or not at all: The implementation stages for the KT strategies and monitoring mechanisms are not presented in the project.
D6. Overall KT Approach KT Integrated (co-constructing knowledge with users) KT End-of-grant (diffusion, dissemination, or application of research results often in the early stage of discovery)	**Integrated KT Approach** Predominantly: The KT plan begins at the knowledge production stage and considers knowledge users' needs and context throughout the project. Moderately: The KT plan begins after the knowledge has been produced but considers the needs and the context of knowledge users. Hardly or not at all: KT plan begins after the knowledge has been produced and does not consider the knowledge users' needs and context. **End-of-Grant Approach** Predominantly: The approach fosters ongoing interaction between knowledge producers and knowledge users. Moderately: The approach fosters occasional interaction between knowledge producers and knowledge users. Hardly or not at all: The approach hardly fosters or does not at all foster interaction between knowledge producers and knowledge users.
D7. KT Evaluation Evaluating the KT process and the impacts of the knowledge translated in terms of its use and repercussions at the scientific, professional, organizational, and socio-political levels	**Evaluation of the KT Process** Predominantly: The project calls for ongoing evaluation of the KT process and adjustments during implementation. Moderately: The project calls for a few evaluation procedures (such as indicators), but the approach is not yet defined. Hardly or not at all: The project does not include any evaluation of the KT process.
D8. Resources Plan's feasibility or conditions required for its development and implementation	**Feasibility** (availability of human, physical and financial resources) Predominantly: Provision has been made for the resources (funding, staff, material, time) to carry out the project. Moderately: Provision has been made for resources to carry out the project, but they are deemed insufficient (e.g., their lack is identified as an obstacle in the context analysis). Hardly or not at all: The resources required to carry out the project are unavailable or not specified in the project.

4.2.3. Description of the Dimensions Observed

4.2.3.1. Dimension D1 - Analysis of the Context and User's Needs

For context analysis, consideration was given to:

i. the factors related to the researchers' previous knowledge about the Manguinhos area's reality and group expertise to develop knowledge translation practices,

ii. the characteristics of the actors (users, Manguinhos residents, health professionals, managers, researchers) regarding their involvement in the projects, and

iii. organizations, health services, the Fiocruz Foundation, associations, and other local services, concerning participation in projects, interests, and support.

Regarding the analysis of the user's needs, consideration was given to:

i. expected knowledge needs to address and delineate problems,

ii. users' interest and receptiveness to new knowledge,

iii. preferences regarding format and dissemination channels, and

iv. pre-testing knowledge products (Tchameni Ngamo et al., 2016).

As presented by Tchameni Ngamo and colleagues (2016), "contextual analysis involves examining any barriers and facilitators that may present obstacles or opportunities for knowledge translation (KT)" (Tchameni Ngamo et al., 2016, p. 3) as well as the analysis of users' needs. It involves surveying the intended knowledge users at different times in the KT process before, during, and after the project and products have been finished. These factors can be categorized as:

i. factors linked to the knowledge to be translated, i.e. matching knowledge produced to users' needs, clarity and accessibility of language, the applicability of knowledge;

ii. factors linked to actors (experience, credibility, interest in KT, openness, availability, motivation, attitude toward change); and

iii. factors linked to organizational characteristics (availability of resources, support from managers, political climate, economic situation) (Lemire et al., 2009; Tchameni Ngamo et al., 2016).

4.2.3.2. Dimension D2 – Knowledge to be Translated

For the knowledge to be translated, consideration was given to the types of knowledge suitable to public health actions, the fit between knowledge and user's needs, and the content adaptation required to make the knowledge clear, accessible, and useful to knowledge users (Tchameni Ngamo et al., 2016). Regarding public health research, Lemire and colleagues (2009) described three major categories of knowledge:

i. knowledge from research (often referred to as scientific knowledge),

ii. knowledge from tactics (knowledge of professionals with practical experiences),

iii. knowledge from data analysis (information to be transmitted in an appropriate form to stakeholders.

To these, a fourth one can be added:

iv. knowledge from users/clients.

These activities require action to articulate distinct interests, identify what is pertinent, for whom, and how to communicate the knowledge. Therefore, they will demand skill and tools from the research team and/or other partners and must be performed by a social actor able to do (Bernier et al., 2006; Clavier et al., 2012; de Leeuw et al., 2008).

4.2.3.3. Dimension D3 – Knowledge Users

In the case of knowledge users, the focus was on the identification and prioritization of knowledge users, and knowledge about the knowledge users (Tchameni Ngamo et al., 2016). For Tchameni Ngamo and colleagues (2016), this dimension is designed to verify if the different knowledge users to be reached were identified and classified a priori Besides, the dimension can verify if knowledge users' preferences and characteristics have been described in detail (Tchameni Ngamo et al., 2016). Examples of knowledge users and other audiences include the entire Manguinhos

community, health professionals, decision-makers, media, the general public, schools, teachers, policy-makers, research funders, patients and their caregivers, industry, as well as institutional/organizations (hospital, primary care clinics) (CIHR, 2016a).

Developing a context-sensitive approach is mandatory in participatory research, whose aim is to produce knowledge that makes sense for its intended users (Jull et al., 2017; Trickett, 2009). This means intently knowing where the research will occur, the target community, public services and professionals, social movements participants, and other interested parties. Thus, these social actors and the research team can build different and unexpected KT products relevant to the context (Mantoura et al., 2007; Weiner & McDonald, 2013).

4.2.3.4. Dimension D4 – KT Partners

The KT partners included social actors from different sectors (academic, government, health and social services network, media, and Manguinhos residents). These social actors could be individuals, groups, organizations, and networks, who could facilitate links with knowledge users (Tchameni Ngamo et al., 2016). According to Tchameni Ngamo and colleagues (2016), social actors involved in the KT process should be identified, and their roles clarified (Tchameni Ngamo et al., 2016). The role of each partner should be defined and clarified at the beginning of the partnership. Though, most of the time, each partner's role is negotiated between the partners, "often at the same time as the action is being planned and implemented" (Potvin & Clavier, 2013, p. 3).

To Potvin and Clavier (2013), four conditions support successful partnerships. First, the social actors present in the partnership represent all the different perspectives on the subject. Second, in addition to operational or tactical choices, members of the partnership are involved in strategic decision-making at an early stage. Third, the partnership members can influence the decision-making process within the partnership (their contribution goes beyond mere consultation). Lastly, key actors, without whom no action can be taken, and strategic actors who can displace other actors, are actively involved in the partnership (Potvin & Clavier, 2013).

4.2.3.5. Dimension D5 – KT Strategies

For KT strategies, consideration was given to appropriate KT strategies selected following the KT process's overall objective and the type of knowledge to be translated, the knowledge users to be reached, possible collaborations, and available resources. We verified whether the KT strategies implemented for each knowledge were identified:

i. determining the desired interaction level,

ii. assessing the value of involving an intermediary depending on the strategy chosen, building on existing strategies, and

iii. identifying the best time to implement it.

Knowledge translation (KT) strategies must be adjusted according to the type of knowledge to be translated, like research results, the consensus of experts, and analyzed data useful for planning. Also, KT strategies must consider the objectives to be achieved and the obstacles and factors that facilitate the use of each target audience's knowledge to reach, such as practitioners, managers, decision-makers, and the general public. Therefore, no proven KT strategy can work in all situations (Lemire et al., 2009, 2013).

4.2.3.6. Dimension D6 – Overall KT Approach

For the Overall KT approach, the types of KT approaches used in the three cases, and the PDTSP-*Teias* network were considered. There are two main types of KT approaches: Integrated and End-of-grant to the Canadian Institutes of Health Research. The Integrated approach involves co-constructing knowledge with users from the outset and throughout the research process, whereas the End-of-grant approach calls for diffusion, dissemination, and/or application of research results often in the early stage of discovery (CIHR, 2009b). Knowledge users and knowledge producers could be involved in developing targeted knowledge products and/or KT activities once the research process was completed (Tchameni Ngamo et al., 2016).

4.2.3.7. Dimension D7 – KT Evaluation

For the KT evaluation, the focus was on the evaluation of the KT process, and the impacts of the translated knowledge (in terms of its use, and repercussions at the scientific, professional, organizational and socio-political levels) by the three cases and the PDTSP-*Teias* network. The simple fact of getting involved in a project evaluation brings about changes in the ways knowledge producers and knowledge users think and act. The evaluation can positively affect research or the evaluated program (Lemire et al., 2009, 2013).

4.2.3.8. Dimension D8 – Resources

For resources, consideration was given to aspects related to the three cases and the PDTSP-*Teias* network's feasibility and/or the conditions required for its development and implementation. Some determinants linked to organizational characteristics can be obstacles to the KT practice; for example, an organizational culture that does not encourage research and innovation, the lack of time to review the literature, the lack of autonomy to adopt new knowledge, the lack of financial and human resources to apply it and resistance to change (Lemire et al., 2009, 2013).

4.3. Data Collection

4.3.1. Key Informants

Participants in the study were all members of the three cases. Participants in semi-structured face-to-face interviews were knowledge producers from the selected projects and the former coordinators of the PDTSP-*Teias* network (N=9). In the focus group, participants were knowledge users from selected projects (N=4 participants) (Table 3). The recruitment and access to the participants were facilitated by the former coordinators of the PDTSP-*Teias* network.

Nine out of 13 knowledge producers agreed to participate in the study. During the interviews with the knowledge producers, we received ten suggestions of possible knowledge users to contact. Unfortunately, we did not get phone and email details of five of them. Five out of five contacted knowledge users accepted to participate in the study. However, one knowledge user did not participate in the focus group due to conflicting time schedules. In sum, the study population was

composed of knowledge producers (N=9) and knowledge users (N=4) who had participated in the PDTSP-*Teias* network between 2009 and 2013.

Qualitative data can be "in-depth descriptions of circumstances, people, interactions, observed behaviors, events, attitudes, thoughts and beliefs and direct quotes from people who have experienced or are experiencing the phenomenon" (Srivastava & Thomson, 2009, p. 74). Therefore, data collection included the triangulation of document analysis, semi-structured face-to-face interviews, and a focus group. Data was gathered from January 2018 to August 2018.

Data from the interviews and the focus group were recorded and transcribed verbatim to QDA Miner (a qualitative data analysis computer software) for further codification and analysis.

4.3.2. Document Analysis

In the document analysis, we performed a *post hoc* systematization of the knowledge translation practices developed in the PDTSP-*Teias* network. In this case, we listed data and information for critical learning. First, a chronological framework of the documents was created. Second, a literature review was done with the texts produced by the program steering committee, official and unofficial, including books, minutes and meeting reports, management reports, promotional material, legislation, institutional documents, and scientific papers published in peer-reviewed journals. By conducting the documents' systematization, we identified how the knowledge translation process took place in the PDTSP-*Teias* network.

In the first-order analysis, the knowledge translation practices systematization in the PDTSP-*Teias* network was conducted based on a critical reflection and interpretation of lessons learned from the program (Nunes, 1992). This procedure included identifying, documenting, and transferring experiences and critical lessons extracted from the PDTSP-*Teias* network to advocate, learn, and replicate (Holliday, Oscar Jara, 2012).

Therefore, I used steps of the framework analysis (Figure 7). In the first step, I analyzed all the documents one by one in chronological order, from 2009 to 2013. Each year had a set of documents containing information about the PDTSP-*Teias* network in general and documents containing specific information about each case. Then, I selected the best information available

from emails, minutes of meetings, reports, books, scientific articles, publications resulting from seminars and lectures, project proposals, journalistic media, and curriculum vitae from the PDTSP-*Teias* network management team and the three cases.

In the second step, the documents were organized. All documents were filed and numbered in the same chronological order in distinct files called PDTSP-*Teias* network, CASE1, CASE2, and CASE3. A data inventory spreadsheet was created containing reference code, date, document title and description of each document used in the analysis (Annex E).

The third step was the application of the analytical structure and the graphic representation of the data in the framework matrix (Table 4). I created a separate framework matrix for the PDTSP-*Teias* network and another for each case. The readings and records on the framework matrix played a central role in this step. In addition to organizing the documents, I added notes, comments, and some transcribed elements from the documents in the matrix.

The last step was the interpretation of the data itself. The objective of the document analysis was to understand the structure and context of the PDTSP-*Teias* network and to understand the KT approaches used by each case in order to respond to the first objective of the thesis. Thus, in the framework matrix, I used the same eight KT dimensions of the INSPQ KT plan. I recorded the most important elements of each document in the framework matrix to analyse data from the PDTSP-*Teias* network, and I did the same for each case separately. This meant that I first analysed the documents of the PDTSP-*Teias* network to understand the structure, context, and management practices of the network. Then, I analysed each case separately to understand each case's KT approach. Finally, I was able to do a cross-case analysis (Tables 9-16) using data from the document analysis, interviews, and focus group to understand how the PDTSP-*Teias* network facilitated knowledge translation in Manguinhos.

4.3.3. Interviews

The interviews verified how participation in the PDTSP-*Teias* network facilitated knowledge translation between knowledge producers and knowledge users. In this case, an interview guide

was elaborated based on the systematization of the knowledge translation practices in the PDTSP-*Teias* network. It measured:

i. the impression of knowledge producers had about the PDTSP-*Teias* network as a facilitator of the knowledge translation practices,

ii. how knowledge producers perceived that the PDTSP-*Teias* network facilitated the knowledge translation process, and

iii. how knowledge producers understood the knowledge translation practices in the PDTSP-*Teias* network.

The interview guide addressed three sets of questions regarding the data collection instrument: project development, knowledge translation product elaboration, and interaction between knowledge producers and knowledge users (Appendix A).

I conducted all interviews. Each interview took an average of 80 minutes. Interviews were recorded and transcribed verbatim into QDA Miner. For further analysis, data were grouped and coded in themes and other emerging categories.

Participants were provided a recruitment letter (Appendix B) and a reminder by email, two weeks before the interviews, asking them if they still wanted to participate in the interview. The free and informed consent form (Appendix C) was sent by email one week before the interview, which I explained at the beginning of the interview.

4.3.4. Focus Group

Baribeau and Germain (2010) listed many labels for focus groups such as: structured and focused interview, focus group, group interview, focused/guided interview, discussion group, collective interview, and convergent discussion group (Baribeau & Germain, 2010). Some authors indicate that a focus group is a qualitative research technique resulting from a group interview, based on communication and interaction within the group (Morgan, 1997; Short, 2006). For Davila and Domíngues (2010), there is a difference between focus groups and discussion groups. To these authors, focus groups generally have an instrumental orientation, centred on obtaining data

while, in discussion groups, the orientation is more critical, focused on understanding ongoing social processes (Davila & Domínguez, 2010). In this thesis, the focus group had an instrumental orientation.

Thus, in the focus group, we analyzed how the PDTSP-*Teias* network influenced the translation of knowledge into practice. In this case, focus group questions and an observation form were elaborated based on document analyses and interviews. The same three sets of questions from the interview guide were used: project development, knowledge translation product elaboration, and interaction between knowledge producers and knowledge users. The focus group moderator (Ph.D. candidate) attempted "to generate a maximum number of different ideas and opinions from as many different people in the time allotted" (Eliot & Associates, 2005, p. 2). An observer was invited to register any further information necessary. At the end of the focus group, the moderator and observer met to compile information. It measured:

i. how knowledge users felt about the PDTSP-*Teias* network as a facilitator of the knowledge translation practices,

ii. how knowledge users perceived that the PDTSP-*Teias* network facilitated the knowledge translation process,

iii. how knowledge users understood the knowledge translation practices in the PDTSP-*Teias* network, and

iv. how participation in the PDTSP-*Teias* network changed the practice of knowledge users.

Focus group participants were selected using a snowball sampling recruitment technique (Naderifar et al., 2017). At the end of each interview I asked knowledge producers to assist me in identifying potential knowledge users to participate in the focus group. I received ten suggestions of possible knowledge users to contact. Unfortunately, phone and email contacts of five potential participants were not available. Five out of five contacted knowledge users accepted to participate in the study. However, one knowledge user did not participate in the focus group due to conflicting schedules.

The focus group lasted three hours. It was recorded and transcribed verbatim into QDA Miner. For further analysis, data were grouped and coded in themes and other emerging categories.

Participants were provided a recruitment letter (Appendix B) and a reminder by email, two weeks before the focus group, asking them if they still wanted to participate. The free and informed consent form (Appendix D) was sent by email one week before the focus group, and I explained it at the beginning of the group activity. Participants were also reminded of the confidentiality agreement they accepted and of their obligation not to disclose the other participants' identities and the nature of the conversations in which they took part to any third party not participating in the focus group.

4.3.5. Data Source

A data source tracking sheet was created to systematically record the data inventory and facilitate the citation reference (Appendix E). The list of documents analyzed by cases is as follows.

Table 3: Data Source

Data Source	**CASE 1**	**CASE 2**	**CASE 3**	**PDTSP-*Teias* network**
Book chapter	1 (22 pages)	1 (16 pages)	1 (16 pages)	--
Book	--	--	--	1 (337 pages)
Scientific papers	1 (14 pages)	--	--	
Online media			2 (7 pages)	
Portfolio	N/A	N/A	N/A	1 (19 pages)
Letter of intent	2 (9 pages)	2 (6 pages)	2 (8 pages)	N/A
Commitment term	1 (3 pages)	1 (3 pages)	1 (3 pages)	--
PowerPoint presentation		1 (20 slides)	1 (23 slides)	
Working group presentation	--	--	--	6 (25 pages)
Workshop report	--	--	--	2 (30 pages)
Research protocol	1 (10 pages)	1 (5 pages)	1 (9 pages)	--
Partial report		1 (26 pages)	1 (26 pages)	--
Final report		1 (35 pages)	1 (34 pages)	--
Workshop on research, innovation and knowledge management	1 (4 pages)	1	2 (8 pages)	
General documents 2009	0	0	0	0
General documents 2010 (Meeting reports, spreadsheets)	N/A	N/A	N/A	31 (135 pages)
General documents 2011 (Meeting reports, spreadsheets)	N/A	N/A	N/A	13 (42 pages)
General documents 2012	N/A	N/A	N/A	5 (26 pages)

Data Source	**CASE 1**	**CASE 2**	**CASE 3**	**PDTSP-*Teias* network**
(Meeting reports, spreadsheets)				
General documents 2013 (Meeting reports, spreadsheets)	N/A	N/A	N/A	7 (155 pages)
Interviews with key informants - knowledge producers	N=3 (62 pages)	N=2 (32 pages)	N=1 (17 pages)	N=3 (83 pages)
Focus Group with key informants - knowledge users (48 pages)	N=3	N=1	N=0	N=0

4.4. Data Analysis

In the second-order analysis, recurrent themes were identified. Then, patterns in the data were recognized. Lastly, a sequence of events was analyzed (Nigatu Haregu, 2009) (Figure 6). As data analysis is circular and non-linear and iterative and progressive, the INSPQ KT plan guided us to structure, label, and define our data. At the beginning of the analysis, codes were inductively developed, which was more open-ended and exploratory. Deductive coding was also included later in the analysis. To assess this study's reliability, a second researcher reviewed all interviews codded and added to the framework matrix (Table 4) and validated whether the information corroborated or not with the dimensions of the INSPQ KT plan. The second researcher was very knowledgeable about the structure of the PDTSP-*Teias* network and the history of the three selected cases, which was important for the validation of the codes. When the two researchers began to agree on their interpretations, the validation was completed. By this approach, the second researcher validated the coding of dimensions D1 to D5 only. It was not necessary to validate dimensions D6 to D8.

The framework analysis was chosen to achieve the systematization of the data. The framework analysis provided clear steps to follow and produced structured ways to summarize it. It was appropriate for analyzing the textual data, the interview transcripts, comparing and contrasting the data by themes across the three cases, and situating them in the context (Gale et al., 2013).

Qualitative analysis necessarily involves writing at three levels: transcription (moving from audio recording to interview transcripts, from observation to field notes), transposition (annotation of the corpus and all forms of meaning tests), and rebuilding (writing the report) (Colin, 2012).

The most important and delicate task of qualitative analysis is at the transposition stage, which covers all the operations to move from unexplored material to detailed analysis (Colin, 2012). The transposition step can be broken down into three operations:

i. ownership, which consists of appropriating material from abroad (the set of processes include examining data, articulating these data with each other, and/or concerning

interpretative referents, to arrive at a horizon of understanding). The goal is to reach an understanding, targeted or not, of the analyzed material;

ii. deconstruction, which aims to go beyond strict phenomenological or descriptive considerations. The deconstruction of the material takes place, in the form of selection and storage (always textual) of relevant data, which are essential functions of the orientation of the investigation in progress; and

iii. reconstruction, i.e. a synthetic assembly effort signifying data relating to a phenomenon that will take various forms: typology, groupings, and thematic overlaps, and modelizations. The reconstruction becomes recontextualization when the isolated data are reported to the respective contexts that have brought them (Colin, 2012).

Figure 6: The Process of Data Analysis

4.4.1. Data Analysis and Interpretation

4.4.1.1. Approaches in the Data Analysis

A deductive-inductive approach to the data analysis was used in order to combine the two. This was done by deductively using the pre-existing theoretical dimensions of the INSPQ KT plan, then revising the INSPQ KT plan with inductive aspects to identify new themes in the data (Gale et al., 2013; Nigatu Haregu, 2009).

4.4.1.2. Framework Analysis

In the face of enormous quantity and variety of versions of the same phenomenon, it is up to the researcher to seek a better way to organize and interpret the phenomenon. For this study, the framework analysis was chosen. The framework analysis provided simple steps to follow and

producing structured results from data (Gale et al., 2013). As noted by Gale and colleagues (2013), the framework analysis procedure consists of seven steps (Figure 7).

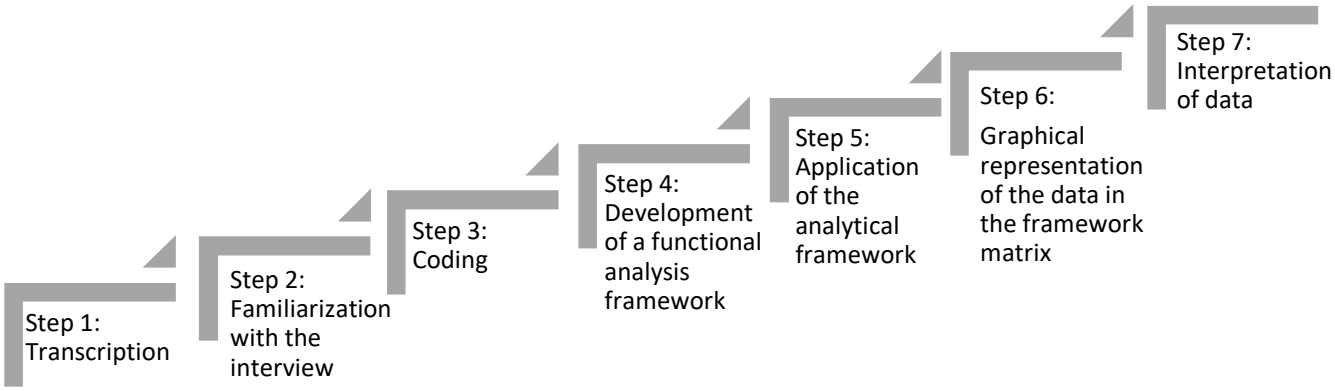

Figure 7: Seven Steps of the Framework Analysis

A social science researcher was invited to minimize the subjective interpretation of the qualitative analysis. The invited researcher was a former coordination assistant of the PDTSP-*Teias* network. She validated the coding process and the identification of themes and patterns.

For the document analysis, texts produced by the steering committee, and institutional documents of Fiocruz were analyzed. The data were analyzed using the framework analysis, with the completion of successive readings to identify themes foreseen in the analysis categories. All the data collected from interviews, a focus group, and documents were reviewed to construct a framework matrix of information about the three cases and the PDTSP-*Teias* network knowledge translation practices. I carefully read and re-read each transcript and listened again to the audio-taped interviews to become aware of the whole data set. After the familiarization with the interviews and documents, data were coded. A framework matrix was developed based on the INSPQ KT plan (Table 2). A matrix is a method of summarizing and analyzing qualitative data in a table of rows and columns. It allowed sorting data by theme and cross-case as well (Gale et al., 2013). In a separate computer file, interesting ideas, concepts, and potential themes were written in an analytic memo. The data was then discussed with the two research advisors, and the social scientist invited to participate in the framework analysis.

Table 4: Framework Matrix

D1 - Analysis of Context (barriers/facilitators) and Users' Needs		
Definition: Contextual analysis involves examining any barriers and facilitators that may present obstacles or opportunities for KT. The analysis of users' needs involves surveying the intended knowledge users at different times in the KT process: **1. upstream from the project**, to define the knowledge needs to be satisfied and to delineate the problem **2. during the project**, to verify the users' interest and receptiveness to new knowledge **3. after the knowledge has been produced**, to identify any preferences regarding format and dissemination channels to be used **4. after the knowledge products are developed**, to pre-test it		
Analytical Description		
Case 1	Case 2	Case 3
D2 - Knowledge to be Translated		
Definition: This dimension refers to the three main types of knowledge that can be useful for public health action: 1. Research-based knowledge (research and evaluation results) 2. Tacit knowledge (intervention, management) 3. Knowledge derived from data analyses, administrative data, and data on population health status and well-being 4. Fit between knowledge and users' needs and the content adaptation required to make the knowledge clear, accessible and useful, and 5. Knowledge from users		
Analytical Description		
Case 1	Case 2	Case 3
D3 - Knowledge Users		
Definition: This dimension refers to identifying, knowing about and setting priorities among potential users of the knowledge and other audiences, e.g., media, general public.		
Analytical Description		
Case 1	Case 2	Case 3
D4 - KT Partners		
Definition: Key actors who should be involved in the KT process need to be identified, and their roles clarified. These are any individuals, groups, organizations, or networks that might facilitate links with knowledge users. These actors may come from different sectors (academic, government, health, and social services network, other areas of activity, the media, the general public). They may participate in the production, dissemination, and use of knowledge.		
Analytical Description		
Case 1	Case 2	Case 3
D5 - KT Strategies		
Definition: Appropriate KT strategies need to be selected following the KT process's overall objective and the type of knowledge to be translated, knowledge users to be reached, possible collaborations, and available resources. The KT strategies to be implemented for each knowledge user should be identified by: • determining the desired interaction level,		

- assessing the value of involving an intermediary depending on the strategy chosen,
- building on existing strategies, and
- identifying the best time to implement it.

Approaches that combine more than one KT strategy (multiple interventions) are recommended.

Analytical Description

Case 1	Case 2	Case 3

D6 - Overall KT Approach

Definition: Broadly speaking, there are two main types of approaches to KT: integrated and End-of-grant. The integrated approach involves co-constructing knowledge with users from the outset and throughout the research process. In contrast, the End-of-grant approach calls for diffusion, dissemination, or application of research results often in the early discovery stage. Users and researchers may be involved in the development of targeted knowledge products or KT activities once the research process is completed.

Analytical Description

Case 1	Case 2	Case 3

D7 - KT Evaluation

Definition: This dimension refers to evaluating the KT process and the impacts of the knowledge being translated in terms of its use and repercussions at the scientific, professional, organizational, and socio-political levels.

Analytical Description

Case 1	Case 2	Case 3

D8 - Resources

Definition: This dimension has to do with different aspects of the KT plan's feasibility or the conditions required for its development and implementation.

Analytical Description

Case 1	Case 2	Case 3

4.5. Summary of Methods

Table 5 presents the methods summary.

Table 5: Summary of Methods

Object of Study	Data Analysis and Interpretation	Aspects Observed	Expected Outcomes
Documents	Systematization	Process of knowledge translation in the PDTSP-*Teias* network	Systematization of the knowledge translation process in the PDTSP-*Teias n*etwork

			KT roadmap - Framework to guide the semi-structured interviews
Interviews	Semi-structured face-to-face interviews with knowledge producers, and PDTSP-*Teias* network's coordinators (N=9)	Projects of the PDTSP-*Teias* network to verify how participation in the PDTSP-*Teias* Network facilitated knowledge translation.	Understanding how participation in the socio-technical network facilitated knowledge translation between knowledge producers and knowledge users
Focus group	Focus group with knowledge users (N=4 participants)	The translation of evidence into practice	Understanding how participation in the socio-technical network facilitated the knowledge translation process

4.6. Limitations and Researcher's Posture

The method adopted in this thesis is based on qualitative research. One of the most frequent qualitative research limitations is related to the representativeness of individual speech to a broader collective (Minayo & Sanches, 1993). However, the analysis of words and situations expressed by key informants does not remain only at the individual level. Intersubjective understanding requires immersion in shared meanings (Minayo & Sanches, 1993). With the support of the framework analysis, I understood the language and the typical situation of the network participants, responding to the traditional qualitative research questions. As a result, the candidate could also predict the participants' responses with a certain degree of probability (Minayo & Sanches, 1993).

Setting up a group according to the focus group technique was a challenge because of the lack of significant participation of knowledge users in the three cases and the difficulty in obtaining telephone or email contact information of some knowledge users. Due to these difficulties, I was able to create only one focus group. However, the use of the focus group in combination with other primary data collection techniques was valuable (Santos et al., 2020; Trad, 2009). In this thesis, the focus group approach was applied after the interviews as a complementary technique. If more knowledge users had participated in the focus group, I could have obtained a better understanding of the perceptions of knowledge users about the PDTSP-*Teias* network and KT concepts.

As in all research methodologies, one critical aspect is the power relationship between researchers, interviewers, and data collected. The interaction between the researcher, key informants, and data was based on a process of reflexivity and transparency (Boutilier & Mason, 2006; Tremblay et al., 2014). In health promotion research and interventions, reflexivity should be part of each step of the project to integrate theory and practice (Boutilier & Mason, 2006). Also, the Ph. D. candidate's position was to observe the knowledge translation practices in the PDTSP-*Teias* network in order to understand its process.

The credibility of the researcher is essential in a qualitative research study. For the Ph. D. candidate to have credibility with the key informants she had to be impartial, reflective, and transparent. Research advisers oversaw researcher bias reduction (Moravcsik, 2014). The whole data gathering process, theoretical framework, and methods were conceived in ways to allow other researchers to replicate the study, thus ensuring transparency.

Besides, the method worked well with knowledge users and knowledge producers. They were aware of the PDTSP-*Teias* network process. They all held key position or were actively involved in the network, facilitating understanding of PDTSP-*Teias* network knowledge translation practices.

4.7. Ethical Review

Two different ethics committees approved this study. The first was the Health Research Ethics Committee/*Comité d'éthique de recherche en santé, CERES* of the *Université de Montréal* on July 31, 2017 (certificate number 17-110-CERES-D). The second was the Research Ethics Committee/*Comitê de Ética em Pesquisa* (CEP/ENSP) of the National School of Public Health in Brazil (certificate number CAAE 73680717.5.0000.5240) (Appendix F).

To ensure all documents were protected, and the key informants' confidentiality was preserved, the following steps were applied:

i. all copies of field materials were kept in a secure location,

ii. all documents were safeguarded by password, and the interviews were alphanumerically coded,

iii. transcripts of notes and any other documentation that may contain identifying information were secured by password in a different location, and

iv. all digital data were encrypted and password-protected.

In the focus group section, I asked all participants to respect each other's privacy by not sharing the information outside the meetings. Days before the focus group meeting, informed consent was sent by email to each person willing to participate in the focus group. On the day of the meeting, it was emphasized that it was paramount to safeguard each participant's privacy and show each other respect. Participants were also reminded of the confidentiality agreement they accepted and of their obligation not to disclose the other participants' identities and the nature of the conversations in which they took part to any third party not participating in the focus group.

This study's ethical essence was guaranteed by insisting on respect for human dignity, respect for each person, concern for participants' well-being, and fair treatment.

Chapter 5 – Results

This chapter will be divided into three parts. The first part will present the results related to the first objective of the thesis, which was to describe three projects as examples of three different modalities of knowledge translation. The second part will present the results related to the second objective of the thesis, which was to perform a *post hoc* analysis of KT actions and strategies implemented by three projects of the PDTSP-*Teias* network embracing the period from 2009 to 2013. The last part will present the results related to the third objective of the thesis, which was to verify how participation in the PDTSP-*Teias* network facilitated knowledge translation between knowledge producers and knowledge users.

5.1. Objective 1. Case Presentation

This section presents the results related to the first objective of the thesis, describing three projects as examples of three different modalities of knowledge translation.

5.1.1. CASE 1 - Team

The lead researcher-coordinator of this PDTSP-*Teias* network project holds a degree in Industrial Chemistry and a Master's Degree in Chemistry (Inorganic Analytical Chemistry). She was a Ph.D. student in Public Health at the National School of Public Health (ENSP-Fiocruz). Her experience in the area of public health began in the field of occupational and environmental health, mainly in occupational health surveillance. She is currently involved in the theoretical and methodological development of health promotion in the "Manguinhos Territorial Laboratory (LTM) project" (CV4). The second CASE 1 researcher-coordinator holds a degree in History, as well as a Master and a Ph.D. in Education. She is a researcher at the ENSP-Fiocruz. She has a background in history and education, centered in the history of urban slums, popular education, and health education. She is currently involved in research in the following areas: health education, community health, mental health in vulnerable territories, slums and social memory, and participatory methodologies applied to slums and vulnerable territories (CV5).

The CASE 1 team consisted of the lead research-coordinator, one researcher-coordinator from the Social Sciences Department/National School of Public Health (DCS/ENSP), one researcher-coordinator from the Center for Occupational Health and Human Ecology Studies / National School of Public Health (CESTEH/ENSP), one researcher-coordinator from the Joaquim Venâncio Polytechnic School of Health (EPSJV/LABOFORM), one research from the Sanitation and Environmental Health Department/National School of Public Health (DSSA/ENSP), six part-time workers, mostly Manguinhos residents, and one research assistant (Letter of Interest 3).

5.1.1.1. CASE 1 – Objective of the Project Presented to the PDTSP-*Teias* Network

Title of the project: Knowledge production, circulation, and appropriation for health promotion and environmental justice.

In the PDTSP-*Teias* network, the team proposed the project entitled "Knowledge production, circulation, and appropriation for health promotion and environmental justice." Its initial objective was to develop a comprehensive understanding of health problems in Manguinhos. It was developed by the Manguinhos Territorial Laboratory (LTM). The entire CASE 1 team was a member of the LTM, working simultaneously in various projects, including the project presented in the PDTSP-*Teias* network. The LTM team sought to contribute to the development of health promotion based on primary care, emancipatory, and practical care in real places where life happens (Pivetta et al., 2016).

The LTM has been operating in Manguinhos since 2003, producing, and disseminating knowledge about health, environment, and public policies among various social actors (Pivetta et al., 2016). Throughout this period, the LTM team tried to engage in dialogue with the Manguinhos residents – a complex of 15 *favelas* in the northern part of Rio de Janeiro - as a research and action front (Zancan et al., 2014). To interact on permanent basis with the residents, the team applied diverse strategies:

i. fieldwork - interviews, and filming floods and sanitation,

ii. memory workshops - for young and older adults, focusing on education and culture,

iii. seminars about youth and *favela* life,

iv. science fair - focusing on environmental education and health promotion in order to mobilize students and teachers,

v. territorial identification workshops with health agents,

vi. training of instructors, and

vii. validation of a gamebook with teachers and young students from the Manguinhos area.

Through partnerships, project collaborations, participation in seminars, and in "hall conversations," the LTM team was always in contact with colleagues from the Oswaldo Cruz Foundation (Fiocruz) and other institutions working in the health services (Pivetta et al., 2016). From then on, the LTM team created the first expanded community of action research at Fiocruz. This community consisted of researchers from Fiocruz and Manguinhos residents involved in social movements (Pivetta et al., 2016).

In 2009, a research group from the LTM team joined the PDTSP-*Teias* network. In 2010, when the PDTSP-*Teias* network started to develop the network projects, the CASE 1 team expected to have some challenges, such as:

i. Participation of the residents in daily institutional activities - they argued that they should receive scholarships. They wanted capacity building processes for residents, but they did not have institutional guarantees of scholarships for them.

ii. The violence of the drug trafficking and the State's security apparatus could hinder the free movement of residents, researchers, and professionals in the Manguinhos area, making it difficult to establish the necessary trust relationships for collaborative work.

iii. Accessibility to the project - which means, facilitating the access of Manguinhos residents who were considered by the team as "slaves of needs," these needs limited their accessibility for participation in projects and programs. And also, researchers in situations of "slaves of bureaucracies" (eternal search for financing for their projects) (Pivetta et al., 2010).

However, the CASE 1 team had some motivations to participate in PDTSP-*Teias* network:

i. fulfil the historical commitments of collective health and the Unified Health System (SUS),

ii. integrate an agenda of health promotion and health care for a socially just society, and

iii. incorporate the dimension of environmental sustainability, which is inevitable in all societies' contemporary agenda (Pivetta et al., 2010).

The CASE 1 team believed that the PDTSP-*Teias* network would turn the shared production of knowledge and information into a path towards participatory management at Fiocruz and Manguinhos making the intersectoriality and interdisciplinarity a new model of knowledge management and public policy, which would serve as a model for other regions of Brazil (Pivetta et al., 2010).

The action research approach guided the work of the CASE 1 team. Intending to rehearse new languages to produce and circulate knowledge and information about health, the team spoke regularly with health professionals and Manguinhos residents. In this perspective, the team sought "to explain not only the determinants of health but also the practice of those who experience it" (Pivetta et al., 2016, p. 210). In this sense, the CASE 1 team proposes an emancipatory health promotion approach. According to Zancan and colleagues (2014), emancipatory health promotion is a dialectical process focused on the production of knowledge and practices. For the team, "this process favors the construction of spaces for achieving freedom, reducing socio-environmental vulnerabilities and exercising fundamental human rights" (Pivetta et al., 2016, p. 212; Zancan et al., 2014). The emancipatory health promotion aims at the shared construction of knowledge and the exchange of ideas of the socio-environmental and health problems of a given context, to transform public policies and institutional practices (Zancan et al., 2014). According to Pivetta et al., “content and language are central elements for the emancipatory health promotion” (Pivetta et al., 2016, p. 217).

5.1.1.2. CASE 1 - Knowledge Translation Products

5.1.1.2.1. Briefcase: A Territory in Motion

In 2010 each project participating in the PDTSP-*Teias* network agreed to create a knowledge translation product. According to the PDTSP-*Teias* network coordinators, projects should generate concrete products and actions as a return for Brazil's Unique Health System (Santos et al., 2016). Thus, CASE 1 proposed to finish the products that were part of the "LTM Briefcase of work." Some of the Briefcase products needed to be finalized or edited. As such, the CASE 1 team knowledge translation product was developed with financial resources from the LTM and the PDTSP-*Teias* network (Pivetta et al., 2016).

The "Briefcase of work: Recognizing Manguinhos" was one of the results of the experiences of production, circulation, and appropriation of knowledge about health and the environment. Another result of the Briefcase was the production of a gamebook about tuberculosis addressed to young people. This gamebook allowed young people to relate to this health problem with social determinants of health (Pivetta et al., 2016).

According to CASE 1, to understand the Manguinhos Area and its vulnerabilities, injustices, and potentialities, the following themes were addressed in the Briefcase: floods, public policies, the Growth Acceleration Plan, housing, life stories and memories of Manguinhos residents. As pointed by Pivetta and colleagues (2016) point out, “in seeking to understand Manguinhos in its multiple territorialities we have been producing knowledge on themes related to the history of formation and memory of communities, processes of change and their impacts on the environment and people's health” (Pivetta et al., 2016, p. 218). The themes, contents, and formats of the materials were defined by the broader community of action research (from Portuguese: *Comunidade Ampliada de Pesquisa-Ação*) based on problem situations experienced by knowledge producers and knowledge users. For the team, each problem situation become a generating theme, and each material produced was a path - a method of shared knowledge production (Pivetta et al., 2016). The Briefcase synthesized the collaboration between knowledge users and knowledge producers, which was the materialization of the knowledge produced and the mediation for learning. It was a tangible link between the LTM team and the residents of

Manguinhos (Pivetta et al., 2016). The Briefcase offered more than health information. It placed the residents of Manguinhos in their history and that of the city of Rio de Janeiro. It helped them understand how positive and negative transformations occurred, and how their consequences impacted on people's lives and the ecosystems of Manguinhos.

The list of products proposed and developed in the Briefcase is shown in Table 6.

Table 6: List of Products Proposed and Developed by CASE 1 Team

LTM Briefcase: A Territory in Motion				
Themes	**Materials**	**Title**	**Authors**	**Objectives**
Stories and memories of Manguinhos	Documentary	Manguinhos: stories of people and places	Tania Fernandes Renato Gama-Rosa Costa	1) Situate the Manguinhos of today in its history and that of the city 2) Understand how the transformations occurred; the factors that had significant positive and negative changes; their consequences on the life of the people of Manguinhos and its ecosystems
	Cordel (*Cordel* literature are famous poems, songs, and booklets produced and sold in street markets, mostly in Northeast Brazil)	*Manguinhos em prosa e verso* (Manguinhos in prose and verse)		
	Book	History of people and places: memories of the communities of Manguinhos		
Territory, environment, and health: floods, ecosystem, and tuberculosis	Slideshow	Mangue, Manguinhos, Manguezal	Unavailable	Compare, through photographic images, Manguinhos - a neighborhood built on a terraced mangrove, completely degraded, with the environmental preservation area of Guapimirim-RJ, a preserved mangrove area.
	Gamebook about tuberculosis (2009)	Territory, health, and environment	A community of action research in tuberculosis (CAP-TB) that included researchers, young Manguinhos residents (fellows of the LTM), professionals from the *Germano Sinval Farias* School Health Center (physicians and family health teams,	1) Disseminate information about tuberculosis to the population of Manguinhos; 2) Relate the tuberculosis problem to social determinants of health

LTM Briefcase: A Territory in Motion				
Themes	**Materials**	**Title**	**Authors**	**Objectives**
			researchers in community health education, and Manguinhos residents who had already had tuberculosis)	
	Annual calendar[4] (2012)	Floods in Manguinhos: Does this problem have a solution?	Unavailable	Community health workers can use the calendar to schedule visits and to talk about floods, highlighting probable rainy seasons, preventive actions, useful telephone numbers, and first aid.
	Booklet	Recognizing Manguinhos: Briefcase	Unavailable	Present methodological suggestions for the use of the materials giving autonomy to the toolbox
	Role-Playing Game (RPG)[5]	Territory, health, and environment: the mysterious cough	Researchers from LTM and collaborators from other Fiocruz projects	Discuss the living conditions and processes of the social determinants of health, as well as the resources and services available and necessary for coping

[4] The annual calendar presents an explanatory cycle of flood production and its consequences on the life and health of the people of Manguinhos.

[5] The Role-Playing Game (RPG) text was created by the LTM team. Each scene was developed by at least two people, playing, and creating descriptions and dialogues. The illustration process was carried out by the LTM audiovisual group that brought together the residents of Manguinhos as "actor-characters" to produce the photo-novel. Researchers from Fiocruz also collaborated on the photos-characters (Pivetta et al. 2016).

5.1.2. CASE 2 - Team

The lead CASE 2 researcher-coordinator has a Ph.D. in Public Health from the National School of Public Health/Fiocruz and a postdoctoral degree from Harvard University. She has coordinated research projects on topics such as access to medicines, health evaluation, pharmaceutical care evaluation, and primary health care in Brazil, Latin American and African countries. She works in the area of public health, with emphasis on pharmaceutical assistance and drug policy, centered on the following areas: pharmaceutical assistance, rational use of medicines, medicine policy, health evaluation, access to medicines, hospital pharmacy, drug use, health management, HIV/AIDS, and essential medicines (CV3).

The CASE 2 team consisted of the lead research-coordinator; one pharmaceutical technologist responsible for the *Germano Sinval Faria* School Health Center (CSEGSF/Fiocruz) pharmacy, two pharmaceutical care researchers, one pharmaceutical technologist responsible for the National Institute of Infectology (IPEC/Fiocruz) pharmacy, one pharmaceutical scholar, and one intern (Letter of Interest 2).

5.1.2.1. CASE 2 – Objective of the Project Presented to the PDTSP-*Teias* Network

Title of the Project: Model of Pharmaceutical Services to Patients with *Diabetes mellitus*: Dispensing and Pharmacotherapeutic Monitoring.

In the PDTSP-*Teias* network, the team proposed the project entitled “Model of pharmaceutical services to patients with *Diabetes mellitus*: dispensing and pharmacotherapeutic monitoring." The primary purpose of this study was to identify guidelines for a better pharmaceutical services organization in Manguinhos. It involved collaboration between pharmacists, primary care users, and a multidisciplinary team, providing a range of opportunities to improve the population's health conditions in the area where they operated (Luiza et al., 2016). This study saw the participation of three healthcare centers in the Manguinhos area: the *Germano Sinval Faria* Health School Center, the Victor Valla Family Health Clinic, and the Manguinhos Emergency Care Unit.

The project aimed to identify models that already existed in Brazil and similar places. The research team wanted to increase the control of *Diabetes mellitus,* increase adherence to treatment, and support continuity of treatment throughout care levels (Proposal Letter 1). Interviews were conducted with managers, physicians, nurses, pharmacists, and community health agents involved in the care of people with *Diabetes mellitus* in Manguinhos (Luiza et al., 2016b). The team also held a workshop with managers, pharmacists from the Manguinhos health unit, and representatives of the population, to collectively design a final proposal, the monitoring indicators and the results for the implementation evaluation (Luiza et al., 2016b). The workshops with health professionals from the Manguinhos area aimed to collectively formulate a set of general and specific recommendations for pharmaceutical services in primary health care in the Manguinhos area. This workshop was based on an executive summary with the results of the previous steps (Luiza et al., 2016b).

5.1.2.2. CASE 2 - Knowledge Translation Products

In 2010, when the PDTSP-*Teias* network started to develop network projects, the research team proposed to develop products to improve the quality of the SUS, such as

i. a patient profile study,

ii. a pilot model,

iii. the final model proposal, including monitoring indicators, and

iv. a book chapter.

The list of products proposed and developed by CASE 2 are in Table 7.

Table 7: List of Products Proposed and Developed by CASE 2 Team

Activities Proposed	Activities Developed
Model mapping: literature review and site visits Need assessment	One partial report in the 1st year from the beginning of the project
Pilot project development and implementation	The pilot model implemented at the end of the 18th month of the project
Intervention model implementation	Full model, including monitoring indicators at the end of the 2nd year of the project
Model evaluation and adjustments Elaboration of the main product (manual and materials of interaction with SUS users and community)	Manual of implementation of pharmaceutical assistance to patients presented at the end of the 3rd year of the project

5.1.3. CASE 3 - Team

The lead CASE 3 researcher-coordinator has a Bachelor's Degree in History, a Master's Degree in Education, and a Ph.D. in Sciences from the Oswaldo Cruz Institute/Fiocruz. He works in the field of public health and the environment with Amazonian indigenous communities and in *favelas* in the city of Rio de Janeiro. His areas of interest are the educational processes in health, health and the environment in the Amazon, urban popular movements, and education and environmental health (CV1).

The second CASE 3 researcher-coordinator has a degree in Chemical Engineering, a Master's Degree, and a doctorate in Public Health from Fiocruz. She has experience in public health with emphasis on environmental sanitation, centered on the following areas: management of contaminated areas, environmental and human health risk assessment, environmental sanitation, and contamination of soil by hazardous waste (CV2).

The CASE 3 team consisted of two researcher-coordinators, a project management analyst, a dengue monitoring axis analyst, a participatory management axis coordinator (communication and information), a general support officer, a solid waste axis analyst, a local strategic analyst, a researcher dengue monitoring axis coordination, a general coordination technologist, research

assistants, and a research scholar to coordinate the participatory management axis (Letter of interest 1). Some of the research team participants were Manguinhos residents and took part in action planning and data collection and analysis (Abreu Bruno et al., 2016). The research assistants recognized the conditions of the field activities and surveyed information related to the study's configuration, which included bibliographic and documentary research about the communities and the Manguinhos refinery (Abreu Bruno et al., 2016). According to Abreu and colleagues (2016):

> "This team met regularly to discuss the research project, in a routine that favored its integration, the understanding of the study as a whole and, above all, stimulated the interventions of its members. It was such a way that these meetings constituted a political-pedagogical process that facilitated the group's performance. This process included theoretical and practical classes on sample collection and processing methods and procedures, understanding of the use of the Geographic Information System (GIS) and laboratory analysis processes" (Abreu Bruno et al., 2016, p. 234).

5.1.3.1. CASE 3 – Objective of the Project Presented to the PDTSP-*Teias* Network

Title of the project: Contributions to a Socio-Environmental Diagnosis in Manguinhos.

In the PDTSP-*Teias* network, the team proposed the project entitled “Contributions to a socio-environmental diagnosis in Manguinhos." This study's primary purpose was to analyze the work processes related to the preparation and development of the research project "Environmental Diagnosis of Manguinhos" (Abreu Bruno et al., 2016). This study entailed qualitative and quantitative exploratory research. The bibliographic and documentary research used for the description of the study area addressed:

i. the historical formation of Manguinhos,

ii. the geographical features (location, geology, hydrology, and hydrography),

iii. socioeconomic and demographic status,

iv. health status, and

v. information about the location of research (land use and occupation, local environmental pollution processes) (Abreu Bruno et al., 2016).

The quantitative method was used to analyze soil samples, assess the presence of contaminants, and estimate their spatial distribution (Abreu Bruno et al., 2016). The project's initial proposal was to come up with a health diagnosis (identification of causes) of the Manguinhos area. The planned intervention sought to change the reality observed conditions through action research, by examining the habits and hygiene of Manguinhos residents, while simultaneously promoting hygiene-related values and information in the community and changing people's behavior. To achieve these goals, the research team proposed to draw thematic maps and write scientific articles, as knowledge translation products. To develop the products, the initial research team included project coordinators, a team of technicians (Fiocruz employees), a team of Manguinhos residents' part-time workers, and consulting partners from other Fiocruz units. According to the research team, stakeholder participation included meetings and project development, reports elaboration, sample analysis stage, and updating Manguinhos information. The target audience was the Manguinhos community, health, and education professionals working in Manguinhos and health managers. Through product development, the research team intended to broaden and deepen the knowledge of topics, not in the team's domain and develop a language that facilitated the communication of research results (KTPlan 1). To the research team, the most appropriate format for translating knowledge for the target audience was through reports, scientific articles, teaching materials, and conversation rounds with the Manguinhos residents. Printed materials and the Facebook account promoted all the products. Opportunities to share knowledge were provided by meetings with local health councils and other community councils.

5.1.3.2. CASE 3 - Knowledge Translation Products

In 2010, when the PDTSP-*Teias* network started to develop the network projects, the research team expected to encounter some challenges that could limit the KT effectiveness, such as the historical relationship between the Manguinhos community and Fiocruz with the regular absence of solutions to local problems, and projects discontinuity. The research team identified some ways to reduce these challenges by discussing and assessing them, identifying and characterizing them,

and highlighting the institutional policies that would ensure project continuity and dialogue with the Manguinhos community (KTPlan 1).

As in CASE 1 and CASE 2, the research team proposed to develop products to improve the quality of the SUS, through

i. the socio-environmental diagnosis related to the solid waste problem in Manguinhos,
ii. establishing local participatory spaces,
iii. developing a strategy for environmental monitoring in vulnerable areas,
iv. writing scientific papers,
v. producing educational materials, and
vi. a book chapter (Abreu Bruno et al., 2016).

The list of products proposed and developed by CASE 3 is in Table 8.

Table 8: List of Products Proposed and Developed by CASE 3 Team

Activities Proposed	**Activities Developed**
Seminar on participative management of the *Teias* network	It became a cycle of 3 meetings
Information and communication training for participatory management	30 people qualified 1 online working group
Bi-monthly newsletter on participatory management and intersectoriality in Manguinhos	9,500 copies distributed
Website maintenance on participatory management and intersectoriality in Manguinhos	No information
Video about health and environment in Manguinhos	1 video produced
Promotion of meetings in local venues	Bi-monthly meetings held
Workshops about the participative management in the *Teias* network, with managers and workers	2 workshops held
Setting up and maintaining community Internet access points at the family clinics (partnership with another project)	2 points set up
The debate about the national solid waste policy proposed by the federal government in August 2010	1 event held
Survey of community initiatives related to solid waste management	Elaboration of a catalog
Training of local agents to collect data and records of actions based on geo-referenced and audiovisual data	Ten agents were trained
Coordination of intersectoral actions with community associations, social movement forum, schools, residents, and public agencies	Intersectoral network created
Local plan proposal	Achieved

Activities Proposed	Activities Developed
Dissemination and coordination of the plan with public agencies and local social actors	Achieved
Implantation and monitoring of traps for dengue vector control	Achieved
Mapping and survey of trapping points	Achieved
Educational actions at trapping points, aimed at disseminating data and mobilizing the local population	Achieved

5.2. Objective 2. Retrospective Analysis of Knowledge Translation

This section presents results related to the second objective of the thesis, which is to perform a *post hoc* analysis of knowledge translation actions and strategies implemented as part of three projects of the PDTSP-*Teias* network embracing the period from 2009 to 2013. Results will be presented in accordance with the dimensions proposed in the INSPQ KT plan.

5.2.1. Dimension 1 – Analysis of the Context and Users' Needs

5.2.1.1 Dimension 1 Highlights

- All three cases presented KT objectives based on the analysis of context and users' needs. The three cases teams worked in different public health areas such as knowledge production, circulation and appropriation for health promotion, pharmaceutical services to patients with *Diabetes mellitus*, and environmental health. Thus, KT objectives varied among the three cases. CASE 1 team was focused on co-constructing knowledge with knowledge users using a new health promotion approach. CASE 2 team focused on making the team's productions more widely known, influential, and useful through interactions with the knowledge users via appropriate channels such as individual meetings with patients and health workers. The CASE 3 team was focused on creating a process to support and facilitate the use of research results by Manguinhos residents.

- Concerning specific objectives, the CASE 1 team defined the specific objectives for each of the knowledge users, presented in the Briefcase of work produced by the CASE 1 team. The CASE 2 team defined specific objectives for patients with diabetes and health workers. The CASE 3 team specific objectives were linked to the Manguinhos area in general.

- The three cases integrated factors linked to the actors such as availability, motivation, and attitude towards change, as well as organizational characteristics such as political climate, and economic situation. They mentioned that "knowledge translation was a new term presented by the group [of the PDTSP-*Teias* network evaluation] [. . .]. So, they started trying to understand what that was" (Interview 6). In CASE 2 and CASE 3, knowledge translation was a new concept to most knowledge producers and knowledge users.

- All three cases had previous practical experience on how to disseminate knowledge to the Manguinhos area. The CASE 1 team had previous experience in knowledge translation since they were part of the LTM team, producing and disseminating knowledge about health, environment, and public policies among various social actors since 2003. CASE 2 and CASE 3 teams did not have previous experience or formal training in knowledge translation before joining the PDTSP-*Teias* network in 2009. All three cases did not systematize the knowledge translation process in previous work.

For context analysis, consideration was given to:

i. the factors related to the researchers' previous knowledge about the reality of the Manguinhos area and the group expertise to develop knowledge translation practices,
ii. the characteristics of the actors (users, Manguinhos residents, health professionals, managers, researchers) regarding their involvement in the projects, and
iii. organizations, health services, Fiocruz Foundation, associations, and other local services, concerning participation in projects, interests, support (Tchameni Ngamo et al., 2016).

Regarding the analysis of the users' needs, consideration was given to:

i. knowledge needs expected in addressing the delineated problem,
ii. users' interest and receptiveness to new knowledge,

iii. preferences regarding format and dissemination channel, and
iv. pre-testing knowledge products (Tchameni Ngamo et al., 2016).

With these considerations in mind, the analysis of the context and users' needs appeared well integrated by the three cases. CASE 1 team developed an upstream project, defining the knowledge needs to be satisfied and delineating the problem with Manguinhos residents. The problem and the need for knowledge were verified among knowledge users. As presented in the case description, the CASE 1 team had long experience in action research. For the last two decades, the Territorial Laboratory of Manguinhos/*Laboratório Territorial de Manguinhos* (LTM) has kept a dialogue with Manguinhos residents, working in a participatory research and action approach "participating since 2002 in the [local] movements [. . .] the violence reduction agenda, and the Manguinhos forum" (Interview 2). Since then, KT opportunities and obstacles were analyzed, and solutions were defined among knowledge producers and knowledge users. Knowledge producers asked, "what does the residents want? That [their] house does not fill up [with water], they want to have a decent place to live, and is often is not the researcher who will solve it" (Focus Group). However, opportunities and obstacles were analyzed even when knowledge producers had no clear understanding of how to incorporate community needs into the research proposal. "The researcher [was] right there problematizing that. Sometimes there [was] also a lack of understanding from us as a researcher of what was the intention" (Focus Group).

The CASE 1 team had an explicit commitment to the social actors' participation in the definition of knowledge that needed to be satisfied and in outlining the research problem. The intention was that the research products were not only academic (scientific papers or books), but that they should have a direct return for Manguinhos residents: "We do not want you to do research and this to be an [just a scientific] article. We want more than that. We want to know what the research is bringing back to healthcare here in Manguinhos" (Focus Group). There were times when CASE 1 team knowledge producers did not know how to do research products suitable to knowledge users: "One thing everyone wants is the improvement of the region [. . .]. The question is, how to bring it all together?" (Focus Group). Conversely, knowledge producers' expertise to listening, understanding, and incorporating users' needs was pointed out as fundamental to the

translation practice, mainly in terms of participatory research. Sometimes this process demanded specific skills and tools, performed by an intermediary or knowledge broker; however, the CASE 1 team did not have such a professional.

A remarkable difference could be observed between the CASE 1 team and the others, with respect to recognizing how to circulate in the Manguinhos area and how to get close to Manguinhos residents. The CASE 1 team had previous expertise in how to approach knowledge users, explaining that "when [knowledge producers] come to the field, they have to think how they will approach [knowledge users]" and see "what difficulties [knowledge users] have" (Interview 5). CASE 1 also knew how to work in a context of violence and political disputes. They mentioned that knowledge producers working in the Manguinhos area should be made aware of "if there is a shooting or if there is no shooting; more operational things of the day that [knowledge producers] do not think about when they think about research"(Interview 5).

They sought to work with health workers in order to identify the format and the most relevant channels to disseminate the research products among patients with diabetes. The first step was "interviewing family health teams in order to understand a little about their difficulties in managing their patients; especially if they had any difficulties related with the medication" (Interview 5). The CASE 2 team also interviewed pharmacists to discuss "with them, how they fit in or not [in the healthcare system], or how they would like to fit in, and what issues they saw as important for the care for patients with diabetes" (Interview 5).

The problem of and the need for knowledge were identified, mostly by knowledge producers and health professionals, acting as intermediaries with knowledge users. KT opportunities and obstacles were analyzed, but the corresponding solutions have still not been identified. To knowledge producers, "the bottom line was how to make a transition from pharmaceutical services with a more managerial character like to buy a box, put it on the shelf, and deliver the box to a greater involvement with the patient care process" (Interview 8).

To the CASE 3 team, the analysis of the context and users' needs was developed after the production of knowledge. Factors linked to organizational characteristics such as political climate and financial support were mentioned as barriers to knowledge production. "The project was

structured in 2010, focusing on the Manguinhos Refinery, but funding was not obtained for the implementation". At that time "there was still no question of the expropriation of the Manguinhos Refinery" (DOC4). Knowledge producers identified the problem or the need for knowledge using research evidence and verifying with knowledge users. The CASE 3 team created "a team to develop research with two project coordinators, two laboratory professionals [. . .] six research assistants" (DOC3). Research assistants who were mostly Manguinhos residents "recognized the conditions under which the field activities would be carried out and collected information related to the study" (DOC3). KT opportunities and obstacles were analyzed, but the corresponding solutions have still not been identified because CASE 3 team "did not have the results of the analyses. It was kind of frustrating. They understood that the translation of knowledge would be to close the cycle. That they did not have" (Interview 1).

5.2.2. Dimension D2 – Knowledge to be Translated

5.2.2.1 Dimension 2 Highlights

- In all three cases efforts were made to incorporate different types of knowledge. To enable the knowledge to be translated, most of it was referred to as research-based knowledge. There was an expectation from knowledge users that research products would make sense to them. Knowledge users asked that the PDTSP-*Teias* network research generate more articles but also provide effective returns for Manguinhos health services. They did not want knowledge producers "to do research and [just] publish an [scientific] article. They wanted more than that". Knowledge users asked: "What will the research bring back to healthcare here in Manguinhos?" (Focus Group).

- The CASE 1 team had more experience to make the content clear, accessible, and useful to the knowledge users than CASE 2 and CASE 3 teams.

- All three cases teams made efforts to produced knowledge that fully satisfied the users' needs for knowledge. However, the lack of experience, KT training, and political support were highlighted as obstacles to integrate this dimension.

For the knowledge to be translated, consideration was given to:

i. the types of knowledge suitable to public health actions,

ii. the fit between knowledge and users' needs, and

iii. the content adaptation required to make the knowledge clear, accessible, and useful to knowledge users (Tchameni Ngamo et al., 2016).

With these considerations in mind, to the CASE 1 team, the KT process was based on multiple types of knowledge, such as "the social determinants of health, [. . .] the idea of promoting emancipatory health" (Interview 2). The CASE 1 team was prepared to integrate and adapt knowledge, creating knowledge products suitable to knowledge users. For example, according to the CASE 1 team, "the initial idea was to produce a computer-based game [. . .] However, they had a language, a very different thing" (Interview 7). Thus, the CASE 1 team made modifications to the game in collaboration with knowledge users. Knowledge users participated in meetings "to discuss the tuberculosis process, the population view; it was very cool, but to change [. . .] to make the game was very complicated" (Interview 7). The CASE 1 team struggled to develop the game working with knowledge producers and knowledge users; however, "it turned out that the great goal of the game came from a [Manguinhos] resident [. . .]. [He/She] came up with the idea of doing a type of RPG (role-playing game) [. . .]. The way out was not what [knowledge producers] thought. It was another one" (Interview 7). The involvement of knowledge users and knowledge producers in a community meeting changed the focus of the game to better reflect the language and experience of knowledge users, thus "getting closer" to "the daily life of [Manguinhos residents]" in order "to explain not only the determinants of health but also understand those who experience it" (DOC1). There was an effort to translate knowledge in a spiral translation mode integrating the knowledge of knowledge users and making them co-producers of the knowledge produced.

The CASE 1 team had previous experience to make the content clear, accessible, and useful to knowledge users. They knew that "content and language are central elements for emancipatory health promotion" (DOC1). The CASE 1 team used "different languages [to] make it possible to advance the process of shared production of knowledge and its systematization into political-pedagogical materials about the [Manguinhos area]" (DOC1). The CASE 1 team had previous

knowledge of the value of knowledge producers and users' interactions, "which can contribute to promote autonomy and strengthen the places of interaction of social actors" (DOC1). The challenges encountered by the CASE 1 team in adapting knowledge to the users' needs showed that the team was open and prepared to deal with different types of knowledge. Knowledge from users was more often recognized in the elaboration of KT strategies than at the beginning of the research.

To the CASE 2 team, the KT process was based on a few types of knowledge, mostly research-based knowledge and tacit knowledge. The participation of health professionals in the team highlighted a collaborative content adaptation involving Manguinhos residents to improve the viability of the material to be translated for knowledge users. To help with content adaptation and the use of a less scientific language, "a group reviewed and gave comments to what [knowledge producers] wrote [. . .] reviewing it several times. It was a collaborative process to direct people to a form of communication that was not so scientific" (Interview 5). To achieve the aim of the project and to fit with knowledge users' needs, CASE 2 did "data collection, including interviews with different health professionals (managers, doctors, nurses, pharmacists, and community health agents), involved in the care of [local] diabetics" (DOC2). The intention was to make the content clear, accessible, and useful to knowledge users. Efforts were made to fit knowledge produced to users' needs in "workshops with [health] professionals from the [Manguinhos area] to present the results and discuss collectively a set of general and specific recommendations for the pharmaceutical services in the APS [attention and promotion of health] in the [Manguinhos area]" (DOC2).

To the CASE 3 team, the KT process was mostly research-based knowledge and data analysis derived knowledge. CASE 3 products were frequently developed based on knowledge derived from data analysis, such as "a scientific article based on the analysis of the results, a doctoral thesis, [a] book chapter telling the whole story of the project (objectives, mission), and [. . .] a scientific paper [. . .] more focused on the social and environmental field" (Interview 1). The intention was to make the content clear, accessible, and useful to knowledge users. The team "met regularly to discuss the research project [and followed] a routine that favored its integration and the holistic understanding of the study; above all, it inspired the interventions of its members

(DOC 3). Another way to make the content clear and accessible was through “meetings [which] constituted a political-pedagogical process that facilitated the group's action. This process included theoretical and practical classes on methods and procedures for collecting and processing samples, notions on the use of the Geographic Information System (GIS), and laboratory analysis processes" (DOC3).

The CASE 3 team made efforts to produce knowledge that fully satisfied the users’ needs for knowledge. They did not “want the data to become just part of a scientific article published in journals with limited circulation” (DOC4). According to the CASE 3 team, “research must generate more than results. [They hoped] that the study would not only support the academic world because the residents of the [Manguinhos area] were the main stakeholders" (DOC4).

5.2.3. Dimension D3 – Knowledge Users

5.2.3.1 Dimension 3 Highlights

- One of the recommendations of the PTDSP-*Teias* network was that knowledge products should be directed to the Manguinhos area. For this reason, all three case teams identified knowledge users at the beginning of the research project.

- However, participants had difficulties identifying differences between knowledge users and knowledge producers. They mentioned a need to break the boundary between knowledge producers and knowledge users since both can be the same. For example, Manguinhos residents could be both knowledge producers and knowledge users. Participants also mentioned that “no one is just a [knowledge] user. The [knowledge] users produce new knowledge. They produce, or re-signify, what they receive as information, not only as knowledge. They produce knowledge from the information they receive" (Interview 7). This view is shared by another participant, who “understands that both sides are [knowledge] producers and both sides are [knowledge] users because we learned a lot from them [knowledge users] too”. Indeed, this “is different from putting ourselves in the other's place without living the other's life" (Interview 1).

- All three cases identified in a general way the preferences and characteristics of the knowledge users. Most of the knowledge users addressed were Manguinhos residents, health professionals, community associations, health professionals working in public health at the local level, Fiocruz researchers, schoolteachers, and students.

For knowledge users, consideration was given to:

i. the identification and prioritization of knowledge users, and
ii. knowledge about the knowledge users (Tchameni Ngamo et al., 2016).

Thus, the CASE 1 team identified and classified a priori different knowledge users to be reached. Participants perceived the identification of knowledge users difficult, particularly in the Manguinhos context. To CASE 1 participants, "the field of social work is such a complex field involving church, political parties, health professionals, educators, researchers, and locals [. . .] community agents, educators, social workers, and the [drug] traffic itself" (Interview 7). In this respect, the CASE 1 team mentioned challenges in articulating the views and positions of different knowledge users and social actors in the *favela*. They noted that the interaction among such different social actors “is not going to work” (Interview 7) because of the different interests. The CASE 1 team had previous experience in “getting to know” their audiences. They “always try to engage in dialogue with Manguinhos residents, [their messengers] on these routes within the collective health field” (DOC1). The identification and prioritization of knowledge users were possible because the CASE 1 team was “constantly in dialogue with their Fiocruz colleagues and other institutions that work in health services through partnerships or collaborations in projects, seminars, or informal conversations" (DOC1). Within the scope of the PDTSP-*Teias* network, the CASE 1 team developed knowledge products as part of the Briefcase of work, including slideshows, books, calendars, games, which were "the themes and paths traveled; windows that they opened in order to look at the place. They synthesized meetings of local and academic knowledge" (DOC1). Each of these knowledge products had different audiences, such as tuberculosis patients, community health practitioners, schoolteachers, and students.

Likewise, the CASE 2 team had a clear description of knowledge users' characteristics and preferences since they worked with diabetics. To this team, "knowledge users are the ones who

have to take action, [. . .] starting with reality, whether administrative or practical actions. [They are the ones] who will need the generated evidence to improve practice" (Interview 8). They understand knowledge users as those who not only take hold of the acquired knowledge but also use it change and improve a given reality. The CASE 2 objective was to come up with guidelines for a better organization of pharmaceutical services in the Manguinhos area. The identification and prioritization of knowledge users allowed them to develop knowledge products and workshops directed mostly to health professionals and diabetics. During the workshops, they tried to understand healthcare practices from the perspective of potential knowledge users, looking for types of activities carried out in the health services. They found that less than 25% of patients were involved in health education sessions while "the health professionals [who participated] in these meetings were: doctors, nurses, nursing technicians, community health agents, and nutritionists. There was no reported participation of a pharmacist" (DOC2). The different knowledge users to be reached were identified working with the CASE 2 team, a “multi-professional team, and the target users” in order “to detail the model of interaction and pharmacotherapeutic follow-up of patients [with diabetes]” (DOC6).

The CASE 3 team identified the different knowledge users at the beginning of the project. However, the knowledge users' preferences and characteristics were identified in a general way. Among the different knowledge users identified, some were “participants in the research team, most of whom lived in [Manguinhos] area. They participated in action planning, data collection, and data analysis" (DOC3). Regarding the preferences and characteristics of knowledge users, it was mentioned that, “the historical and social processes in which Manguinhos' area is inserted means that it is continuously transformed, which makes its characterization difficult” (DOC3). However, “the production of photographs and several hours of films at the [data] collection points” (DOC5) made it possible to characterize in a general way some places and knowledge users. The CASE 3 team’s main objective was to analyze the work processes related to the preparation and development of the research project titled "Manquinhos Environmental Diagnosis". This objective led them to develop scientific papers, a doctoral thesis, and book chapters mostly directed at knowledge producers (peers), decision-makers, and policymakers. To the CASE 3 team, the idea “was [to work] with Manguinhos residents' associations to pass

information to them" so as "to empower this population through the residents' association" (Interview 1). However, "there was not enough time to generate the [research] result and still [empower Manguinhos residents] (Interview 1).

5.2.4. Dimension D4 – KT Partners

5.2.4.1. Dimension 4 Highlights

- Partners from the *Germano Sinval Faria* School Health Center were identified as mediators between knowledge producers and knowledge users.
- All three case teams engaged in internal networking within Fiocruz units in order to facilitate partnerships and collaborations.
- All three cases identified key social actors concerned by the KT process. However, they did not mention the key actors' role.

KT partners were social actors from different sectors (academic, government, health and social services network, the media, and the Manguinhos community). These social actors could be individuals, groups, organizations, or networks, facilitating links with knowledge users (Tchameni Ngamo et al., 2016).

The CASE 1 team identified key partners concerned with the KT process (Figure 8); however, partners 'roles were not clearly defined. The CASE 1 team had an internal connection within Fiocruz units such as the *Sergio Arouca* National School of Public Health (ENSP), the *Joaquim Venâncio* Polytechnic School of Health (EPSJV), the Institute of Scientific and Technological Communication and Information in Health (ICICT), and the Oswaldo Cruz House (COC). The CASE 1 team "invited [members of] the Polytechnic School of Health, a high school with a scientific program for students, [. . .] and the ICICT" to participate in the project (Interview 2). The CASE 1 team also managed to bring together different institutions, organizations, and social movements in other *favelas* (*Alemão* and *Borel*) to spend "a year arguing and [connecting] not only with the people in Manguinhos but also in Alemão [. . .] IBASE [. . .] *Borel* [. . .] the public defender's office, UNISUAM (a private university) [. . .] partners with Fiocruz in Manguinhos, and a professor from UFRJ (Federal University of Rio de Janeiro) who works in *Alemão*" (Interview 2).

The CASE 1 team identified potential partners and intermediaries and defined their roles. Intermediaries were labeled “resident researchers”. They included young people from Manguinhos enrolled in high school who had received a PROVOC scholarship. The adults were Manguinhos residents that [the CASE 1 team had identified] as knowledgeable of the area” (Interview 2). To the CASE 1 team, "[talking] about a network that involves social agents [. . .] from different backgrounds, different [walks of life], different institutions, is much more complex" (Interview 7). Participants identified themselves as knowledge producers and intermediaries in the KT process. They mentioned that their “place [was] research [. . .]. What they had to do best, or what they had to contribute the most, was to produce information, data, and knowledge as well as help mediate relationships” (Interview 7). The CASE 1 team highlighted the complexity of defining KT partners and their role since “working in a much larger network that includes multiple levels of governance, and multiple agents is more complex" (Interview 7). KT partners were perceived as relevant when they controlled the resources and the knowledge required to act, or when they provided access to other relevant KT partners. The CASE 1 team worked with “the idea that mediators [. . .] were local people from the [Manguinhos area], who had community recognition. For example, everybody reported to one resident to talk about a problem. Then they identified [the mediator] right there” (Interview 2). Most of the key social actors were Manquinhos residents, local facilitators, and health workers. As a means of participation and inclusion, a community mediator said that her "mother, [a Manguinhos resident], participated in many meetings with the [staff] of the health center" (Focus Group). The CASE 1 team had key actors living in a *favela* (*Mandela*) near Fiocruz, which allowed local facilitators to "cross, leave [Fiocruz], and go inside the *Mandela* [*favela*]" (Focus Group). CASE 1 knowledge users mentioned that in the *favela*, "when someone wanted to know something [about Fiocruz research], there was a knock on [their] house door [asking] [. . .] what is going on at the [Fiocruz] today?” (Focus Group).

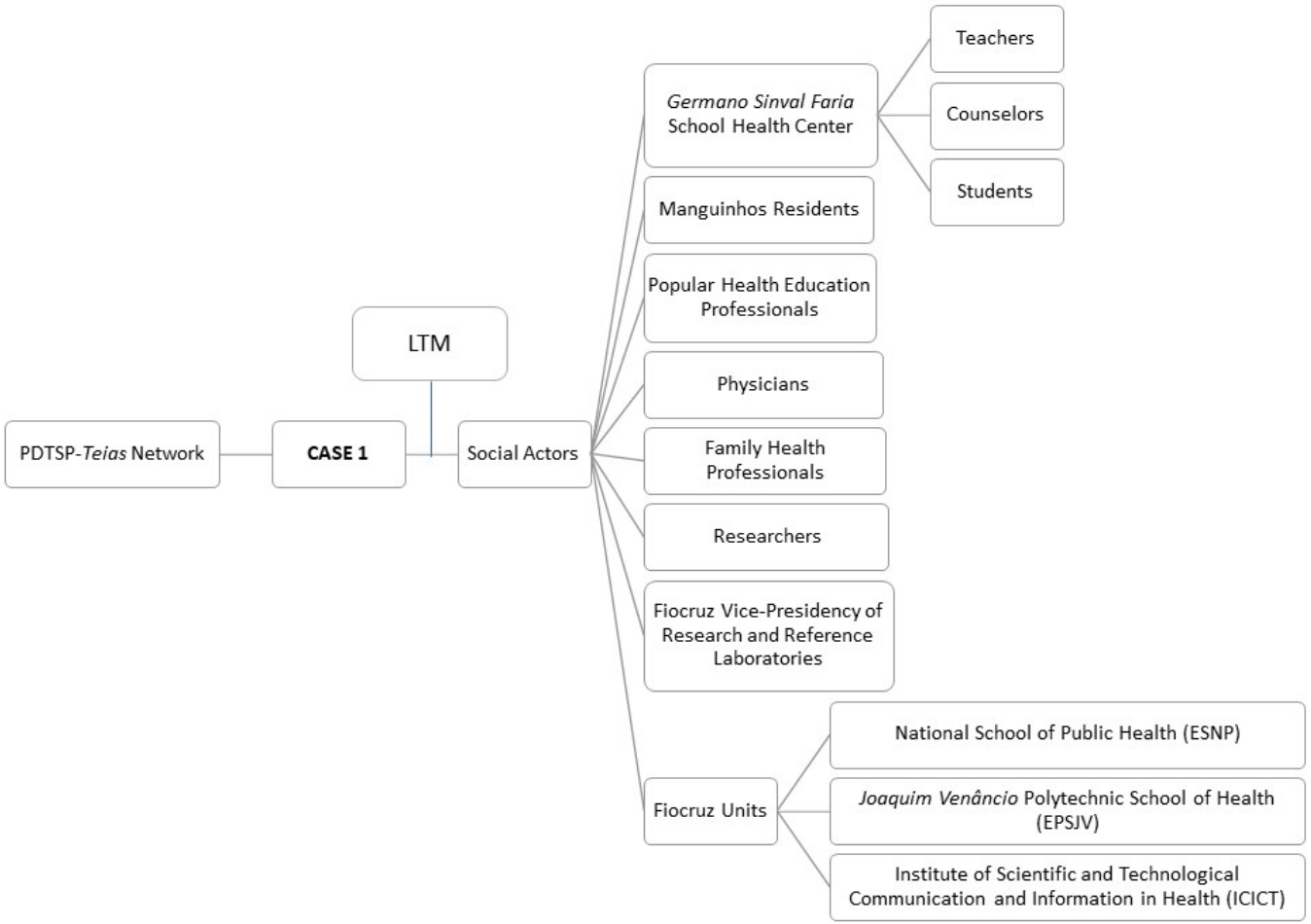

Figure 8: CASE 1Team KT Partners

The CASE 2 team identified key social actors concerned by the KT process (Figure 9). However, their roles were not openly explained. The Case 2 team also worked together/cooperated with Fiocruz units, which included “researchers from different Fiocruz units” who had “many years [of experience] in their fields of research” (Interview 5), as well as partners from Manguinhos area who “worked at the *Victor Valla* school,” the school’s “teams and the teams at the family health clinic” (Interview 5). Some KT partners were senior research coordinators in Fiocruz units: people with 10, 20 years of research experience. They also had younger colleagues (Interview 5). The CASE 2 team developed a working relationship with health professionals: “one Fiocruz pharmacist helped a lot to think and analyze the results,” bridging the gap “between [researchers] and practice" (Interview 8). Another participant did the same. The participant mentioned "a nurse who was from the PDTSP-*Teias* network [. . .]. [S]he participated in meetings and everything [else]; she helped [them] move and mediate [. . .] recording medical data” (Interview 5).

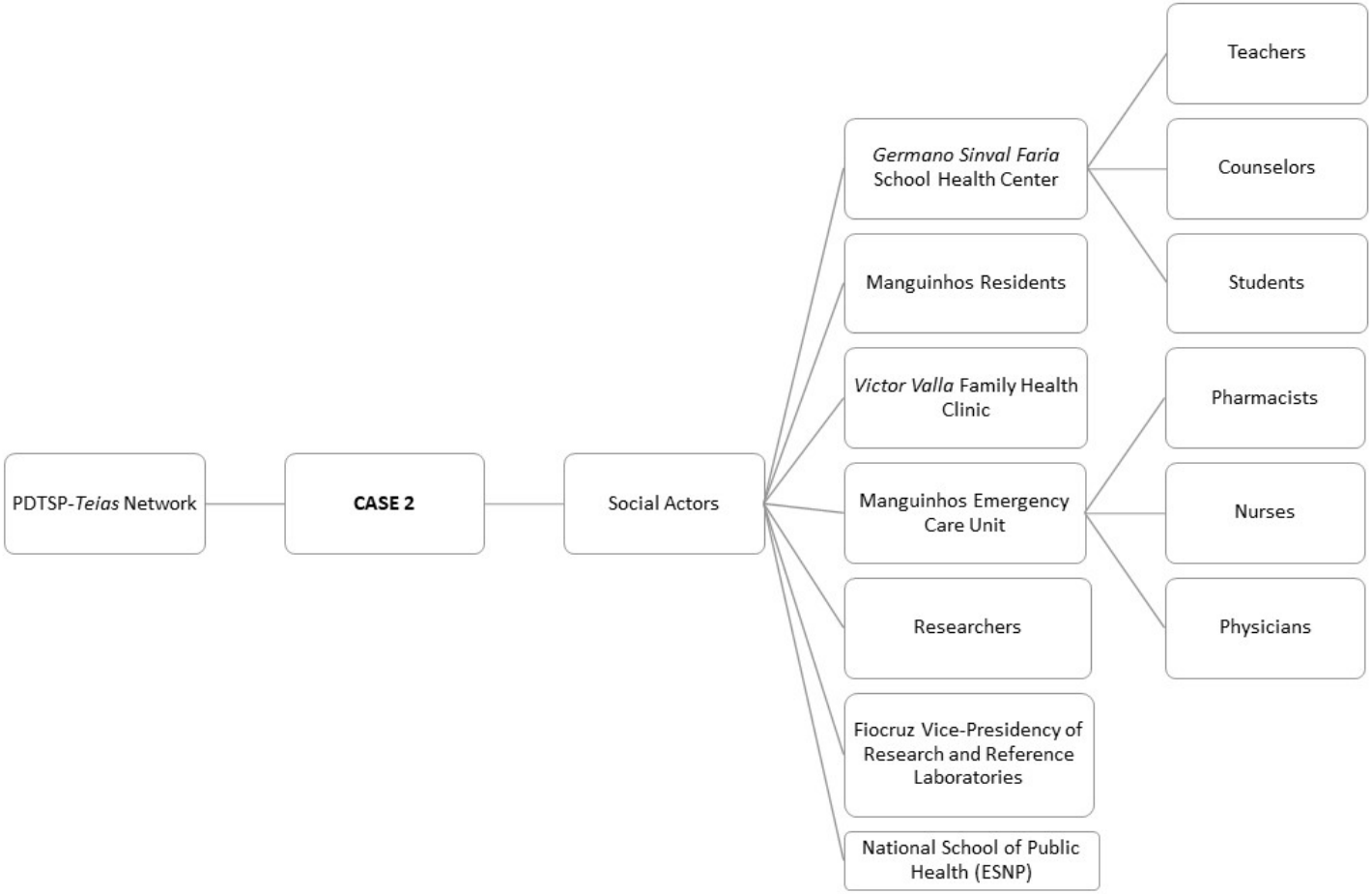

Figure 9: CASE 2 Team KT Partners

The CASE 3 team identified key social actors concerned by the KT process (Figure 10). However, their roles were not openly explained. During data collection, the CASE 3 team had "to bring together the soil sample collection team" (Interview 1). To the CASE 3 team, this "was a difficult stage because they had to hire people from the [Manguinhos] community since the community was on the warpath and no outsiders could enter to collect soil sample" (Interview 1). However, the CASE 3 team "formed a team of interviewers [. . .] and hired four soil sample collectors" (Interview 1). "These four collectors were young men and women who had finished high school [. . .] looking for a direction in life" (Interview 1). According to the CASE 3 team, the sample collection team participated in meetings "with other researchers and laboratory technicians. The project was always discussed and explained in their presence as well. That was the most positive thing throughout this work" (Interview 1).

To achieve some of the CASE 3 objectives, "in 2012, [CASE 3] researchers were able to enter the Strategic Health Research Support Program (Papes VI) of the [Vice-Presidency of Research and Reference Laboratories of Fiocruz] VPPLR/Fiocruz, in partnership with the National Council for Scientific and Technological Development (CNPq)" (DOC4). The CASE 3 team reported that "to continue the work … researchers could count on the support of ENSP management, and the collaboration of the department itself, i.e. the DSSA [Department of Sanitation and Environmental Health]" (DOC4).

The CASE 3 team did not clarify information defining knowledge users' role.

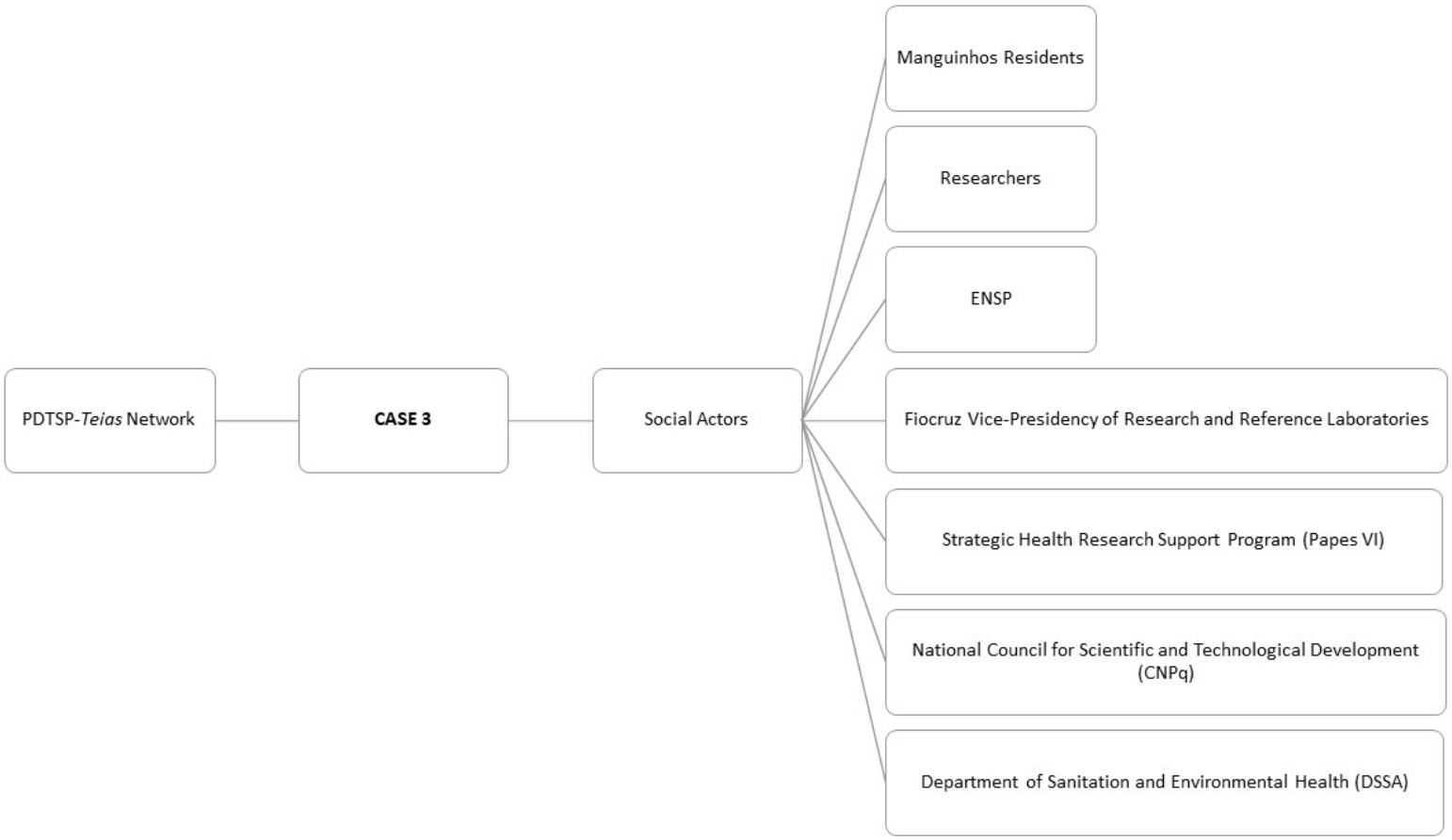

Figure 10: CASE 3 Team KT Partners

5.2.5. Dimension D5 – KT Strategies

5.2.5.1. Dimension 5 Highlights

- CASE 1 and CASE 2 teams mostly integrated this dimension. KT strategies were based on multiple interventions combining dissemination and uptake strategies. Detailed KT strategies and monitoring mechanisms were planned to ensure that the KT strategies were accomplished.

- CASE 3 KT strategies were based on multiple interventions centered on dissemination via, for example, scientific publications.

For the KT strategies, the focus was on the appropriated KT strategies selected following the KT process's overall objective and the type of knowledge to be translated, the knowledge users to be reached, the possible collaborations, and available resources.

CASE 1 KT strategies were selected and planned in agreement with the KT process's general objective and the type of knowledge translated. The CASE 1 team implemented a Briefcase called: A Territory in Motion (Figure 11). The Manguinhos area and its vulnerabilities, injustices, and potentialities were addressed in the Briefcase themes, such as floods, public policies, the Growth Acceleration Program/*Programa de Aceleração do Crescimento* (PAC)[6], housing, life stories, and memories of Manguinhos residents. The CASE 1 team "sought to understand Manguinhos in its complexity, producing knowledge on themes related to the history of formation and memory of communities, processes of change, and their impacts on the environment and people's health" (DOC1). The themes, contents, and formats of the materials were defined by the broader community of action research/*Comunidade Ampliada de Pesquisa-Ação* based on problem situations experienced by knowledge producers and Manguinhos residents. For the CASE 1 team, each problem situation became a generating theme, and each material produced was a method

[6] The Growth Acceleration Program/*Programa de Aceleração do Crescimento* (PAC) was created in 2007 to plan and promote social, urban, logistic and energy infrastructure projects in Brazil, thus accelerating the country's sustainable development (Ministério do Planejamento, 2020).

of shared knowledge production. The Briefcase synthesized the connection between local and academic knowledge.

> "[The CASE 1 team] translated it with the [Manguinhos] residents' collaboration [. . .] and then they produced political-pedagogical materials," namely "a folder, a video [. . .] documentaries, [and] also a book. They made a calendar [about] the flood cycle. They created a game, like a tuberculosis RPG. It was called 'Mysterious Cough,' so it is in the Briefcase. They made a detailed report of the PAC, the early years of the PAC. They made workshop notebooks. They did all this and circulated the [. . .]. PAC workshop notebooks" and "distributed [them] to all the residents who participated in the projects' workshops, not just [to the research] colleagues" (Interview 2).

Figure 11: Briefcase of Action: A Territory in Motion

The KT strategies selected were based on multiple interventions that combined dissemination and uptake strategies. The CASE 1 team produced history videos about the PAC in order to document "the processes of change" (Focus Group). To make knowledge production available and facilitate communication with Manguinhos residents, the CASE 1 team created a website

called "Knowing Manguinhos". They “needed more flexibility to communicate with each other and with the vulnerable areas and make the materials available. They created a Facebook page that everyone could access and interact with. It was called: ‘Territories in Motion’" (Interview 2). The CASE 1 team used “a lot to social media (Facebook and Orkut) to raise awareness” (Focus Group).

According to the CASE 1 team, “from 2010 to 2011, the intersectoral board of managers was created within the PDTSP-*Teias*, and [the CASE 1 team] participated in the intersectoral board as collaborators [. . .]. [I]t [was] a relationship with the counselors, whether they [were local] residents, community agents who [had] dual roles (counselors and residents), local managers, [or] clinics”. The “relationship was via these intersectoral boards of managers” (Interview 2). So-called “point of view spaces” were created (Interview 2) to explore divergent viewpoints. The CASE 1 team “wanted to know the [Manguinhos area] from Manguinhos residents’ collective vision, not the consensus, but the different views” (Interview 2).

The implementation stages for all KT strategies were presented in detail, and monitoring mechanisms were planned to ensure they were carried out. The CASE 1 team worked with the idea of

> “small expanded research communities [. . .] It was like this: there was a theme that they wanted to map, to develop; they wanted to know the history of Manguinhos, and the whole environmental issue in Manguinhos. They wanted to understand the social determinants [. . .] from the [Manguinhos] residents' perspective [. . .]. So, [the CASE 1 team] called them thematic maps. There was a researcher from that area with a group of residents called " resident researchers" (Interview 2).

The resident researchers were considered research partners and not volunteers. The CASE 1 team did not “work with the idea of volunteering. [They worked] with the idea of their training process [. . .] a way for the stipend to be a possibility so that they [could] dedicate themselves to training and work on the project” (Interview 2). The resident researchers designed, and prepared courses dedicated to health counselors in Manguinhos. However, the resident researchers did not attend the management meetings of the PDTSP-*Teias* network “because [the CASE 1 team] did not want to burden them with management responsibilities they could not take on” (Interview 2).

Workshops with Manguinhos residents were a KT strategy used by the CASE 1 team to produce knowledge. The ownership workshops were implemented by the CASE 1 team to create a space for dialogue between knowledge producers and Manguinhos residents. The CASE 1 team listened “to the residents, what they said [. . .]. When they disagreed, they raised questions. So, it [was] a dialogue” (Interview 2). In the photograph workshops, the CASE 1 team used photographs of favelas from different countries to provoke Manguinhos residents to reflect about their realities. The CASE 1 team "decided to use [. . .] photos of *Sebastião Salgado*, photos from outside, from other photographers outside Brazil. So, they did not use photos only from the favela, from the local reality [. . .]. [T]he images were from Indian slums, realities very similar to theirs” (Interview 7). Workshops always started with a welcome presentation with snacks and gifts, as part of the process of change. The intention was to have a positive intervention: “the gift, the snack, all this [was] to contribute, 'to show to the people [. . .] that it was worth getting [up] Saturday morning and [. . .] come to meet these people [. . .]. That makes some difference" (Interview 7). Workshops with Manguinhos residents were considered a “great strategy for knowledge production [. . .]. [T]hey always seek conflicting visions to be in [the] workshops” (Interview 2).

In some cases, knowledge producers attended the workshops only as observers; "everyone else [had] a role: to report, to observe, to take photos," but knowledge producers did not "get into the debate" (Interview 7). The residents conducted the debate with the mediation of a resident researcher. To the CASE 1 team, KT strategies "do not have to be material, but they have to have visibility [. . .] for example, a workshop [. . .] has to have an end in itself [. . .] [knowledge users] have to leave feeling that they have changed with that activity" (Interview 7).

Regarding knowledge about the appropriate KT strategies to be translated to knowledge users, for the CASE 1 team, research results must be disseminated during people's leisure time, be it on television or the Internet. According to them, "if the other person's leisure is on television, the result of our research has to be on television. If it is on the Internet, we need to be on the Internet. If it is on whatever it is, we can also be there" (Focus Group).

CASE 2 team KT strategies agreed with the KT process's general objective and the type of knowledge translated. CASE 2 team strategies were based on multiple interventions combining

dissemination and uptake strategies. They presented KT strategies in detail, and monitoring mechanisms were planned to ensure that the KT strategies were carried out.

The team presented results in “an executive summary [. . .] and workshops with the health teams to discuss the problems encountered [. . .] and how they could come together as a team [. . .] how the pharmacist could be on this team for diabetic care” (Interview 5). According to the CASE 2 team, the workshop format brought together pharmacy health professionals to reflect on care processes, know each other, and realize that they can interact. Some workshops made it possible to bring together family health teams and doctors.

The CASE 2 team developed a game about drugs, aimed at children. The team “ended up participating in an educational-game project,” involving one researcher “who was working with health promotion games”. “[T]hey worked with her and developed a [. . .] health promotion game” (Interview 5). This game was realized collaboratively by CASE 1 and CASE 2 teams. When the CASE 2 team was asked about the implementation of a KT strategy, "this is what [came] to mind as it [was] very cool; it was used at the National Week of Science and Technology and [. . .] in other places (Focus Group). The CASE 2 team applied a version of the game to a health promotion action at a university in Rio de Janeiro State, “at UFRJ Macaé [Federal University of Rio de Janeiro in Macaé]" (Interview 5). To the CASE 2 team, "the games were exciting. They made [them] wonder how to translate [knowledge] in a playful way. Moreover, [. . .] “experience with a researcher who works with them helped a lot" (Interview 5).

The CASE 2 team proposed educational materials on how to use and how to access medications at Brazil’s Unified Health System (SUS), as well as information about pharmaceutical services in Manguinhos area. Another KT strategy implemented by the CASE 2 team was a science fair in Manguinhos targeting local residents. Lastly, the CASE 2 team published a book chapter with information about the projects' results free from scientific jargon. According to the CASE 2 team, "these two network activities [the book and the science fair] [. . .] were activities that motivated [them] to think about ways of translating knowledge" (Interview 5).

CASE 3 KT strategies were selected and planned in agreement with the KT process's general objective and the type of knowledge translated. KT strategies were based on multiple

interventions focusing on dissemination. According to the CASE 3 team, the "Social and Environmental Diagnosis of Manguinhos" (Interview 1) would serve various research studies and the Manguinhos community itself. The team had “meetings with the neighborhood association, but what they wanted to know [the CASE 3 team did not] have, which [were] the results of soil contamination” (Interview 1). The CASE 3 team implemented three KT strategies: “a doctoral dissertation and two [scientific] articles.” According to the team, “[these strategies] may be for some decision-makers, but that is something that [did not] depend on [knowledge producers] (Interview 1). Lastly, the CASE 3 team also published a book chapter “telling the whole story of the project, its goals, its mission” (Interview 1).

5.2.5.2. New Criterion Added to this Dimension

5.2.5.2.1. KT Strategies: Barriers/Facilitators

This criterion was added because this information emerged from the data as an important aspect of the KT process that was not contemplated by the INSPQ KT plan. Some participants reported difficulties working with a different form of KT strategy and writing style than the academic standard such as scientific papers, and theses.

5.2.5.2.2. KT Strategies Barriers and Facilitators Mentioned by CASE 1 Team

The CASE 1 team mentioned difficulty working in networks at Fiocruz due to internal disputes; on the other hand, participants were able to approach participants who would have been hard to contact outside the PDTSP-*Teias* network. Some participants mentioned the difficulty of knowing how to communicate with researchers from other fields. The CASE 1 team mentioned “wasted material, information circulating that no one reads, that no one will make their own” (Interview 7). There was criticism of the long process of elaborating projects through KT strategies. To fix this issue, the CASE 1 team created a Facebook page called Territories on the Move, which introduced more responsiveness, as the production of the Briefcase was very long.

The CASE 1 team mentioned using WhatsApp as a KT strategy. However, participants said that it was difficult to participate with the residents in the WhatsApp group because of the number of demands and the lack of a time limit. The CASE 1 team pointed out some difficulties associated

with the time dedicated to implementing KT strategies. “At a certain point, when they started asking for more time, it [was] the central issue” (Interview 2). According to the CASE 1 team, "projects to build understanding take a little more time [. . .] call for proposals cannot be so tied up in time; they have to be flexible” (Interview 2). The lack of time for researchers who need to meet other institutional demands was highlighted as a KT strategy barrier to knowledge producers and knowledge users. There was also a feeling of wear and tear during the inquiry in the Manguinhos area. After intense work, the work of case teams was interrupted without any justification.

> “[Knowledge producers] the researchers made a map; they called the planning staff. They did several workshops to see the intersections, the dialogues they had between the projects, and after all this work, they had a cut. Top to bottom. And then [knowledge producers] did not put any more energy on that map, because they talked to each other and saw that it was an intervention [of the PDTSP-*Teias* network] within that process that was considered to be a knowledge producers ‘plan" (Interview 2).

The CASE 1 team mentioned frustration about the Manguinhos survey since the latter failed to spark broader social participation. This team cited difficulties in networking and talking with colleagues due to knowledge hierarchy problems. To the CASE 1 team, “from the concierge, the guard, who is black, are biased towards [Manguinhos] residents who are from the *favela*, or only associated with the favela” (Interview 2). Regarding the knowledge hierarchy, the CASE 1 team said that “the hierarchization of knowledge is an introjected thing around the world; it is not just researchers, residents; ordinary people already feel diminished in front of a researcher, because that is what society has built as symbolic, as value" (Interview 2).

According to the CASE 1 team, the people of Manguinhos face numerous issues and barriers, preventing them from participating in various activities. Knowledge producers also “had a hard time dealing with locals not showing up. Although the research process “had some routines, [knowledge users] did not always show up, did not care; then [knowledge producers] started to understand [. . .] [knowledge users could not] leave home because [of] a shooting. [Some knowledge users] had to take [their] mother or grandmother to see a doctor, and [did not] have an appointment. [They had] to go to the health center and spend the whole day [. . .]. [S]ometimes there [was] no money to take the bus [. . .] so, there [were] several barriers” (Interview 2). The

CASE 1 team stressed that such issues and barriers to the KT strategies and KT process made Manguinhos residents “slaves to necessity” (Interview 2).

Resistance to the research project also came from schools due to differences in their respective schedules. “The new school year is set at the end of the previous year when courses are still going on.” Although “teachers [were] invited [to participate in the research project], they [did not] like changing very much”. The research “agenda is not quite the school's agenda” (Focus Group).

The CASE 1 team pointed out that resident researchers faced difficult situations in Manguinhos during the research process, one being the risk of losing their homes to PAC interventions, which were a relocation process for the construction of new housing, urbanization of roads and alleys, and the construction of public facilities in the Manguinhos area (Dias Fernandes et al., 2010). Nevertheless, resident researchers did attend PDTSP-*Teias* meetings to obtain information on what was happening. Resident researchers wanted “to know this: My house is there by the river. When it rains it fills up, and the government is saying they are going to remove us. Where will they put us? I want to know that!" (Focus Group). CASE 1 knowledge producers did not know “how [to] answer that” (Focus Group).

Manguinhos residents were fed up with the many government actions and research while seeing little actual action to improve their lives. Actions with no continuity, like passing waves, are demotivating; usually due to Brazil’s political instability. This affects the opportunities associated with the knowledge translation process. Also, to the CASE 1 team, “if the [knowledge user] has no right to culture [. . .] if [knowledge users] do not have a very structured time for leisure, there is no use taking their time to bring them to a meeting” (Focus Group). The CASE 1 team cited problems in interactions between academics and other groups like artists. Because of poor funding, limited information and the violence experienced in Manguinhos, participants had problems finishing projects.

5.2.5.2.3. KT Strategies Barriers and Facilitators Mentioned by CASE 2 Team

The CASE 2 team mentioned that the PDTSP-*Teias* network was innovative because knowledge producers and knowledge users did not know how to put their knowledge to action. Moreover, the PDTSP-*Teias* network management team had no KT conceptual tool to follow. Thinking and

acting in a new way was a challenge to the CASE 2 team. The lack of a regular flow of communication between pharmacists and patient care teams was a critical issue. The biggest gain was the opportunity to discuss results with potential knowledge users, such as health teams and managers. However, the PDTSP-*Teias* network closed when they were at the most crucial stage.

The CASE 2 team said they struggled to continue their activity due to violence in Manguinhos. In fact, “2012-2013 was a tough period to enter the [Manguinhos area] in terms of violence. Work was delayed several months because of this since it was not safe enough for researchers to enter the field" (Focus Group). This position was also shared by CASE 1 and CASE 3 teams.

The challenges to the project's funding were also a barrier to the knowledge translation process. "The hiccups of project continuity, financing, not knowing if there was money [. . .] these managerial challenges were lessons learned, a constant challenge" (Interview 8). To the CASE 2 team, the environment in the Manguinhos area changed during the project’s timeline. Participants mentioned having problems identifying with the research and the daily life in Manguinhos. Reconciling the demands of Fiocruz and those of the PDTSP-*Teias* was challenging to the research teams. The CASE 2 team felt that informing the population about issues they did not care about was a big challenge. Explaining to locals, the limits of the research and the Brazilian government's responsibility were barriers to the CASE 2 team. They emphasized constant criticism "of Fiocruz, that a lot of research was being done, but very little [was] invested in the [Manguinhos] area in terms of social responsibility and social commitment” (Focus Group).

According to the CASE 2 team, raising awareness among health managers “was another challenge they had to deal with." This team wanted to inform health managers about their research interests, “health, environment, education [. . .] pharmacy, but if the local [health] manager [was] not on [their] side [. . .] the work [was] very difficult. They faced several difficulties in this regard" (Focus Group).

5.2.5.2.4. KT Strategies Barriers and Facilitators Mentioned by CASE 3 Team

The CASE 3 team mentioned that long delays in the fieldwork was a barrier to the KT strategy. “It took [them] two years to collect” data “because [the sample collection] had to be [done] in the summer, then in the spring, then in the fall, then in the winter [. . .]. [I]t was long and repetitive”

(Interview 1). Team members also said that there were issues in doing fieldwork as a result of the violence and adverse weather conditions in the Manguinhos area:

> “The car would go out with four data collectors at 9 am. That same day, at 8:30 am, they’d get a warning not to join the community because it was dangerous.” At that point, “they’d cancel everything. If it was raining, the next day there would be no collection as the rain masks the result. So, it was hard work for almost two years" (Interview 1).

CASE 1 and CASE 2 teams faced the same barriers to the KT process and KT strategies.

5.2.6. Dimension D6 – Overall KT approach

5.2.6.1 Dimension 6 Highlights

- The CASE 1 team used a combination of the two approaches. However, the KT integrated approach was implemented mostly with a co-construction of knowledge.
- CASE 2 and CASE 3 teams mostly used an End-of-grant approach. Both teams used dissemination strategies such as workshops, scientific papers, and conferences participation.
- An integrated KT approach should take into consideration knowledge users’ needs and community life stories. This means that knowledge producers must be prepared and willing to work together with the community in order to do an effective KT integrated approach.

The CASE 1 team used a combination of the two approaches: KT integrated and KT End-of-grant approaches. By and large, the integrated KT approach was implemented, which means that the CASE 1 team started the KT approach in the knowledge production stage and took into consideration the needs and the context of the knowledge users through the project.

> “All the material they produced [was] from the thematic cycle [. . .] [they had] a theme [. . .] a problem situation - to use Paulo Freire's language - that [was] brought by the [Manguinhos] residents. For example, the Manguinhos flood, a serious problem. So, [knowledge producers developed] knowledge about flooding in Manguinhos” (Interview 2).

The CASE 1 team worked in collaboration with Manguinhos residents in the intersectoral management council. “From 2010 to 2011, the intersectoral board of directors was created [. . .].

[I]t [was] a relationship between counselors, whether they [were Manguinhos] residents or community agents who had a dual role - counselors and [Manguinhos] residents" (Interview 2). The team had weekly meetings with the PDTSP-*Teias* management committee and other research teams. "It was a weekly job; they were attending a meeting every week and the team split up". So, "they had to have [their] own meeting to share information and give a minimal account of what [was] going on" (Focus Group). The CASE 1 team saw communication with Manguinhos residents as a communication circle: i) production, ii) circulation and appropriation, iii) information, and knowledge. To the CASE 1 team, knowledge producers brought scientific knowledge, and knowledge users brought local knowledge and life experiences to the communication circle. As the CASE 1 team put it:

> "researchers have the responsibility to bring [. . .] what was discussed about flooding in the broad sense, which means the state of the art [. . .] the locals bring what was flooding there, what happened. So, [together] they made the flood cycle in Manguinhos [. . .] from the macro determinants to the local problem" (Interview 2).

The team created trust between knowledge producers and knowledge users using WhatsApp as a means of communication. "There [were] residents who sent zap [WhatsApp message] to [knowledge producers] [. . .] wishing a merry Christmas or giving [them] some information" (Interview 2). The insertion of resident researchers in Manguinhos made it possible to document events that knowledge producers could not record. In "2010 [there was] a horrible flood [. . .] [knowledge users] lifted every furniture they had at home, the water would not go down [. . .] so, they went outside to take pictures [. . .] pictures of the tragedy, a huge thing. [Knowledge producers] with formal research schedules did not have this level of awareness [about the community needs] (Focus Group). Resident researchers identified their work as an organic way of researching because they already lived in Manguinhos. Their "job was very much to document things [. . .] it was very organic way of doing research [. . .] they already lived in Manguinhos, documented [facts] and then produced the documentaries" (Focus Group). Resident researchers "had a different place in [the] project." They knew "that they were different from someone employed by the Oswaldo Cruz Foundation, who [had] an obligation to be [there] from Monday to Friday, every time" (Focus Group). Thus, the CASE 1 team saw resident researchers as part of the project, entitling them to some financial compensation. Knowledge producers wanted "a

territorial, participatory intersectoral approach." In this sense, their question was: [Why] do we think the [Manguinhos] residents have to volunteer?" (Interview 2).

The CASE 1 team's project was based on shared knowledge production through knowledge users' dialogue and ownership – shared knowledge production in the sense that knowledge producers did not interfere with community knowledge production. According to them, each had their own time and form of knowledge appropriation. The CASE 1 team "shared production of knowledge with extended communities. They circulated political-pedagogical materials, either through broadcast media or print [. . .] they participated in discussions, in seminars organized by [local] residents [. . .] in their workshops [. . .] in the residents' debate" (Interview 2). The CASE 1 team noted that "transfer, translation, shared production [were part of their] core concept. In the project, [their] activities, practices, [were] directed at the idea of creating a comprehensive dialogue, an appropriation [. . .]. [A]t least that is what they wanted it to be" (Interview 2). According to the CASE 1 team, knowledge producers went to many places in Manguinhos to inform people about the importance of participation and representation in collective spaces. They "had to go where people were [. . .]. If there was a meeting, they were there to give [a] talk about the importance of health, the importance of participation, the importance of organizing in collective spaces" (Focus Group). The CASE 1 team set up a health promotion project in Manguinhos schools. Knowledge users considered it a "magnificent work [. . .] coming to school and finding opportunities to talk to the teachers. They built a bridge with that school [. . .] [engaged in an] exercise of prevention, knowledge absorption, at the middle and elementary level [. . .] and mostly done in the local area" (Focus Group). The team "conducted seminars, fieldwork [. . .] [engaged in] dialogue with people. What [was] critical [was] how they talked to people, how they welcomed people to dialogue [. . .] [how they thought] about all that. They waited for people" (Interview 2).

Nevertheless, knowledge producers found it hard to work closely with Manguinhos residents because of the inability to come up with answers to local problems. The CASE 1 team walked "around to get to know the [local] residents, the residents' leaders. People who [were] acknowledged for [their role in local] struggles, who accompanied [them] in the fieldwork [. . .]. [The CASE 1 team] needed to answer their questions, their doubts, their problems" (Interview 2).

The realities of knowledge producers and knowledge users were at odds with each other. In fact, knowledge users from the CASE 1 team noted that:

> "the more involved you are, the more emotional you get in a meeting [. . .]. [T]he relationship with what is being discussed differs. We would come back very strained because it [was] a narcissistic meeting, one of spitting arrogance in the other's face. Nevertheless, it was about my house, it [was] about me [. . .] the situation was complicated for [us]" (Focus Group).

In some situations, knowledge users sought to get information from meetings on issues related to their housing, following changes to the Growth Acceleration Program (PAC) brought to the Manguinhos area. “Officially, the place where [knowledge users] lived was not to be cleared but was on the verge of being cleared [. . .] [They went] to meetings because they wanted to understand if they would be removed or not [. . .]. All [knowledge users] were officially going through this situation” (Focus Group). There was also criticism of the inappropriate use of integrated approach terminology as some projects failed to be a genuinely participatory project. To the CASE 1 team, “everyone [talked about the] intersectoral approach, political and intersectoral, community participation, territorial approach. When it comes to [putting things into] practice, no one does it" (Interview 2). The integrated KT approach used by the CASE 1 team “was at the time an ecosystem approach. Now they say it is a territorial approach” (Interview 2).

The CASE 2 project started after knowledge was produced taking into consideration the needs and the context of knowledge users. They used mostly the End-of-grant approach fostering occasional interaction between knowledge producers and knowledge users. The CASE 2 team focused on the PDTSP-*Teias* network, which “encouraged projects to include people from [the health] services” (Interview 5). In this regard, the CASE 2 team developed collaboration between health professionals (knowledge users) and knowledge producers. According to them, [knowledge users suggested] that they start with diabetic patients” (Interview 8). However, “there [were] many [health] professionals who [did] not want to have close contact with researchers” (Interview 5).

When the CASE 2 team “finished with the research results, they sent a research summary [. . .] to everyone by email [. . .] including the [Manguinhos residents] who participated in their workshops, proposing solutions” (Interview 5). The team pointed out that there was a positive

aspect of working in a collaborative manner with knowledge producers and knowledge users. According to them, it was a different way of doing research at Fiocruz. It was a broader way of doing research, "making them [Manguinhos residents] part of [the] research, not just informants" (Interview 5). The CASE 2 team thought that the participation of knowledge users in the research might foster a change in "the knowledge of [health] service professionals. As they join a research project, thinking about the analysis [. . .] they have to think about what the best standard of practice is" (Interview 8). The CASE 2 team "firmly believe that this influence is important, but perhaps not in an explicitly causal relationship" (Interview 8).

The team understood that knowledge users' time was valuable, and that it is unethical to collect research data without feedback to knowledge users. They warned to "be careful with the [Manguinhos area], with the informants, with the participants, that they not just extract the information and leave" (Interview 5). To CASE 2 team, it was essential to translate knowledge effectively and simply, in a language adapted to knowledge users. They "were careful to include [knowledge users] in the research [. . .] to give them feedback in a proper way" (Interview 5). CASE 2 knowledge producers "thought research was just [. . .] thinking about the collection tool, about theoretical grounding, and that's it". However, they eventually realized "that was not it" (Interview 5). They recognized that "practice poses challenges that even researchers may not know how to solve and that they have to think about how to overcome them" (Interview 5). The shared interest in primary healthcare made it easy to create partnerships between knowledge producers and knowledge users. The CASE 2 team developed "partnerships through the community health leadership course. Several other partnerships were established between [knowledge users and producers]; [. . .] triggered by the detection of a shared interest in primary care" (Interview 8).

Still, the CASE 2 team found it challenging to manage research time and practice time. "The old story of marrying academic time with practice time became real. Sometimes they came to see people at the health center [who], at that moment, had some other priority" (Interview 8). The team knew that collaborative research was "a challenge for [its] work" (Focus Group). They wondered:

> How will we develop [the] research with the population, and how will they understand the demands from the [health] service, which is managed by the State?" It is "our task to explain this for everyone to understand. For us" at Fiocruz, "it was difficult [. . .] Imagine for those who were not in this research context" (Focus Group).

The CASE 3 project started after the knowledge was produced, but its team took into account the needs and the context of the knowledge users. They used mostly the End-of-grant approach fostering occasional interaction between knowledge producers and knowledge users. The CASE 3 team incorporated community participation within the scope of their project. Knowledge users participated in meetings with laboratory technicians and knowledge producers. "The project was always discussed and explained in their presence as well. This was the most positive thing [the team] saw throughout this work" (Interview 1). According to the CASE 3 team, the recommendation to include Manguinhos residents in the data collection was a positive aspect of the PDTSP-*Teias* proposal. For example, sample soil collectors were trained "before going into the field. [Knowledge producers] had meetings explaining to them the whole analytical process, focusing especially on the importance of collecting soil because an inappropriate sample would produce wrong results" (Interview 1).

The CASE 3 team mentioned satisfaction and a positive perception among Manguinhos residents' participation vis-à-vis the project. To the team, it "was very enriching [. . .] it was great because they saw these kids growing up. Two of them [went] to college, and they had a vision of what it was like to step into a [research] institution" (Interview 1). To the CASE 3 team, sample collectors "were very committed [. . .] they liked that, they felt important" (Interview 1). Through the interaction between knowledge producers and sample collectors, some of the collectors were invited to continue working on some of the research group's other projects. They "stayed another year with [them] [. . .] and then one became a team leader" (Interview 1). The CASE 3 team "had meetings with other researchers, with the laboratory technicians [and] invited the sample collectors" (Interview 1). After some interaction between knowledge producers and sample collectors (knowledge users), the team "was able to get a much better sense of their expectations" (Interview 1). The CASE 3 team

> "went into the field a couple of times, spending the day, bringing snacks, a hoe, and a shovel, all the material needed for [knowledge users] to learn how to collect [. . .]. Then

> [the knowledge producers] went with them to the lab to learn to prepare the sample [. . .] they actively participated in this training, both in meetings and in the field. So, when they set out to collect the samples themselves, they already knew what they had to do" (Interview 1).

The team pointed out that it was “a teamwork. Because if one failed, the other also failed" (Interview 1). To the CASE 3 team, the participation in the PDTSP-*Teias* network fostered a change in the way of doing research: “because this other side [an integrated research approach] they did not know [. . .] they had to learn to work this way” (Interview 1).

5.2.7. Dimension D7 – KT Evaluation and Dimension D8 – Resource

These two dimensions were not mentioned in detailed by the three cases.

5.3. Objective 3. Participation in the PDTSP-Teias Network and Knowledge Translation Practices

This section will present the results related to the thesis's third objective, which was to verify how participation in the PDTSP-*Teias* network facilitated knowledge translation between knowledge producers and knowledge users. A cross-case analysis is presented in Tables 9 to 16.

5.3.1. Dimension 1 – Analysis of the Context and Users’ Needs

5.3.1.1. Dimension 1 Highlights

- The PDTSP-*Teias* network facilitated KT practices by proposing the creation of a management committee and helping a steering committee. These two committees acted as knowledge brokers helping knowledge producers and knowledge users question themselves about elaborating research-based innovative products with direct use to the Manguinhos area.
- The problem or the need for knowledge was verified among knowledge users, mostly Manguinhos residents, who participated in the PDTSP-*Teias* network.

- The problem and the need for knowledge were identified, mostly by knowledge producers and health professionals, acting as knowledge users. The decisions on the progress of the network's work were agreed upon in meetings with all the network participants.
- KT opportunities and obstacles were analyzed. However, the corresponding solutions were not identified. The network's general objective was defined from the viewpoint of PDTSP-*Teias* steering and management committees. Nevertheless, specific objectives were defined, taking into consideration knowledge users' needs. Concrete changes were expected in terms of SUS reorganization and practical improvements in the health condition and quality of life of Manguinhos residents (Table 9).

Table 9: D1 Cross-Cases Analysis

Dimension 1 – Analysis of the Context and Users' Needs		
CASE Teams		**PDTSP-*Teias* Network**
CASE 1	- The CASE 1 team was highly experienced in action research. - They developed an upstream project, defining the knowledge needs to be satisfied and delineating the problem with Manguinhos residents. - The problem and the need for knowledge were verified among knowledge users. - Interaction with Manguinhos residents, working in a participatory research and action approach. - KT opportunities and obstacles were analyzed, and solutions were defined among knowledge producers and knowledge users. - They were committed to the social actors' participation in the definition of knowledge needed to be satisfied and outline the research problem. - Academic research products (scientific papers, books), as well as research products with a direct return for Manguinhos residents. - They knew how to circulate in the Manguinhos area and how to get close to Manguinhos residents. - They knew how to work in a context of violence and political disputes.	- The PDTSP-*Teias* network management committee proposed a model for project elaboration, which included: 1) Projects titles. 2) Participating Unit(s)/Institution(s). 3) Background/Justification – A set of necessary, circumstantial, and environmental information that was important for understanding the project's *raison d'être*. It included the definition of its general scope, results, products, and by-products, as well as the macro activities to be carried out. 4) Objectives – Succinct, easy to understand, specific, and realistic. The objectives were also chosen to reflect the challenges to be faced and problems to be solved. 5) Impacts – Observable and measurable results from the achievement of strategic objectives. 6) Operational Activities and Goals – Description of the necessary steps for the project's development. Project teams were expected to

<table>
<tr><th colspan="3">Dimension 1 – Analysis of the Context and Users' Needs</th></tr>
<tr><th colspan="2">CASE Teams</th><th>PDTSP-Teias Network</th></tr>
<tr><td></td><td>- They identified specific objectives for each knowledge user (presented in the Briefcase of work).
- Focus on co-constructing knowledge with knowledge users using a new health promotion approach.</td><td rowspan="3">determine which products were to be delivered at each the end of each activity.

7) Products – A tangible result of the execution of an activity. They were expected to measure the effectiveness and efficiency of that execution.

8) Control Milestones/Schedule of Activities – A definition of the points in the time - beginning and end of activities - with the definition of delivery of the products defined for each activity.

9) Definition of Resources – It included identifying professionals, materials, equipment, and needed and available information.

10) Interrelated Projects – They included the selection of related projects and valuable interface identification.

11) Communication Plan – The definition of the project's follow-up and technical meetings, its members, reports to be prepared, and forms of communication and dissemination of the results, with the definition of the indicators to be monitored by each activity and how they are measured.

12) Financial Expenses – Defined by each project activity, by the nature of the expenditure carried out and the planning of the financial resources' execution to identify the primary and probable sources of financing (MODEL_PROJECT_ELABORATION).</td></tr>
<tr><td>CASE 2</td><td>- The CASE 2 team developed an analysis of the users' context and needs after the production of knowledge.
- The problem and the need for knowledge were identified, mostly, by knowledge producers and health professionals, acting as intermediaries for knowledge users.
- They sought to work with health workers to find the format and the most relevant channels to disseminate research products to patients with diabetes.
- KT opportunities and obstacles were analyzed, but corresponding solutions have still not been identified.
- Specific objectives were defined for patients with diabetes and health workers.
- Focus on making the team's output more widely known, influential, and useful through interactions with the knowledge users via appropriate channels such as individual meetings with patients and health workers.</td></tr>
<tr><td>CASE 3</td><td>- The analysis of the context and users' needs was developed after the production of knowledge.
- Factors linked to organizational characteristics such as political climate and financial support were cited as barriers to knowledge production.
- Knowledge producers identified the problem or the need for knowledge using research evidence and verifying with knowledge users.
- Research assistants were mostly Manguinhos residents.
- KT opportunities and obstacles were analyzed, but corresponding solutions have still not been identified.
- Specific objectives were linked to the Manguinhos area in general.</td><td>- Projects presented KT objectives based on the analysis of context and user needs.
- Knowledge producers emphasized the difficulties they encountered during the definition of products.
- The management committee proposed a contextual analysis to knowledge producers.
- Knowledge users' needs were analyzed after the knowledge was produced, sometimes upstream from the project, sometimes during the project, depending on the type of study and research team.</td></tr>
</table>

Dimension 1 – Analysis of the Context and Users' Needs		
CASE Teams		**PDTSP-*Teias* Network**
	- Focus centred on creating a process to support and facilitate the use of research results by Manguinhos residents.	- The problem or the need for knowledge was verified among knowledge users, mostly Manguinhos residents. - The problem and the need for knowledge were identified, mostly by knowledge producers and health professionals, acting as knowledge users. - KT opportunities and obstacles were analyzed. However, corresponding solutions were not identified. The network's general objective was defined from the viewpoint of PDTSP-*Teias* steering and management committees - This dimension was predominantly integrated.
All Cases	- KT objectives were based on the analysis of context and user needs. - The three cases integrated factors linked to the actors such as availability, motivation, and attitude toward change, as well as organizational characteristics such as availability of resources, political climate, and economic situation. - The three case teams worked in different public health areas such as knowledge production, circulation and appropriation for health promotion, pharmaceutical services for patients with *Diabetes mellitus,* and environmental health. - The three cases predominantly integrated this dimension.	

The PDTSP-*Teias* network helped knowledge producers to analyze the context. Most knowledge producers had previous practical experience on how to disseminate knowledge in the Manguinhos area. The management committee knew that the projects "required great collaboration since most of them carried out activities that counted on the Manguinhos community's participation. A concern of the PDTSP-*Teias* network was that, in order to value the support, wisdom, and experience of the [Manguinhos] community, the activities were not evasive and repetitive" (DOC7).

Concerning the factors linked to organizational characteristics, one of the positive results achieved by the PDTSP-*Teias* network "was to obtain the transversality of knowledge [. . .] reducing the atomization of work and breaking with the strong logic of compartmentalization of [Fiocruz] units and each research [team]" (DOC7). Conversely, "financial resources [were] limited and did not meet all the research needs, [which was] one of the reasons for the demobilization of the actors in the [PDTSP-*Teias*] network" (DOC8).

The timing of the analysis of knowledge users' needs varied. Sometimes it was done after the knowledge was produced, sometimes upstream from the project, or during the project depending

on the type of study and research team. It was due to "the difficulty of aligning the research interests and work methodologies of [knowledge producers] as initially foreseen, even with the working groups' adoption" (DOC8). Research teams decided to create products "applicable to the SUS or the [Manguinhos] area" (DOC8). However, according to the PDTSP-*Teias* network assessment carried out in 2013, "one of the aspects not covered in the elaboration of the products of the research [teams] was its usefulness [to the SUS] since most of them did not reflect the actual needs of SUS or the [Manguinhos] area" (DOC8).

5.3.2. Dimension D2 – Knowledge to be Translated

5.3.2.1. Dimension 2 Highlights

- The PDTSP-*Teias* network helped knowledge producers to plan measures designed to make the KT products content clear, accessible, and useful to knowledge users, even though most knowledge producers and management committee members did not have practical experience and knowledge about how to translate knowledge into action.
- The PDTSP-*Teias* network facilitated knowledge dissemination about health issues in the Manguinhos area. The network published a book and a portfolio explaining the PDTSP-*Teias* network practice.
- The PDTSP-*Teias* network made the main types of knowledge (research-based knowledge, tacit knowledge, knowledge derived from data analysis, and knowledge from users/clients) more understandable within knowledge producers and Fiocruz units (Table 10).

Table 10: D2 Cross-Cases Analysis

Dimension D2 – Knowledge to be Translated		
CASE Teams		**PDTSP-*Teias* Network**
CASE 1	- The KT process was based on multiple types of knowledge, such as the social determinants of health and local knowledge. - The CASE 2 team integrated and adapted knowledge, creating knowledge products suitable to knowledge users. - There was an effort to translate knowledge in a spiral translation mode that integrates the	- The KT process was mainly research-based. - In some projects, the KT process was based on tacit knowledge and knowledge derived from data analysis. - Knowledge to be translated is a "two-way process."

Dimension D2 – Knowledge to be Translated		
CASE Teams		**PDTSP-*Teias* Network**
	knowledge of knowledge users and makes them co-producers of the knowledge produced. - Previous experience made the content clear, accessible, and useful to the knowledge users. - Content and language were considered central elements of health promotion. - Different languages were used to advance the process of shared production. The team was flexible and prepared to deal with different types of knowledge. - Knowledge from users was more often recognized in the elaboration of KT strategies than at the beginning of the research. - This dimension was predominantly integrated.	- Difficulty to talk to knowledge producers and knowledge users about the knowledge to be translated. - They tried to introduce KT practices based on the three main types of knowledge. - Initially, the management committee did not understand the entire KT process. However, they knew the necessity of giving back to knowledge users. - To facilitate communication with the Manguinhos community, locals were hired to work with the management committee. - The PDTSP-*Teias* management committee asked knowledge producers to plan measures to make the content clear, accessible, and useful to the knowledge users. - The management committee facilitated resource use between Fiocruz units. - This dimension was predominantly integrated.
CASE 2	- The KT process was based on a few types of knowledge, mostly research-based knowledge and tacit knowledge. - Content that was adapted collaboratively with Manguinhos residents improved the viability of the material to be translated for knowledge users. - Data collection, including interviews with different health professionals (managers, doctors, nurses, pharmacists, community health agents), involved in the care of diabetic patients in the Manguinhos area. - The goal was to make the content clear, accessible, and useful to knowledge users. - Efforts were undertaken to fit knowledge produced to users' needs in workshops with health professionals available to present the results and collectively discuss a set of general and specific recommendations. - This dimension was moderately integrated.	
CASE 3	- The KT process was mostly research-based knowledge and knowledge derived from data analysis. - KT products were frequently developed based on knowledge derived from data analysis, such as a scientific articles, doctoral thesis, and book chapters. - The goal was to make the content clear, accessible, and useful to the knowledge users. - The team met regularly to discuss the research project. - This dimension was moderately integrated.	
All Cases	- In all three cases efforts were made to incorporate different types of knowledge.	

Dimension D2 – Knowledge to be Translated		
CASE Teams		**PDTSP-*Teias* Network**
	- Most of the knowledge was referred to as research-based knowledge. - Knowledge users expected research products to make sense to them. - Factors linked to knowledge to be translated with clarity and accessibility of language were difficult to be achieved by CASE 2 and CASE 3.	

As the PDTSP-*Teias* network was considered a collaborative research network, the KT process was mainly research-based. “There were several groups of [knowledge producers] from different Fiocruz units, which together [formed] the organizational base of the PDTSP-*Teias* network” (DOC 9). The PDTSP-*Teias* was considered a dynamic network “seeking to integrate and reintegrate the activities and products of the research teams, reducing the exclusively personal and autonomous production through institutional collaboration between Fiocruz units” (DOC9). In addition, in some projects, the KT process was based on tacit knowledge and knowledge derived from data analysis even though talking about different forms of KT to knowledge producers was demanding. A management committee member mentioned that KT concepts are abstract

> "for those who [did] not have this concern that researchers have, who study [KT] scientifically, theoretically from the purest science [. . .] they do not have our vision. There were very few people who understand this without being an abstract thing" (Interview 3).

The management committee did not know how to talk to knowledge producers and knowledge users about the knowledge to be translated. “They realized that [knowledge producers] had these same issues, but when they talked about [KT], people [were] amazed. Talking about translating knowledge was wonderful, but basically [knowledge producers asked]: will this give me money for the grant process?" (Interview 3). Thus, the management committee "did not know if the network helped in the KT process, because to them, the translation would be done when the [knowledge producer and knowledge users] understands that this is a two-way process" (Interview 6). For the management committee, knowledge to be translated “it is not just [them] talking to the [knowledge producers and knowledge users]," instead, they have to talk to each other to appropriate this [knowledge] (Interview 3). They tried to introduce KT practices based on the three main types of knowledge. As reported by the management committee,

> "they sit in a conversation circle and explain [their] work, and a [knowledge producer] leave that and says: "Damn, this will make a difference in my life." It is what they were trying to bring back in [knowledge producers]. They talked to very top-of-the-line [knowledge producers] who were so concerned with publication in Science, for example, but who could not speak to others who did not have this type of publication, who did not have the Science, or CAPES, or CNPq vision and productivity scholarship. That is what [they were] discussing [. . .] [this is] how they bring [knowledge producers] back to talk to the people and civil society [. . .] [so as] to understand what the decision-maker wants. Because sometimes, within his research, he has the answer that the decision-maker needs, but he does not know, nor does the decision-maker have time or experience to read a research report, which is what [knowledge producers] do" (Interview 3).

Management committee members were "initially more focused on the [Manguinhos] survey[7] than anything else," but "little by little they got involved with the other projects in an attempt to understand how [the authors of] these projects could better talk with the community or give feedback to" it (Interview 6). Until then, the management committee did not understand the entire KT process. Nevertheless, they knew "the importance of giving back to the community of Manguinhos" (Interview 6). To facilitate the communication process with locals, the management committee "hired members of the [Manguinhos] community to work" in the committee (Interview 6).

According to the evaluation of the PDTSP-*Teias* network carried out in 2013, "this distance between the academic world and policy management caused an incongruity between the network's objectives and its effective possibility of collaboration. This distance was also reflected in the relationship between [knowledge producers] and social groups in Manguinhos" (DOC8).

Regarding content adaptation, the PDTSP-*Teias* management committee asked knowledge producers to plan measures to make the content clear, accessible, and useful to knowledge users this despite the fact that most knowledge producers did not have any practical experience and knowledge about how to translate knowledge into action. Because of past Fiocruz research experiences, knowledge producers made a considerable effort to ensure that the projects satisfied knowledge users 'needs.

> "In Brazil, before [we adopted] this research financing model linked to CAPES [Coordination for the Improvement of Higher Education Personnel] scores, we had

[7] More information about the Manguinhos survey on D5.

> [another] way of qualifying research back in the 70s. [At that time] for example, Fiocruz was a reference for doing quality research directly with [knowledge] users. The research was carried out with knowledge user questions " (Interview 3).

Evidently, this form of research involving knowledge producers and knowledge users "has greatly changed in recent decades" (Interview 3).

The management committee intended to create a product suitable to the reality and language of potential knowledge users. For this, it sought support from the Fiocruz communication sector to translate knowledge products developed by the projects. The research teams "from the Museum of Life already had a certain experience. The people from the School of Public Health also had [their own] experience. [They were] surrounding themselves with [communication experts] to try to make knowledge producers better to communicate their research results" (Interview 3). For the PDTSP-*Teias* network evaluators, "important impacts were generated by the [PDTSP-*Teias*] network, such as the work process, the construction of its information processing software, and how the results were presented" (DOC8). On the other hand, "a lack of definition, regarding products that produced impacts and that were innovative, persisted" (DOC8). Some knowledge producers had "previous experience in participatory and applied research, [working on knowledge] products that would have direct results to the target audience, such as booklets, videos, and games" (DOC8).

5.3.3. Dimension D3 – Knowledge Users

5.3.3.1. Dimension 3 Highlights

- The PDTSP-*Teias* network facilitated the identification and prioritization of knowledge users, meaning that the different knowledge users were selected and classified beforehand.
- There was a lack of more in-depth information on how PDTSP-*Teias* network's participants made contacts regarding potential knowledge users in specific projects, how they brought references concerning the knowledge producers' knowledge about possible knowledge users, and how they intended to make the approximation to potential knowledge users.

- The PDTSP-*Teias* network helped knowledge producers to better understand the knowledge users' context.

  The PDTSP-*Teias* network helped knowledge producers obtain good knowledge about knowledge users; however, they did not figure out how to collaborate with them (Table 11).

Table 11: D3 Cross-Cases Analysis

Dimension D3 – Knowledge Users		
CASE Teams		**PDTSP-*Teias* Network**
CASE 1	- The CASE 1 team identified and selected different knowledge users to be reached - Participants perceived the identification of knowledge users difficult. - The challenges in mixing different knowledge users and social actors in the *favela* was mentioned. - The CASE 1 team had previous experience in "getting to know" the audiences. - The identification and prioritization of knowledge users were possible because of the frequent interactions with Fiocruz colleagues and members of other institutions that work in health services. - Knowledge products had different audiences, such as tuberculosis patients, community health practitioners, schoolteachers, and students. - This dimension was predominantly integrated.	- The focus was on the Manguinhos community as a body of knowledge users. - It favored interactions between academics, decision-makers, civil society groups, and the SUS. - Manguinhos was the target area for research and partnerships. - It provided a means for knowledge producers to have access to the Manguinhos community. - It allowed knowledge producers to talk more with would-be research users. - It allowed knowledge producers to understand the context of knowledge users. - Knowledge about the Manguinhos community (knowledge users) was built up for years by Fiocruz's research intervention. - The steering and management committees had good knowledge about knowledge users; however, they did not know how to actually get them to work together. - This dimension was predominantly integrated.
CASE 2	- Evident description of the knowledge users' characteristics and preferences since they worked with patients with diabetes. - Consider knowledge users as one who appropriates the acquired knowledge but changes and improves a given reality. - The identification and prioritization of knowledge users allowed them to develop knowledge products and workshops mostly directed to health professionals and diabetes patients. - The different knowledge users to be reached were identified through a collaboration of the CASE 2 team, a multi-professional team, and the target users. - This dimension was predominantly integrated.	
CASE 3	- The CASE 3 team identified and selected different knowledge users were beforehand. - Knowledge users' preferences and characteristics were identified in a general way.	

Dimension D3 – Knowledge Users		
CASE Teams		**PDTSP-*Teias* Network**
	- Data collection enabled the characterization of some areas and knowledge users in a general way. - Some knowledge users participated in action planning, data collection, and data analysis. - KT products were mostly directed to knowledge producers (peers), decision-makers, and policymakers. - This dimension was moderately integrated.	

The PDTSP-*Teias* network helped knowledge producers obtain good knowledge about knowledge users; however, they did not know how to concretely work with knowledge users. Since the beginning of the PDTSP-*Teias* network proposal, the focus was on the Manguinhos community as a body of knowledge users. Thus, the network "did not have an open research call. They sent an open letter to researchers who wanted to work in the Manguinhos [area]" (Interview 6). "The PDTSP-*Teias* network [sought] to contribute [to the Manguinhos community] [. . .] through the health research and innovation component associated with promotion, prevention, and health care practices" (DOC9). Knowledge producers and their teams engaged in the PDTSP-*Teias* network "came up with various means, ways, and creative models to develop research [. . .] seeking greater [collaboration] to link academics, decision-makers, civil society groups, and the SUS, with the Manguinhos [area] as a space for research and partnerships" (DOC11).

The PDSTP-*Teias* network allowed knowledge producers to have access to the Manguinhos community. For example, when the knowledge producers were alone, when they arrived in the middle of the favela's alley, at first, it was awkward for them to talk to people. After knowledge producers participated in the Manguinhos survey, knowledge users got to know them. When they went to the health center, people would say: "Ah, I know such a person," and they continued calling and creating links (Interview 6). Consequently, the network allowed knowledge producers to interact more with those who might use the research. Sometimes knowledge producers were not even in a survey, which was done only with SUS users. However, they accompanied the workgroups, talked to workers, and accompanied the managers. For their part, the managers came to meetings. This took knowledge producers out of the "square box"; only then did knowledge producers understand the context of the knowledge users (Interview 6).

The PDTSP-*Teias* network comprehensive document called for the knowledge product to generate "a concrete return for SUS management and the improvement of people's lives [in the Manguinhos area]" (DOC9). According to the PDTSP-*Teias* network management, "networking is much more certain if you have a common theme [. . .]. [I]n the PDTSP-*Teias* network, the focus was all [on the health conditions of] Manguinhos [residents]" (Interview 3). In this respect, some characteristics of the knowledge users have been described in detail:

> "For almost 50 years, Manguinhos relied on only one health facility for primary care, the *Germano Sinval Faria* school health center of the *Sérgio Arouca* National School of Public Health, where the Manguinhos health clinic currently operates. In 2009, following the actions of the Growth Acceleration Program (PAC), the neighborhood received an emergency care unit, which was originally linked to the State Department of Health and was later municipalized. Attached to the emergency care unit, the *Victor Valla* Family Clinic was opened in April 2010" (DOC9).

The steering and management committees expected the PDTSP-*Teias* network "to produce concrete changes in the reorganization of the health care model and effective improvements in the health condition and quality of life of the Manguinhos community" (DOC9). The knowledge about the Manguinhos community (knowledge users) was built up during the years in which Fiocruz conducted its research. To the management committee, the Manguinhos area is

> "a complex place with slums, intense drug trafficking, various public facilities and almost all the contradictions that inhabit urban spaces, but, fundamentally, [it is home to] people who organize themselves to achieve new levels of good living. [There, they built] a space for research and action combined with reflection and construction of solutions to problems, especially in the field of primary care and health promotion" (DOC11).

The PDTSP-*Teias* network research teams knew beforehand that the Manguinhos area had unusual characteristics (Figure 12) (DOC18). As they pointed out, Manguinhos was "composed of thirteen communities that totaled about 50,000 residents in 2010, marked by poverty, violence, and intense drug trafficking. It had one of the worst Human Development Indexes (HDI) in the city" (DOC11). The management committee knew that "the Manguinhos community had several environmental, social and health issues" (Interview 6). The challenge of the PDTSP-*Teias* network was to know how to put all this together. For the steering and management committees, this was the purpose of the PDTSP-*Teias* network: "to show that the social determinants of health were much more important and were shown in different ways" (Interview 6). Thus, the committees

began to look for ways to organize information about knowledge users. "They wanted to show that this problem was important, by gathering information from other areas in order to highlight the problems in the Manguinhos area" (Interview 6).

Figure 12: Residents of the Manguinhos Area at a Fiocruz Workshop

By contrast, the management committee knew that "all this discussion about translation, [research] use, results, knowledge producers and knowledge users [. . .] was light-years from being able to reach the reality of the academic world and even more the reality of the world of those who will use the research (Interview 3). The management committee and knowledge producers knew that people expected academics to produce knowledge for them, or at least with them. They pointed out that this is a huge challenge for translating knowledge and promoting health in the Manguinhos area. In this sense, the management committee understood that "translation is when you want to pass on information to the target audience, be it society or decision-makers" (Interview 6). They knew that the research's impact was significant, but they still had no way to measure the social impact of the PDTSP-*Teias* network projects.

5.3.4. Dimension D4 – KT Partners

5.3.4.1. Dimension 4 Highlights

- The PDTSP-*Teias* network enabled connections between Fiocruz units. The interdisciplinary network model facilitated interactions between different partners.
- The PDTSP-*Teias* network facilitated interactions between knowledge producers from different Fiocruz units through meetings and daily interactions.

- The lack of adequate KT tools and support was a barrier to the development of concrete partnerships (Table 12).

Table 12: D4 Cross-Cases Analysis

Dimension D4 – KT Partners		
CASE Teams		**PDTSP-*Teias* Network**
CASE 1	- Key social actors concerned with the KT process were identified, and their roles were defined. - Internal collaboration within Fiocruz units. - Potential partners and intermediaries were identified. - Intermediaries were named and described as "resident-researchers." - Participants described themselves as knowledge producers and intermediaries in the KT process. - The complexity of defining KT partners was highlighted as was their role in a more extensive network that included multiple levels of governance and multiple agents. - KT partners were perceived as relevant when they controlled the resources and knowledge required to act or provide access to other relevant KT partners. - Most of the key social actors were Manguinhos residents, local facilitators, and health workers. - This dimension was predominantly integrated.	- It acted as research network in Manguinhos partnering with academics, health services, the Manguinhos community, and different Fiocruz units. - It enabled connections between Fiocruz units. - It facilitated interactions among knowledge producers from different Fiocruz units by involving them in meetings and daily interactions. - It favoured the transversality of knowledge among Fiocruz units. - The steering and management committees acted as knowledge brokers helping knowledge producers and knowledge users to question themselves and elaborate research-based innovative products with direct use in the Manguinhos area. - This dimension was predominantly integrated.
CASE 2	- Key social actors concerned by the KT process were identified and selected. However, their roles were not openly clarified. - Internal collaboration within Fiocruz units. - This dimension was moderately integrated.	
CASE 3	- Key social actors concerned by the KT process were identified and selected. However, their roles were not openly clarified. - Hiring people from the Manguinhos community was a challenge. - This dimension was moderately integrated.	

The management committee tended to interfere in the individual research projects until they noticed that they were “going crazy” (Interview 3). Since then, its job was about "managing and coordinating the PDTSP-*Teias* network, dealing with finances and administration. At the same time, it gave the full scientific support that Fiocruz and [knowledge producers] needed: from selecting *ad hoc* consultants who [were] experts on the subject to talking to SUS managers” (Interview 3). All actors involved in the KT process (partners, i.e. people engaged in the same

activity, like knowledge producers from different projects; intermediaries, i.e. go-betweens who tried to bring about agreements or reconciliation, like the members of the steering committee; potential opponents, like reluctant decision-makers) were identified, and their roles defined (Figure 13).

The PDTSP-*Teias* network relied on the directives and actions of the steering committee, which included representatives of:

i. the Strategic Planning Directory (DIPLAN), who provided the Fiocruz Presidency with "advice and subsidies for the formulation, implementation, and evaluation of public health policies, instruments, and processes for planning and management" (DOC12);
ii. the Vice Presidency of Environment, Health Care, and Health Promotion (VPAAPS), which "assists and coordinates Fiocruz actions in the areas of its expertise, integrating partners, technical, scientific and administrative units and offices to meet the needs of the SUS" (DOC13). The VPAAPS is also a Collaborating Center of the Pan American Health Organization and the World Health Organization, promoting "the Social Determinants of Health, according to the Rio Political Declaration and supporting the Health Systems Structural Networks in health surveillance, prevention, and control" (DOC14);
iii. the Rio de Janeiro Municipal Secretariat of Health and Civil Defense (SMSDC-RJ);
iv. the *Germano Sinval Faria* Health Center School (CSEGSF/ENSP), a unit dedicated to “the comprehensive promotion of health and welfare of the people [of Manguinhos] and to the development of education, research, and technology in public health"(DOC15);
v. the *Teias*-School Manguinhos, an initiative that began in 2009 to co-manage “health in Manguinhos, based on a contract between the Municipal Health and Civil Defense Departments of Rio de Janeiro and the National School of Public Health (ENSP)/Fiocruz, through its support foundation – Fiotec” (DOC16);
vi. the PDTSP-Vice Presidency of Research and Reference Laboratories (PDTSP/VPPLR);
vii. the managing board of the Nacional School of Public Health (ENSP Direction) (MEETING_06jul2010); and
viii. the Intersectoral Management Council of the *Teias*-School Manguinhos (IMC).

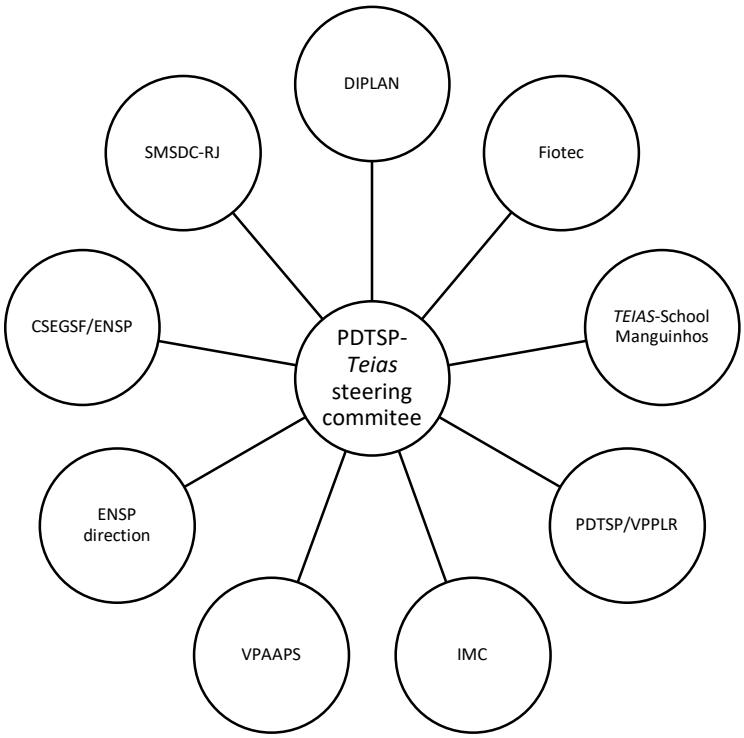

Figure 13: PDTSP-*Teias* Network Partners and Members of the Steering Committee

The PDTSP-*Teias* network was considered a research network in the Manguinhos area, with partners in "academe, health services, and civil society" (DOC10). It included knowledge producers in Fiocruz units that traditionally did not speak to each other. "There were knowledge producers who worked on the issue of public health with a more humanistic approach while others had a more [scientific] approach" (Interview 6). Partners started to look a little at the projects, eventually trying to form groups. This occurred when the first general analysis of the projects by themes was made. And then the management committee "started to see that it was worthwhile approaching all the projects to [. . .] understand better what they were doing" (Interview 3). The notion of networking was referred to as "a continuous process of [collaboration], integration, and interdisciplinarity. These principles guided the PDTSP-*Teias* network in order to understand and develop new ideas and processes resulting from the integration between the actors, configured and reconfigured by the collective construction of knowledge" (DOC11). The PDTSP-*Teias* network management model was described as moments with

> “the steering [and management] committees, some moments with the [knowledge producers]. Sometimes they were all together; sometimes, there were *ad hoc* researchers together, and sometimes not. It was a whole management problem.” In the absence of “a step by step [conceptual KT tool], they did it by intuition" (Interview 3).

The committee's idea was "to build together and build in partnership" with knowledge producers (Interview 3).

Methodologically, the management committee received the PDTSP’s full support since it was created in 2000 and "worked with other networks, but only had a network title (Interview 3). Thinking about networking led the management committee to "think about a group of people, or organizations working along with them, for the common goal of articulating interests [and] systematically and constantly agreeing on deadlines and activities " (DOC11). The management committee held meetings in which they organized discussion groups with the DIPLAN and the Fiocruz’s planning department. "Research teams approached each other over important topics or affinities" (Interview 6). The management committee then saw that "only those who wanted to work with the Manguinhos community stayed in the PDTSP-*Teias* network” (Interview 6). The management committee mentioned that the projects “were Frankenstein-like. They put together pieces of each other's projects to try to handle them. They tried to cope with innovation and new ways of researching in an understandable way" (Interview 6).

According to the management committee, "today everything is called a network, but nobody talks to anyone in practice. They just say it is a network" (Interview 3). At the time of the networking boom, this is what the management committee saw the most in Brazil. Yet in the Brazilian context, seeing knowledge producers and knowledge users sitting together, discussing their research and methodologies with a regulatory agency (in this case over the PDTSP program and under the coordination of the PDTSP-*Teias* network) was highly innovative. "When it took work to stay in the network, requiring participation in meetings, people started to leave the network. In the end, [the PDTSP-*Teias* network] found itself with 14 projects” (Interview 6). The management committee realized that the PDTSP-*Teias* network involved “a bunch of [knowledge producers] working so hard on a specific topic that they had to at least talk to each other” (Interview 6). However, they had "no communication tools, like a Facebook page or a Google virtual community;” they had none of that (Interview 6). They exchanged e-mails and found that the best

way to get knowledge producers and knowledge users to interact with each other was by getting them to talk to each on a regular basis.

5.3.5. Dimension D5 – KT Strategies

5.3.5.1. Dimension 5 Highlights

- The PDTSP-*Teias* network helped knowledge producers discuss a joint strategy theme, as well as formulate, talk, and create standard tools in a joint creation process. Members of the PDTSP-*Teias* network management committee acted as intermediaries or knowledge brokers who bridged the gap between research teams and the steering committee, which was fundamental in improving communication and KT strategies.
- The PDTSP-*Teias* network facilitated knowledge producers' and knowledge users' interaction with CGI support, showing that the PDTSP-*Teias* network facilitated networking in terms of information sharing at the individual and organizational levels.
- The PDTSP-*Teias* network got the Fiocruz reference research teams to realize the importance of having new knowledge producers in the network. Thus, new knowledge producers could grow and participate in journals, scientific papers, and other research teams.
- The PDTSP-*Teias* network facilitated the introduction of the KT strategies' concept to knowledge producers (Table 13).

Table 13: D5 Cross-Cases Analysis

Dimension D5 – KT Strategies		
CASE Teams		**PDTSP-*Teias* Network**
CASE 1	- KT strategies were based on multiple interventions combining dissemination and uptake strategies. - Detailed KT strategies and monitoring mechanisms were planned to ensure that the KT strategies were accomplished. - KT strategies were selected and planned in accordance with the KT process's general objective and the type of knowledge translated. - Implementation of a Briefcase called "A Territory in Motion."	- Most of the PDTSPT-*Teias* network's KT strategies were consistent with the objectives identified. - The management committee and thematic group coordinators worked together to develop products and strategies. - KT strategies were based on multiple interventions combining dissemination and uptake strategies.

Dimension D5 – KT Strategies		
CASE Teams		**PDTSP-*Teias* Network**
	- The Briefcase synthesized the connection between local and academic knowledge. - Each problem situation became a generating theme, and each material produced was a method of shared knowledge production. - The KT strategies selected were based on multiple interventions that combined dissemination and uptake strategies. - A Facebook page was created to give everyone a venue to access and communicate with each other. - Social media was used to raise awareness. - The implementation stages for all KT strategies were presented in detail, and monitoring mechanisms were planned to ensure they were carried out. - This dimension was predominantly integrated.	- The PDTSP-*Teias* network pursued the objective of combining multiple KT strategies. - For many projects, participation in thematic groups proved confusing and ineffective in promoting KT activities. - The implementation stages of most of KT strategies were presented in detail, and monitoring mechanisms were planned to ensure they were implemented. - Knowledge users from the Manguinhos area participated in a project to evaluate health websites. - KT products: a book, a portfolio, and the Manguinhos survey. - KT Strategy included collaboration and trust of knowledge producers and knowledge users. - Results were much less meaningful than as proposed by the steering committee of the PDTSP-*Teias* network. - This dimension was moderately integrated.
CASE 2	- KT strategies were based on multiple interventions combining dissemination and uptake strategies. - Detailed KT strategies and monitoring mechanisms were planned to ensure that the KT strategies were accomplished. - This dimension was predominantly integrated.	
CASE 3	- KT strategies were selected and planned in accordance with the KT process's general objective and the type of knowledge translated. - KT strategies were based on multiple interventions focusing on dissemination. - This dimension was moderately integrated.	
All Cases	- CASE 1 and CASE 2 teams collaboratively developed a health promotion game.	

The PDTSP-*Teias* network facilitated the introduction of the KT strategies' concept to knowledge producers. KT strategies – other than scientific publications and conference communications, such as access to a knowledge broker and knowledge users' access to resources and tools – were novel concepts to most research communities and funding agencies in Brazil.

The PDTSP-*Teias* network was "a program to develop products for technological development in the area of public health [. . .] that would concretely interfere with the SUS" (Interview 3). They had thematic working groups. "These groups had a coordinator" who "was both the thematic group coordinator and the project coordinator" (Interview 6). Thus, the management committee and the thematic group coordinators worked together to develop KT products and strategies.

KT strategies were based on multiple interventions that combined dissemination and uptake strategies. The PDTSP-*Teias* network management committee tried "to change the management style to collaborative in which people work together with a single product from the entire network. Thus, [this product] was no longer the product of each research" (Interview 3). The PDTSP-*Teias* network pursued the goal of combining multiple KT strategies, and this must be highlighted. Conversely, the results were much less meaningful than what the steering and management committees of the PDTSP-*Teias* network had proposed. In many projects, participation in thematic groups proved confusing and ineffective in promoting KT activities.

The implementation stages of most of KT strategies were presented in detail, and monitoring mechanisms were planned to ensure they were implemented. This was part of the PDTSP-*Teias* network KT strategy to evaluate health websites with the Manguinhos community. For example, if the group's topic was dengue, they would ask themselves: "What do the people of Manguinhos know about dengue? Are these websites intelligible or not for the Manguinhos community? Did the community have ways of evaluating the website?" (Interview 6). Afterwards, knowledge users from Manguinhos were invited to participate in the project and evaluate the websites.

> "For [knowledge producers], these sites were great; they could understand them. The big surprise was that Fiocruz's website got the worst evaluation because it used a style of language that [knowledge users] did not understand. Little by little [knowledge producers] evaluated the work in order to understand what Manguinhos residents understood about health. Thus, from then on, they improved their work" (Interview 6).

With this, the PDTSP-*Teias* network management committee realized that KT products or KT strategies could not be isolated from the others. "They often had no interaction with other knowledge producers" (Interview 6). Thus, the management committee helped thematic groups "meet and discuss shared topics, [as well as] formulate, talk, and create shared tools." Subsequently, "the creation process was a process of joint creation" (Interview 6).

Another KT strategy by the PDTSP-*Teias* network was the Manguinhos survey. The Manguinhos health and social conditions survey was conducted over almost two years. The network's management committee did not plan the survey. Because of violence in Manguinhos, knowledge producers were unable to enter the community. The survey cannot be considered one of the network's "unexpected products". It was a knowledge producers' necessity, since they lacked the

latest health data for Manguinhos residents. “The survey was not a network product, nor was it a network project” (Interview 6). During the survey, the management committee selected Manguinhos residents to work with them, making a wide-ranging effort to ensure that people living in one Manguinhos region did not enter a different Manguinhos address because of drug trafficking. “The [Manguinhos residents selected] could be confused as drug dealers. The issue of violence was also very seriously for the fellows living in the [Manguinhos] area" (Interview 6). On several occasions, knowledge producers did not want to enter the Manguinhos area to collect demographic and socioeconomic data. Because of this issue, the PDTSP-*Teias* network management committee invited a Fiocruz epidemiologist, who had worked on the Manguinhos survey in the 1980s, to teach them how to conduct the new survey. The survey results are currently available online on the DATASUS Tabnet http://tabnet.datasus.gov.br/cgi/deftohtm.exe?manguinhos/socioeconomicos.def. However, the management committee realized that many people who requested the data could not work with the database. The situation was frustrating. At least the data are now available to students doing their medical residency or a Master's Degree.

After the survey was done, knowledge producers’ teams presented their results to all the other teams. "They joked that it was [like] a counseling session. Everybody could provide advice about each other's work. What was important was learning within each project" (Interview 6). The management committee provided advice as well. Knowledge producers saw the management committee as another knowledge producer taking another look at the projects. The management committee looked at the projects in order to have a response focused on the Manguinhos community rather than on management. Up to that point, the management committee did not understand that they would be valuable to the KT process. They only perceived the management of the network as a vital factor for knowledge translation in the subsequent network, the PMA network.The management committee partnered with the Intersectoral Management Council of the *Teias*-School Manguinhos/*Conselho de Gestão Intersetorial* (CGI) to help knowledge producers talk to knowledge users. The purpose of the CGI "was to help in the formulation, monitoring, and control of the execution of health policy within the [Manguinhos area] and the *Teias*-School Manguinhos, covering as well as economic and financial aspects, strategies, and the

promotion of social participation" (DOC17). At the CGI, knowledge producers presented their project, and the Manguinhos community (knowledge users) discussed that project. This provided knowledge producers with feedback from the community.

“PDTSP-*Teias* network‘s products included [knowledge users] from the Manguinhos area. Thus, they could give feedback through the community” (Interview 6). The PDTSP-*Teias* management committee noted “a certain hostility; this was a very long-term effort [to build] trust for [knowledge producers] and reduce distrust and therefore [have] also fewer disputes" (Interview 3). As the management committee got closer to knowledge producers, “talking all the time, both as a group and in the general network," the impression was that the disputes became less frequent. In contrast, “when the contact was too wide, the impression was that the disputes became more frequent [between knowledge producers]” (Interview 3). The management committee did not have to mediate knowledge producers' relationship, but they had to be present so that knowledge producers could have a feeling of security. When the management committee was playing good neighbor, investing time with knowledge producers and knowledge users, things worked the best. The management committee "had to take calls from knowledge producers even if it was at six o'clock in the afternoon" (Interview 3). When they did not answer the phone, things could go wrong, and rebuilding trust was difficult. The job depended on trust, which was the primary strategy the PDTSP-*Teias* network used. Overall, the PDTSP-*Teias* network relied on two communication tools. One was a WhatsApp group that attracted some knowledge producers, because not all network participants wanted to participate in another WhatsApp group. The second tool was a Google virtual community, where information and presentations were shared so that all research teams had access to all network documents.

For the management committee, the PDTSP-*Teias* network was an extremely innovative strategy. They "never imagined that networking would be such a great thing. They never imagined that research that gives a result to the SUS would be better with a network" (Interview 3). The management committee had the feeling that the network was "a mini work community." The network was "something that gave security, a feeling of tree roots in the earth." For the management committee, this was very interesting. "They did not know how many knowledge

producers felt that way. They did not know if everyone felt the same way, but some certainly did" (Interview 3).

> "A root deep in the earth has this meaning of collective work. It is possible to do this in the science field, and it is possible to do it in the peculiar way they had in the network which was a network to give back to the SUS" (Interview 3).

For the management committee, the PDTSP-*Teias* network as a KT strategy allowed knowledge producers who were not yet recognized, who were not "cutting-edge yet, who were not a reference in their area, to be inserted in work with research teams that were a Fiocruz reference" (Interview 3).

The management committee mentioned some challenges associated with the chosen management strategy. The first was "not having a step-by-step methodology and not having anyone to talk to [in Brazil]" (Interview 3). The other challenge was to re-establish the strategy's continuity so that it became "something institutional at Fiocruz to the point of not ending when the [steering] and management committees were ended" (Interview 3). It was perhaps the biggest challenge for the management committee, more than getting resources for KT strategies itself. It was a challenge to convince the Fiocruz Presidency to be an institutional venue to bridge the gap among knowledge producers who wanted to do science whose results would directly go to the SUS or knowledge users. Another challenge was related to developing a shared style of language so that the management committee could speak to the 14 research teams, and everyone could communicate with each other. "There was a language habit of talking about databases, and variables, and populations, and programs" (Interview 6). The management committee had to adapt the language in order to communicate with knowledge producers who wanted to work this way. For the committee, it was very difficult to speak with knowledge producers and knowledge users from different backgrounds; it was an ongoing process of adaptation.

The last PDTSP-*Teias* network KT strategy implemented was a collaborative book. The management committee wanted to present the PDTSP-*Teias* network model, and "the best way to describe the network creation process was through a book detailing each project and the network's achievements" (Interview 6). As a KT product and strategy, the PDTSP-*Teias* network

had, "in a non-palpable way, the collaboration and trust of knowledge producers. The tangible products were a book and a portfolio" (Interview 6) (Figure 14). Nevertheless, the management committee understood that these products would not reach the target group. "It was still a language that was not the language of the Manguinhos community. It was still a cross between academic and non-academic [languages]" (Interview 6). Even knowing that the strategy was not 100% agreed upon, the management committee invested in these strategies because they "understood that it was a way to make [knowledge producers] think about the issue of communicating the projects' results, which in Brazil was not an activity valued by funding agencies" and research communities (Interview 6). In Brazil, when knowledge producers are asked what their KT product and communication strategies are, "researchers immediately say that their product is a scientific article, and the communication will be done via scientific forum" (Interview 6). This was not what the management committee wanted as a KT strategy of the PDTSP-*Teias* network.

Book Portfolio

Figure 14. PDTSP-*Teias* Network Knowledge Translation Products

5.3.6. Dimension D6 – Overall KT Approach

5.3.6.1. Dimension 6 Highlights

- The PDTSP-*Teias* network implemented a mix of the two approaches. The initial idea was to have a more integrated KT approach. In one proposal, the knowledge production stage considered knowledge users' needs and context throughout the projects. However, most of the research team's KT began after the knowledge was produced but took into account the needs and the context of the knowledge users.
- The integrated KT approach was difficult to understand and to put into practice by the network projects. However, the network fostered occasional interaction between knowledge producers and knowledge users.
- The network predominantly implemented the End-of-grant approach (Table 14).

Table 14: D6 Cross-Cases Analysis

Dimension D6 – Overall KT Approach		
CASE Teams		**PDTSP-*Teias* Network**
CASE 1	- Combination of the two approaches: KT integrated and KT End-of-grant. - The KT Integrated approach was implemented predominantly - The KT approach started at the knowledge production stage and took into consideration the needs and the context of the knowledge users through the project. - This dimension was predominantly integrated.	- A mix of the two KT approaches. - The initial idea was to have a more integrated KT approach. However, most of the research teams' KT began after knowledge was produced and the needs and the context of the knowledge users were taken into account. - The integrated KT approach was difficult to understand and to put into practice. - The End-of-grant approach fostered occasional interaction between knowledge producers and knowledge users. - This dimension was moderately integrated.
CASE 2	- The project started after knowledge was produced and the needs and the context of the knowledge users were taken into account. - The End-of-grant approach was predominant, fostering occasional interaction between knowledge producers and knowledge users. - Collaboration between health professionals (knowledge users) and knowledge producers was developed. - This dimension was moderately integrated.	
CASE 3	- Mostly End-of-grant approach fostered occasional interaction between knowledge producers and knowledge users. - Community participation was part of the scope of the project.	

Dimension D6 – Overall KT Approach		
CASE Teams		**PDTSP-*Teias* Network**
	- Knowledge users participated in meetings with laboratory technicians and knowledge producers. - This dimension was moderately integrated.	

Knowledge translation (KT) was considered a “continuous process of passing on to other audiences its production information [and the] knowledge acquired through research or life experience. KT was also [designed] to incorporate knowledge from other audiences in the research” (Interview 6). For the management committee, KT was a two-way path. It was not just the knowledge producers who spoke to the knowledge users, but also the knowledge users who had to speak to the knowledge producers, and they had to incorporate that knowledge into action. For the PDTSP-*Teias* network, working in a network meant exchanging information about projects, [be they] specific work projects or life projects. Knowledge producers sometimes exchanged information about work that had already been done and about the ways they solved the problems they confronted. Therefore, the PDTSP-*Teias* network often worked "without any systematization, because they had no documents, and no established protocols or terms of cooperation. It was still an informal conversation" (Interview 6). At the beginning, the integrated KT was less a theoretical conversation than a way to bring knowledge producers closer, talking about how to communicate research results, how to communicate producers’ knowledge, and how to connect to the issue of public engagement.

For a few years, the management committee talked about communicating research results, but some knowledge producers still did not understand the integrated KT concept. Past and present Fiocruz presidents and some unit directors understood certain knowledge translation concepts. However, it still took a long while before the integrated translation of knowledge came into its own. “The management committee did not know if they would be able to overcome this challenge” (Interview 3). The management committee

> “tried to regain the very top [knowledge producers] who were very concerned with being published in Science for example, but who were unable to speak with other [knowledge producers] who did not get this type of publication, and did not have Science, CAPES, CNPq points of view and productivity scholarship” (Interview 6).

They discussed how to bring knowledge producers back to talk with residents, associations, and decision-makers, as well as how to get knowledge producers to understand what decision-makers needed. They knew that often, within the knowledge producer's research, they already had the answer decision-makers needed. The management committee recognized that decision-makers had neither the time nor the experience to read a research report or scientific articles written in a scientific language. Some knowledge producers did not know that they could contribute to public policies. They were unaware of the importance of the engaged work of the knowledge producer with decision-makers. In this sense, the PDTSP-*Teias* network "was there to trim these edges and try to make communication more effective" (Interview 6). To this end, the management committee could count on people already involved in the field of communication for help. "Knowledge producers at the Museum of Life/*Museu da Vida* already had a certain experience, knowledge producers at the National School of Public Health/*Escola Nacional de Saúde Pública* (ENSP) also had some experience" (Interview 6). Consequently, the management committee tried to get knowledge producers to better communicate research results. The management committee brought the newest questions about communicating research results to knowledge producers; at the same time, knowledge producers brought other questions about the End-of grant approach.

The PDTSP-*Teias* network succeeded in systematizing knowledge translation. “The PDTSP-*Teias* network managed to make the KT [concept] understood in a more palatable way within Fiocruz [units]" (Interview 6) because many people talked about it. However, the PDTSP-*Teias* network did not help in the integrated KT approach. "For the integrated KT to be successful, knowledge producers needed to understand that the integrated KT is a two-way path" involving knowledge producers and knowledge users (Interview 6). Thus, it was mainly the End-of-grant approach that was integrated by the PDTSP-*Teias* network, through communication and disseminating scientific knowledge. They also facilitated another aspect of the KT process: the public involvement of science—making the knowledge producer more willing to talk about their project to the Manguinhos community.

5.3.7. Dimension D7 – KT Evaluation

5.3.7.1. Dimension 7 Highlights

- The PDTSP-*Teias* network did not plan the evaluation of the KT process and the KT's impacts, in terms of use and repercussions at the scientific, professional, organizational, and socio-political levels.
- The focus was on the PDTSP-*Teias* network's evaluation as an innovative management model between Fiocruz units (Table 15).

Table 15: D7 Cross-Cases Analysis

Dimension D7 – KT Evaluation		
CASE Teams		**PDTSP-*Teias* Network**
All Cases	- The three cases did not plan the evaluation of the KT process. - This dimension was not at all integrated into the three cases.	- No evaluation of the KT process in the strategic plan. - There was an evaluation of the network as an innovative program in Brazil's public health. - During the period analyzed, discussions about KT evaluation were of little significance to research teams. - This dimension was moderately integrated.

The PDTSP-*Teias* network did not include any evaluation of the KT process in the strategic plan. However, the management committee planned the network's evaluation as an innovative program in Brazil's public health. They had an agreement with the Fiocruz's evaluation experts "that as soon as the PDTSP-*Teias* network ended, they would have to make an assessment" (Interview 3). The evaluation of the PDTSP-*Teias* network's management model, carried out from June 2013 to December 2014, "sought to understand the context, the triggering factors of the processes, the interests and mobilizations of the actors involved, and the actions taken" (DOC8). The PDTSP-*Teias* network had no further discussion about KT right after launching the KT products. Nor did they get any feedback from the Manguinhos community on portfolio and book dissemination (products of the PDTSP-*Teias* network). "They only had the comments of some knowledge producers who thought the portfolio and the book were beautiful" (Interview 6).

Based on the evaluation team's findings, the purpose of the management committee in providing interaction between research projects and knowledge producers, "acting as a socio-technical network, mobilizing and involving actors from various segments and other networks, was not fulfilled as planned" (DOC8). In contrast, the management committee "allowed proposals collaboration and actions that were significant to the program's results, acting as a space for mediating interests, conflicts, attributions and institutional spheres between management, health services, and research" (DOC8). The management committee also promoted more cohesive participation of knowledge producers who remained in the PDTSP-*Teias* network.

The evaluation of the PDTSP-*Teias* network soon after it officially ended and the continuation of another network (PMA network) that also proposed KT practices from the beginning of the network showed that the management committee had concerns about this dimension. However, this was not implemented during the period of this study.

5.3.8. Dimension D8 – Resources

5.3.8.1. Dimension 8 Highlights

- The PDTSP-*Teias* network facilitated the use of resources (i.e. communication tools, laboratory equipment, and infrastructure resources) between Fiocruz units.
- The resources required for the PDTSP-*Teias* network and KT strategies included necessary resources like research funding, staff, and supply materials. However, they were deemed insufficient. The existence of resources aimed at knowledge translation was little planned and significant.
- Funds were used to create products, but many of them did not specify KT practices. Projects, which had already incorporated some KT practices, carried out KT as a principle of the research team, as shown by CASE 1, or had resources for the methodological procedure, as shown by CASE 2. However, the resources explicitly aimed at KT started, in fact, in the next network, after the PDTSP-*Teias* network was closed.
- The PDTSP-*Teias* network facilitated the sharing of funding between projects. However, the lack of budget management skills and tools proved to be a barrier to the integration of this dimension (Table 16).

Table 16: D8 Cross-Cases Analysis

Dimension D8 – Resources		
CASE Teams		**PDTSP-*Teias* Network**
CASE 1	- The CASE 1 team used LTM human, physical, and financial resources. They relied on the well-developed infrastructure of material resources.	- Resources went to research funding, staff, and supply materials. - Resources were deemed insufficient for KT itself. - The network helped the sharing of funding between projects. - Lack of budget management skills and tools. - This dimension was moderately integrated.
All Cases	- CASE 2 and CASE3 teams relied on a less developed infrastructure of material and financial resources. - The network's management committee managed all resources. - This dimension was not at all integrated into the three cases.	

The network research teams knew that “without funding, there would be no incentive for [knowledge producers] to participate in the network" (Interview 6). When the management committee invited knowledge producers to participate in the PDTSP-*Teias* network, it was assumed that the network had funding for the research. It is important to highlight the management committee's controversial practice of centralizing all project financing and the difficulty in rapidly handing out the necessary resources to implement specific projects.

"In terms of infrastructure, project management, and communication, the PDTSP-*Teias* network remained behind schedule. They knew they had no people to do this" (Interview 6). To reduce this gap, the management committee tried to work in partnerships to better communicate PDTSP-*Teias* network projects' results. Likewise, the PDTSP-*Teias* network obtained funding to hire people from Manguinhos, and research assistants to disseminate research results. The management committee knew that "it was necessary to get funding to hire journalists, or some professional who worked in communication and scientific dissemination" (Interview 6). They needed someone to do this work because they did not know how to do it.

At the time, “the PDTSP-*Teias* network had approximately one million reals (R$) (about $.5M CND) to spend over two years" (Interview 3). This amount was considered a useful resource for the type of research carried out by the network. What was quite different in other research groups was that a million reals were spent in six months to develop a certain piece of equipment. In clinical research, researchers could spend up to R$500,000 in just two months. The management

committee knew that traditionally in Brazil, spending in public health and social welfare was low. "The joint financing of projects, without specific financing directed at each project, this malleability, was considered a very positive point" for knowledge producers and the [steering] and management committees (Interview 3).

In contrast, "when the projects finished up the expected KT product, it was as if another [KT] moment was missing. The application phase of the [KT] product in the SUS was missing" (Interview 3). This means that this phase in KT product utilization by SUS users was not foreseen in the initial financial planning of the PDTSP-*Teias* network.

One challenge for the management committee was dealing with other people's money. "Some knowledge producers were suspicious about how the money would be distributed among the projects and what the management committee would do with that money" (Interview 6). According to the committee, the equipment demanded by the knowledge producers was acquired for the PDTSP. After that, knowledge producers scheduled the use with the PDTSP administration. "It was thus possible to reduce enormously the number of purchases and acquisitions of material and equipment used by more than one [knowledge producer]" (DOC9). The management committee tried to discuss with knowledge producers about different ways to use the resources shared with other knowledge producers. Thus, they tried to ensure that PDTSP-*Teias* network resources had greater impact. These were the challenging questions to discuss with knowledge producers because "they thought that the money that [was directed to the network's projects] was a savings. However, in the case of the PDTSP-*Teias* network, it was not a savings; it was an investment "for all projects in the network. (Interview 6). For example,

> "the planned budget of R$200,000 did not necessarily mean that the project had to spend exactly R$200,000. Each project was to spend as much as needed to generate a good quality product. If the project needed R$ 240,000, [the management committee] would seek R$240,000. If a project asked for R$200,000 and in mid-course they realized they were going to spend only R$ 170,000, [the management committee] would transfer the remaining R$ 30,000 to another network product" (Interview 6).

Although management committee and research teams were bound by agreements, the latter were difficult to manage.

As noted, the PDTSP-*Teias* network included teams of knowledge producers from different Fiocruz units and partners from other institutions. Together they formed the network's organizational base. They "constantly sought to integrate and reintegrate the activities and products of the research teams, redirecting individual production efforts to institutional collaboration among Fiocruz units" (DOC7). To this end, KT products financing also involved efforts towards institutional collaboration among knowledge producers from different Fiocruz units.

Chapter 6 – Discussion

This chapter summarizes the main results and doing so, attempts to provide an in-depth reflection regarding knowledge translation (KT) practices based on the analysis of KT practices in the PDTSP-*Teias* network. The use and adaptation of the INPSPQ KT plan in three retrospective projects in Brazil made it possible to illustrate KT actions and the strategies implemented by these projects. Anchored in conceptual KT tools and concepts, this thesis shows how participation in the PDTSP-*Teias* network facilitated KT practices and what obstacles emerged in the promotion of KT among knowledge producers and knowledge users in Brazil. Thus, it offers a KT roadmap adapted to the Brazilian context.

This chapter will also highlight the thesis's objectives and empirical results, its weaknesses and strengths in light of the current state of the discipline, as well as avenues for future research and contributions to research on knowledge translation in countries with conditions of social vulnerability such as Brazil.

6.1. Discussion of Research Objectives

This thesis's main objectives are to understand KT in different research projects and management practices and propose a KT roadmap adapted to the Brazilian context. Hence, the specific objectives of this study were threefold. The first was to describe three projects as examples of three different modalities of knowledge translation. The second was to perform a *post hoc* analysis of KT actions and strategies implemented by these three projects undertaken by the PDTSP-*Teias* network embracing the period from 2009 to 2013. Lastly, we looked at how participation in the PDTSP-*Teias* network facilitated KT between knowledge producers and knowledge users.

6.1.1. Empirical Contributions

This section will analyze the thesis's central topic: the KT practices developed by the PDTSP-*Teias* network. The challenges to knowledge translation in the Brazilian context will be highlighted.

Since all the challenges could not be addressed, the focus is on the most decisive outcomes for the subject of this thesis.

6.1.1.1 Discussion of Results

This thesis seeks to improve our understanding of knowledge translation (KT) actions and strategies implemented in Brazil. After using the INSPQ KT plan as a framework, results showed that six dimensions appeared to be more integrated into the PDTSP-*Teias* network: D1 Analysis of the Context and Users' Needs, D2 Knowledge to be Translated, D3 Knowledge about the Knowledge Users, D4 KT Partners, D5 KT Strategies, and D6 Overall KT Approach. However, two dimensions appeared to be less well-integrated: D7 KT Evaluation and D8 Resources. These results present some similarities to the INSPQ KT plan presented in the study by Tchameni Ngamo and colleagues (2016). Although the six dimensions were present in the Brazilian cases, they showed different levels of intensity, allowing them to be classified as predominant, moderate, and hard or not at all. Details about each dimension will follow.

6.1.1.1.1. D1 Findings

The analysis of the context and the users' needs was predominantly integrated. The three cases teams had good knowledge about Manguinhos and its context. However, violence and social vulnerability were considerable challenges to KT practices in the area. Context analysis is paramount to KT practices implementation, especially in an area like Manguinhos where conditions of social vulnerability are visible. In this regard, context analysis studies point out the need to consider what risks knowledge producers and knowledge users can face, such as armed conflict, varying degrees of intimidation, and high levels of crime (National Democratic Institute, 2013). The results show that all three cases teams knew the reality and context of the knowledge users in Manguinhos; however, they did not know how to deal with violence nor how to mitigate it. Knowledge producers knew that such social issues were beyond the scope of the research projects. There was a feeling that social problems were outside their control and that this hindered the realization of research projects in the Manguinhos area.

Even so, all three cases teams managed to analyze the factors linked to the knowledge to be translated as well as those factors linked to Manguinho social actors. However, all three cases teams failed to consider factors linked to organizational characteristics, especially those related to knowledge translation (KT), which may be due to the lack of prior knowledge about the KT process. In addition, the three cases teams rarely analyzed the motivations, interests, and incentives that induced the different social actors to participate in the projects. The cases teams also lacked a more critical analysis of the political, historical, and economic structures that influenced KT practices. These factors are fundamental to understanding how KT occurs within any context (National Democratic Institute, 2013).

CASE 2 and CASE 3 teams mostly analyzed the users' needs after knowledge was produced. Only CASE 1 team analyzed users' needs at the beginning of the project, and possibly during the project. This can also be due to CASE 1 teams's extensive knowledge about action research. In addition, each case team had a different audience group, such as health professionals, health practitioners, and Manguinhos residents, which added a challenge to the analysis of users' needs. Indeed, matching users' knowledge with the most appropriate evidence was not always easy. For example, Wickremasinghe and colleagues (2016) point out that "users' knowledge needs vary and successfully meeting them requires collaborative planning" (Wickremasinghe et al., 2016, p. 536). To these authors, providing a more systematic way for knowledge users and knowledge producers can help establish a common understanding of users' needs. The essential characteristics of knowledge users must be taken into account when matching those needs to the most appropriate evidence (Wickremasinghe et al., 2016).

The knowledge translation (KT) literature is full of information about the importance of the context analysis to a successful KT practice (Helfrich et al., 2010; Jacobson et al., 2003). Cammer and colleagues (2014) describe how context mediates KT and the use of best practices in long-term care. They came up with eight categories that facilitate the creation of a context within which KT can be implemented. These categories range from the most easily identifiable to the least observable: physical environment, resources, ambiguity, change, relationships, and philosophies. Inappropriate physical environments, inadequate resources, ambiguous situations, continual change, multiple relationships, and contradictory philosophies make for a difficult

context that impacts care provision (Cammer et al., 2014). Based on a network framework, Minary and colleagues (2018) operationalized how context and intervention systems interact; they also identified what needs to be replicated as interventions are implemented in different contexts (Minary et al., 2018). To this end, Fafard & Hoffman (2019) highlighted that in order to be effective, KT must be more adequately tailored to the audience size, audience breadth, and the policy context (Fafard & Hoffman, 2019). However, because context information is vast and complex, for knowledge producers who aspire to translate knowledge, it can be challenging to understand the knowledge users' context without knowledge users' participation.

In this regard, the PDTSP-*Teias* network helped knowledge producers access knowledge users in the Manguinhos area and focus on their needs. This finding supports research networking studies. For instance, Puljak & Vari (2004) mentioned that promoting research networking from different institutions and countries offers interdisciplinary expertise and allows the recruitment of knowledge users from different settings. A research network can provide the required flexibility to adapt to a wide range of challenges, enabling "shared learning, new research opportunities, establishing new research projects, joint applications for funds, and technology transfer" (Puljak & Vari, 2014, p. 181). What is more, building research networks is particularly important for low-to-middle-income countries like Brazil, which have scarce financing support. Knowledge producers that work together can also undertake higher quality research. For example, Djukanović and colleagues (2017) mention that biomedical research carried out via international and interdisciplinary collaboration is of significantly better quality and has greater impact than research performed by a single center or discipline (Djukanović et al., 2017). However, as the PDTSP-*Teias* network was an innovative program in Brazil, the lack of experience and tools to develop KT and research networking was a big challenge.

6.1.1.1.2. D2 Findings

The analysis of this dimension showed that the three cases teams mostly used research-based knowledge. This was mainly because the PDTSP-*Teias* was a research network inside Fiocruz, a well-known Brazil's health research institution. Because of the long experience with action research, CASE 1 team used other types of knowledge, such as knowledge from users, and tacit

knowledge. In addition, the time to create knowledge to meet users' needs was deemed too long. However, the CASE 1 team planned measures to make content clear, accessible, and useful to knowledge users. Local contextual knowledge was the knowledge that CASE 1 attained through familiarity with the Manguinhos area. This contextual knowledge informed efforts to tailor the CASE 1 project to the needs of knowledge users (Kothari et al., 2011). These findings complement what is known from the use of tacit knowledge in a Canadian qualitative study which demonstrated that "tacit knowledge is drawn upon, and embedded within, various stages of the program planning process" (Kothari et al., 2011, 2012, p. 9). Other KT studies also emphasize that tacit knowledge depends on the context, and the context can be personal and organizational (Kothari et al., 2012; Lemire et al., 2013). Although research-based knowledge is related to methodological rigor, tacit knowledge is related to the real world's relevance or viability (Kothari et al., 2012).

CASE 2 and CASE 3 teams found it difficult to integrate the use of other types of knowledge. According to one explanation, this was due to the large number of potential knowledge users in the Manguinhos area, the lack of time, local violence, and the lack of financial and human resources. A second explanation points to the absence of knowledge products predetermined at the beginning of each project (without knowledge users being consulted about their needs). This gives little flexibility to the development of products for other potential users (Tchameni Ngamo et al., 2016). These results suggest that for KT practices to be effective, knowledge producers should pay close attention to the impact of tacit and local knowledge in KT planning. The translation of tacit knowledge requires interaction between the professionals who accumulate knowledge and practical experience (know-how), knowledge producers, and knowledge users. Although the PDTSP-*Teias* network facilitated the use of research-based knowledge, it failed to use tacit knowledge.

The PDTSP-*Teias* network knew the importance of communicating what they were producing to knowledge users, especially decision-makers. Although they had the intention of translating knowledge internally within the vice presidency of Fiocruz, they did not have an adequate instrument for communicating the projects' results or the PDTSP-*Teias* network's productions.

One of the biggest challenges for the PDTSP-*Teias* network was the lack of a step-by-step conceptual KT tool and the absence of KT specialists to talk to. However, they were aware that the world of academe should be producing for society. In the PDTSP-*Teias* context, the challenge was to know how to achieve this and how to boost the interchange between knowledge producers and knowledge users. The KT concept is still very theoretical in Brazil. Research groups are working with KT concepts that are well recognized in the academic field (Abreu et al., 2017; Bezerra et al., 2019; Oelke et al., 2015; Pessoa et al., 2016), but it is still very difficult to link KT theory and practice in Brazil. This may be improved by implementing the KT roadmap adapted to the Brazilian context, which will be presented in detail at the end of this chapter.

6.1.1.1.3. D3 Findings

To identify and get to know knowledge users was challenging to CASE 2 and CASE 3 teams. The previous CASE 1 team experience with action research was a facilitator to the integration of this dimension. The CASE 1 team identified and classified the different knowledge users to be reached before the project started. CASE 1 team also described knowledge users' preferences and characteristics in detail. On the other hand, the CASE 2 team had access to the Manguinhos health center and local knowledge users. However, the CASE 2 team identified knowledge users to be reached only after the knowledge was produced. Due to the nature of the CASE 3 project, it was challenging for the CASE 3 team to get access to the Manguinhos area and its knowledge users. However, the CASE 3 team did try to facilitate knowledge users' involvement by hiring Manguinhos residents to work as research assistants in data collection and analysis (CIHR, 2016a). Thus, these findings complement what is known about the level of knowledge of users' involvement. In the KT process, knowledge users' involvement changes in intensity and complexity, depending on the nature of the research project (CIHR, 2016a).

Knowledge users are key actors in KT practices (CIHR, 2012b, 2016a; Lemire et al., 2013). A successful KT project can be expected to have a fair amount of details about knowledge users (CIHR, 2012a, 2012b). According to the Canadian Institutes of Health Research, it is a good idea to have knowledge users submit letters of reference as well as CVs to the knowledge producers or knowledge brokers (CIHR, 2012a, 2012b). Knowledge users' role in the project should be clearly

stated, and there should be evidence that they have agreed to fulfill their role (CIHR, 2012a, 2012b). Project proposals should also note that knowledge users are suitable participants in the project and that they understood their assigned roles (CIHR, 2012a, 2012b).

KT studies agree that identifying and knowing knowledge users are the main challenges of KT practices (Dixon et al., 2016; O'Brien et al., 2018; Tchameni Ngamo et al., 2016). KT studies also indicate that knowledge users can offer unique contributions to knowledge creation (Dixon et al., 2016). However, creating cohesion among knowledge users from different communities, such as policy advocates and health workers, can be challenging. For KT practices to succeed, it is paramount to consult and integrate knowledge users throughout the KT process. In addition, knowledge producers and knowledge users are equally responsible for translating knowledge into action (Dixon et al., 2016). KT studies also show that barriers to knowledge users' participation and co-creation of knowledge include, "incompatible expectations of knowledge users' role and frequent knowledge users' turnover."

The PDTSP-*Teias* network started with an open letter to knowledge producers interested in working in the Manguinhos area, a factor that made it easier to focus on knowledge users who were Manguinhos residents or practitioners working in Manguinhos health services. However, it was still difficult to define knowledge producers and knowledge users. For the PDTSP-*Teias* network, researchers produce knowledge, but sometimes knowledge users would somehow produce knowledge. This lack of conceptual and practical knowledge about KT may have confused knowledge users and reduced their confidence.

Knowledge producers and the PDTSP-*Teias* network were set on working in Manguinhos, a socially vulnerable area that interested both. However, knowledge producers were unaware of the health issues of interest to Manguinhos residents. Therefore, knowledge producers and knowledge users needed to talk to each other. For instance, the PDTSP-*Teias* network could have regularly disseminated information about the project and asked for knowledge user participation on any issues that might arise; it could have encouraged face-to-face contact at various venues or events in order to bring partners together (e.g., conferences, clinical team meetings); it could have changed meetings' locations among various research settings (e.g., Fiocruz units) and

integrated knowledge user settings (e.g., community centers, group practices, local health agencies); it could also have regularly rotated meeting chairs to make everyone feel included in running the project (CIHR, 2016a).

6.1.1.1.4. D4 KT Findings

Establishing KT partners was challenging for all three case teams and the PDTSP-*Teias* network management committee. It was challenging to balance the interests of Manguinhos residents, knowledge producers, and Fiocruz partners. It was also challenging to manage tensions among knowledge producers and share resources.

As shown in CASE 1, the KT process brought together various partners from different policy sectors, increasing influence, and improving networking and governance. However, the relevance and participation by partners in the PDTSP-*Teias* network were only evident in meetings. Stakeholders did not collaborate effectively in project development. According to the literature, interactions among partners come with political challenges, implementation issues, as well as problems associated with shared understanding of a given problem, and coordinating strategies and resources of all the partners involved in the KT process (Potvin & Clavier, 2013). Thus, the PDTSP-*Teias* network operated as an interface between the PDTSP-*Teias* network itself and the partners, bringing attention to common points of interest. According to Potvin and Clavier, partnerships are spaces for debate and negotiation, requiring specialized know-how. They are not spaces of consensus that simply need to be managed. Thus, interactions and collaboration inevitably raise issues of influence, networking (flexible and horizontal style of coordinated action), and governance (processes of coordinating multiple actors in order to work towards a shared goal) (Potvin & Clavier, 2013). Partnership interactions have been discussed mainly regarding intersectoral action and participatory research (Potvin & Clavier, 2013). The literature also points out that, when partners are mobilized to resolve controversies, often related to a lack of resources, parts of the intervention may be reoriented by having new partners join the program (Bisset et al., 2013; Bisset & Potvin, 2007). The partnership between PDTSP-*Teias* network's actors depended on the PDTSP-*Teias* network's strength and the continued translation among knowledge producers, knowledge users, and the management committee. However, such

partnerships lead to controversies, since partners tend to have different interpretations and interests in the problem to be solved. These findings corroborate the literature on the governance of intersectoral initiatives in Canada, which calls for more frequent partnerships between the health sector and actors from other sectors (Potvin & Clavier, 2013). To facilitate network partners' identification, the PDTSP-*Teias* network management committee should have paid attention to "their qualities, qualifications, capacities, expertise, roles, and interests, objectives, and concerns" (Potvin & Clavier, 2013, p. 13). These partnerships may vary in terms of legitimacy, resources, interests, and capacity to act. Thus, their relationships with institutional regulations may differ significantly (Potvin & Clavier, 2013).

Based on findings regarding KT partners, the PDTSP-*Teias* network could have benefited from a partnership agreement with KT partners. This tool could have helped frame the respective contributions and mutual commitments of knowledge producers, community partners, and public administrations taking part in the KT process in local interventions aimed at reducing social inequalities in health. Inspired by similar existing agreements, the PDTSP-*Teias* network would have a statement of the mission, values, and principles underlying the partnership. Together, the PDTSP-*Teias* network could have ensured that all partners had an equal voice (Bernier et al., 2006; Potvin & Clavier, 2013). Partnership agreements have helped regulate interactions between partners, establish a climate of cooperation, and provide the conditions for participative interpretations of research results (Bernier et al., 2006; Potvin & Clavier, 2013). However, the development of a partnership agreement "entails a complicated negotiation process marked by tensions representing the interests of the various parties and establishing the basis for collaboration" (Bernier et al., 2006, p. 335). The public and community partners are not equal in terms of participation in research agendas or in research results interpretation. For instance, their powers, responsibilities, and obligations differ considerably. In addition, public institutional partners have access to more resources and power than community organizations (Bernier et al., 2006). To Bernier and colleagues (2006), factors that can facilitate the integration of KT partners include: recognizing specific interests and organizational culture that form the identity of the various organizations involved, knowledge brokering to develop a climate of trust throughout the

negotiation process, and reducing inequalities among partners in a process that requires considerable efforts over a rather long period (Bernier et al., 2006).

Methodologically, the PDTSP-*Teias* network had all the PDTSP's support that had existed since 2000. However, the PDTSP-*Teias* management committee did not realize its potential as a mediator or knowledge broker role between knowledge producers and knowledge users, especially their decision-makers. This may have been due to a lack of knowledge of KT concepts and the PDTSP-*Teias* network's role as a knowledge broker. PDTSP-*Teias* network members did not know the concepts' relevance in the KT process. By and large, they did not see themselves as knowledge producers but rather as influencers of knowledge producers, i.e. inducing knowledge producers to make KT happen. In other words, the PDTSP-*Teias* network management committee had the intention of acting as knowledge brokers, but its members lacked the theoretical and practical training to develop this function.

One challenge the PDTSP-*Teias* network faced was reaching out to partners who worked in the Unified Health System/*Sistema Único de Saúde* (SUS) management. The PDTSP-*Teias* network and some SUS managers had the feeling that participating in the PDTSP-*Teias* network was adding more work for SUS managers, who were already overburdened at that time. As a result, they did not have time to stop and talk to knowledge producers or the network. In this sense, there was a feeling that research hindered more than helped SUS managers.

The lack of knowledge about how to network was another challenge the PDTSP-*Teias* network had to confront. At the time, knowledge producers and the management committee did not know their role within the network, and there was no systematization or protocol on how to network. The concepts of networking and knowledge translation were innovative concepts for knowledge producers within Fiocruz units.

Networking was a major issue. However, the PDTSP-*Teias* facilitated the communication of research project results, both between the projects and among some Manguinhos residents. The PDTSP-*Teias* network facilitated the exchange of information about specific projects or projects that had previously been carried out. This exchange of information on how knowledge producers

were able to solve each project's challenges was considered an innovation for the management of projects aimed at solving SUS problems.

According to Bilodeau and Potvin (2018), these network challenges can be related to the dynamic and recursive interactions between the PDTSP-*Teias* network actors and their context. Interactions can lead to an examination of the connections between the network's various elements and the context, the network they form, and the network's evolution (Bilodeau & Potvin, 2018). Thus, the PDTSP-*Teias* network constituted a strategy that allowed knowledge producers to alter or create new roles. Network actors established and strengthened connections within existing networks and mobilized new resources to produce changes in the context of Manguinhos.

6.1.1.1.5. D5 Findings

The three cases teams used different types of KT strategies depending on the nature of the research project and the project's objective. However, CASE 1 team combined more than one KT strategy: dissemination and uptake/appropriation. The Briefcase of work offered more than health information: it placed Manguinhos residents in their history and in that of the city; it helped them understand how positive and negative transformations had occurred; and it showed their consequences for people's lives and Manguinhos' environment. On the other hand, CASE 2 and CASE 3 teams combined multiple interventions and focused mainly on dissemination or uptake/appropriation strategies, such as scientific papers and conference presentations. In addition, the KT strategies implemented for each knowledge user did not determine the desired interaction level and the need to involve an intermediary depending on the strategy chosen.

According to the KT strategies literature, KT implementers should carefully consider contextual factors to use and/or adapt in promising KT strategies (MacGregor et al., 2014). However, the most used KT strategy for changing behavior continues to be educational interventions (Campbell et al., 2019). Thus, KT authors recommend tailoring educational interventions so that they can be more active. New technologies such as online education curriculums and computerized decision supports or reminders are examples of more active educational interventions that may be more effective in changing behavior (Campbell et al., 2019). Numerous conventional KT strategies such

as involving local opinion leaders, marketing and mass media, and offering provider incentives continue to be absent in literature reviews. The underutilization of interdisciplinary teams demonstrates that research is needed to develop, implement, and evaluate underused KT strategies (Campbell et al., 2019). In this regard, Armstrong and colleagues (2013) highlight that KT strategies increase the use of research evidence within policy and practice decision-making contexts. For example, clinical and health service contexts have focused on KT strategies for individual behavior change; however, they argue that the multi-system context of public health requires a multi-level, multi-strategy approach (Armstrong et al., 2013).

For Nguyen and colleagues (2020), uptake/appropriation KT strategies can facilitate true partnerships, but they require time and money (Nguyen et al., 2020). Collaborative research approaches can use uptake/appropriation KT strategies, such as engaged scholarship (co-creation of knowledge from students and community groups moving them from knowledge consumers to knowledge producers) (Brown University, 2020), Mode 2 research (research based on the needs of knowledge users in the health care system) (Estabrooks et al., 2008), co-production (delivering public services in a reciprocal relationship between health professionals and knowledge users) (Boyle & Harris, 2013), and participatory research (research focusing on a process of sequential reflection and action, produced with and by local people rather than on them) (Cornwall & Jewkes, 1995).

Regarding KT strategies, the PDTSP-*Teias* network managed conflicts among knowledge producers. However, the lack of training in KT strategies and managing interests among teams was a challenge for the committee. For example, CASE 1 team, which had more experience in producing KT products, was invited to develop board games about health issues addressed to young Manguinhos residents, but the other teams did not collaborate, sending neither questions nor suggestions for the game. This caused rifts among research teams, mainly over authorship and game implementation in the Manguinhos area.

On a positive note, some research teams did develop and implement a community health course where different members of the research teams worked together. The course allowed the PDTSP-*Teias* network to develop relationships with the *Victor Valla* health clinic, which were adopted as

activities within the SUS in Manguinhos. In this sense, the PDTSP-*Teias* network set up a structure that gave knowledge producers access to the Unified Health System (SUS) in Manguinhos. The PDTSP-*Teias* network facilitated the access of knowledge producers to the Manguinhos area, which was a significant challenge for most Fiocruz research teams.

Knowledge producers always sent questions to the PDTSP-*Teias* network about whether they could produce materials other than scientific articles. The old-styled scoring used by the Coordination for the Improvement of Higher Education Personnel/*Coordenação de Aperfeiçoamento de Pessoal de Nível Superior* (CAPES) and the National Council for Scientific and Technological Development/*Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq) is still focused on scientific papers output. Research funding agencies in Brazil still do not value KT products, and this often does not encourage knowledge producers to create knowledge in partnership with knowledge users. For Brazilian knowledge producers, it is as if this production was not scientific. For knowledge producers in countries like Australia, Canada, the United States, and Brazil, the focus is on output, "publish or perish" (Barwick, 2018), as a way to get research grants and advance one's career. The literature on KT emphasizes that building research impacts and KT practices requires a shift in the way research is funded worldwide (Barton & Merolli, 2019; Barwick, 2018). KT experts in Australia point out that unlike Canada, research funders worldwide (Brazil included) "do not require KT plans, nor do they fund research related to KT activities" (Barwick, 2018, p. 9). As mentioned in the results chapter, CASE 1 team succeeded in bringing changes in this field, but the latter have not yet become generalized.

The PDTSP-*Teias* network wanted to change course as well as knowledge products, by getting knowledge producers to work systematically, checking if what was changed was really for the better. However, the KT concept was only officially applied to the PDTSP-*Teias* network, and subsequently to research groups in 2012, the last year of funding for the PDTSP-*Teias* network. This was a determining factor in producing KT strategies aimed at knowledge users. Thus, at that point, there was no time or funding to change KT strategies. The PDTSP-*Teias* network was an innovative program within Fiocruz units, but the lack of experience and tools to facilitate the translation of knowledge prevented KT strategies from being fully implemented. For the research teams and the PDTSP-*Teias* network, this was often stressful.

6.1.1.1.6. D6 Findings

As mentioned before, there are two main types of approaches to KT: Integrated and End-of-grant. The integrated approach involves co-constructing knowledge with knowledge users from the outset and throughout the research process, whereas the End-of-grant approach calls for diffusion, dissemination, or application of research results often in the early stage of discovery. Knowledge users and knowledge producers may be involved in developing targeted knowledge products or KT activities once the research is completed.

The three projects moderately implemented the dimension related to the overall KT approach. Nonetheless, CASE 1 team used a combination of the two approaches. This could be due to the extensive experience of the CASE 1 team working to co-construct knowledge with users, based on Paulo Freire's identification of the problem situation (Freire, 2009, 2018). CASE 1 team involved knowledge producers and resident-researchers in seminars, fieldwork, workshops, with each session closing with a group hug. They also used WhatsApp as a means of communication between the research group and Manguinhos residents. CASE 2 and CASE 3 teams had an End-of-grant approach, which means that they used diffusion, dissemination, and application of research results as KT's main strategies.

These findings complement what is known about KT approaches. For example, the integrated approach ensures that research projects address knowledge users' problems and thus produce useful findings that can be put into practice by knowledge users (Graham et al., 2018). However, the integrated KT strategies that reach beneficial outcomes remain unknown (Gagliardi et al., 2016). The lack of dedicated resources/funds, skills in integrated knowledge translation, and time, and the different timing and values between knowledge users and knowledge producers are barriers to implementing an integrated KT approach (Gagliardi et al., 2016).

The PDTSP-*Teias* network facilitated the introduction of the KT concepts within Fiocruz units. Even though people did not necessarily become familiar with the concept, the PDTSP-*Teias* network knew that it was essential for knowledge producers and knowledge users to be interested in the same problem and that the conceptual KT tool had to be followed.

6.1.1.1.7. D7 Findings

The PDTSP-*Teias* network did manage to improve understanding of the KT concept within Fiocruz units. Even though the network did not have a conceptual KT tool to follow, KT practices were discussed among the people in charge of projects and the PDTSP-*Teias* network. The network also systematized the knowledge related to Manguinhos' health issues; however, KT products and strategies were not evaluated when the PDTSP-*Teias* network was in operation and after it was closed down.

Knowledge translation (KT) evaluation is critical to a successful KT. The National Collaborating Centre for Determinants of Health in Canada describes potential evaluation indicators informed by KT practices; they are: interactions between stakeholders in the production and use of knowledge, including the engagement of the target audience; evidence of communication channels, processes, and context between KT actors; working relationships among various stakeholders; an ongoing forum for sharing among stakeholders; opportunities for collaboration; shared vocabulary among stakeholders; knowledge being relevant to and understood by knowledge users; a linking or brokerage role being taken by stakeholders; and knowledge users engaged as coresearchers (Davison, 2009). Thus, the lack of an ongoing evaluation of KT strategies did not allow enough information about knowledge use and/or application by the Manguinhos community.

6.1.1.1.8. D8 Findings

For the three case teams and the PDTSP-*Teias* network, it was difficult to integrate this dimension. One of the usual complaints by knowledge producers was that the PDTSP-*Teias* network held many meetings, taking time away from knowledge producers and knowledge users. At the time, the PDTSP-*Teias* network did not know how to operate and its members had not been trained in KT practices. However, the PDTSP-*Teias* network did try to develop clear strategies to get knowledge producers and knowledge users more involved in workshops and networking by informing them at regular meetings and via emails. Financial and human resources were also difficult to manage, especially with respect to knowledge producers. Resources were invested in research, staffing, and the purchase of supply material. However, they were deemed inadequate

for KT itself. On the one hand, the PDTSP-*Teias* network helped to share the funding among projects; on the other hand, the lack of budget management skills and tools were clear hindrances to the work of the management committee.

These findings corroborate those of health research network and health research systems studies (Bowsher et al., 2019; Freshwater et al., 2006; Higgs et al., 2008; Matenga et al., 2019; Puljak & Vari, 2014). For instance, a narrative review of health research capacity strengthening in low- and middle-income countries found that stable financing, research production, resources utilization and management are critical to sustainable health research (Bowsher et al., 2019). The review also noted that financing is regularly mentioned as a critical factor limiting the development of health research systems in low- and middle-income countries (Bowsher et al., 2019). Matenga and colleagues (2019) suggest that north-south health research partnerships also have issues related to power imbalance due to funding mechanisms, intellectual property rights, and resource sharing (Matenga et al., 2019). For the network to succeed, such issues must be fixed early in the partnership.

6.1.1.1.8. Key Findings

6.1.1.1.8.a. Knowledge Translation Actions and Strategies Implemented in Brazil

The PDTSP-*Teias* network and the three case teams gave priority to the Manguinhos context and to the knowledge of users' needs. However, the key finding of this section concerns KT evaluation and resources. None of the three case teams planned KT products evaluation, and the lack of financial and human resources dedicated to KT products was a significant issue. According to Higgs and colleagues (2008), establishing a joint mission, trusting relationships, and collaboration on principles are crucial steps in a network's development. The authors agree that no network-related research should begin without adequate knowledge producer training and site preparation to conduct quality research. Discussions are also needed to ensure consensus about key collaborative principles, including trust, mutual respect, capacity building, multilateral decision-making, and joint leadership. They also point out that efficient, clear communication, differing institutional cultures, and knowledge producers' competing demands (who mostly continue to undertake their research commitments) are some of the challenges to the research

network. For the authors, networking success rests on the foundation built during the initial years and the ongoing assessment of outcomes and sustainability (Higgs et al., 2008).

KT products can be successfully evaluated using several evaluation frameworks (Alberta Health Services, n.d.; CIHR, 2012a, 2012b; Glasgow et al., 1999). The three cases teams and the PDTSP-*Teias* network would benefit from using a KT evaluation framework. For example, the RE-AIM evaluation framework was conceptualized by Glasgow and colleagues (1999, 2019) two decades ago and has been one of the most frequently used evaluation frameworks (R. Glasgow et al., 1999, 2019). The RE-AIM framework includes five components: **Reach**: Did the target population receive the intervention? **Effectiveness**: Did the intervention have its intended effect? Adoption: Was the intervention adopted by its intended users? **Implementation**: Was the intervention implemented with high fidelity to its essential features? **Maintenance**: Was the intervention maintained over the long term with follow-ups? (Glasgow et al., 1999).

Concerning the lack of resource planning, for the Canadian Institutes of Health Research (CIHR), several potential factors can endanger KT feasibility, and these factors must be considered when planning a KT project (CIHR, 2012a). For example, knowledge users may change job positions and leave the environment of their expertise; disputes may break out between knowledge users and knowledge producers (CIHR, 2012a). As noted in D4, the PDTSP-*Teias* network could have benefited from a partnership agreement outlining data access, the timing of findings release and intellectual property; and mechanisms for resolving disputes. In addition, KT projects come with higher expectations that the findings or recommendations will be acted on. Knowledge users should be able to influence decision-making authorities so that they integrate knowledge into the environment where they practice. Finally, the KT project's scope should be appropriate to the established goals and the resources available. A KT proposal is essential to indicate how the project will be finished in the given time frame and with the existing resources (CIHR, 2012a). The PDTSP-*Teias* Network as a Knowledge Translation Facilitator between Knowledge Producers and Knowledge Users in Manguinhos.

The key finding of this section concerns the lack of KT planning and prior experience. The PDTSP-*Teias* was an innovative network; however, the lack of appropriate KT planning and tools as well as the absence of political support were major obstacles to the success of KT practices. Indeed,

the lack of incentive for KT production was one of the most significant barriers in the Brazilian context. The maintenance and involvement of knowledge users and partners also required financial and human resources. The development of activities and integrated KT projects was thus complex and took time, especially in getting knowledge users and knowledge producers to work together. Djukanovic and colleagues (2017) note that “working together is that which is of value to all of society: together we are stronger, working together makes hard work easier” (Djukanović et al., 2017, p. 2); nonetheless, without financial investments, time to evaluate KT products, organizational support, political will, and adequate tools to carry out KT, KT practices in Brazil will fail.

When it comes to KT practices, experts agree that learning how to work as a team member, respect other viewpoints, share power, develop positive relationships, understand different timeframes, show flexibility to build trust, and find solutions are significant challenges to KT practices and research networking (CIHR, 2012b). The PDTSP-*Teias* network had hard time in introducing KT practices to knowledge producers and Fiocruz units. However, on a positive note, the PDTSP-*Teias* network did facilitate the integration of the KT concept within Fiocruz units. The network helped resource sharing and networking among knowledge producers from different Fiocruz units.

An effective KT practice is built upon the principles of open communication and equitable participation among knowledge producers, knowledge users, and management committees/knowledge brokers. It is important to think 'outside the box' when planning ways to put these principles into practice (CIHR, 2012b). In the PDTSP *Teias* network, these two principles proved controversial, most likely because the management committee and knowledge producers lacked KT expertise and planning, as well as their failure to dedicate enough time to the KT process. These results illustrate how an adaptation of a conceptual KT tool is paramount to the development of KT practices in Brazil.

6.1.2. Weaknesses and Strengths of the Thesis

Any academic study needs clear objectives, supported by literature review and theoretical frameworks. Academic studies must present consistent methodological procedures, showing

results based on empirical data, and interacting with existing scientific reflections on the problem studied in a contextualized way. In addition, any academic study must also clearly explain the study's weaknesses and strengths (Taquette & Minayo, 2016). Despite the precaution to ensure methodological rigor and the quality of the research, as shown in Chapter 5, the main limitations of this thesis are twofold. First, the volume of data made analysis and interpretation time-consuming and more challenging to depict visually. To minimize these issues, I tried to present the results in tables and figures. Likewise, I tried to maintain the methodological procedure transparent so as to facilitate the understanding of the findings. Second, translating from Portuguese into English may have somewhat reduced understanding of the informants' internal logic. Vasconcellos and Bartholamei Junior (2009) report that translation involves at least two types of skills:

i. linguistic competence, which concerns the mastery of the linguistic codes in contact in the translation act, includes understanding issues related to the lexicon, syntax, and morphology. To this end, competence must be developed for the two languages in contact (i.e., Portuguese and English), and
ii. referential competence, which refers to the ability to seek how to know and become familiar with the subject in which a translation activity will take place. For example, a translator may not have referential competence in the medical world but can learn to seek it through specific strategies. (Vasconcelos & Bartholamei Junior, 2009).

With this in mind, I always validated the transcriptions with two Portuguese speakers who were Fiocruz members and public health specialists. Two native English speakers revised the English version of the research results, one being a public health expert. The commitment to fidelity was defined not only in terms of the original text but also with respect to the final readers' expectations.

Despite these weaknesses, this thesis should also be weighed against its strengths. New knowledge is often required to inform decisions and change health promotion actions. This can be difficult, especially if considering working with different sectors and disciplines (Davison & National Collaborating Centre for Determinants of Health, 2013). The creation of supportive

structures like the PDSTP-*Teias* network was crucial to this process. However, these structures need support, operational mechanisms, and appropriate tools to be effective. This thesis contributes to enriching the KT concept in health promotion in Brazil. This study is the first to analyze the interaction between knowledge producers and knowledge users in the Brazilian context. To this end, this study's main strength lies in the adaptation of a KT roadmap for Brazilian KT practices. In addition, the findings of this thesis are relevant to similar cases in other regions with vulnerable conditions like Brazil's. Qualitative researchers, like Taquette and Minayo (2016), agree that it is possible to generalize the results of qualitative studies in similar contexts with a certain degree of confidence (Taquette & Minayo, 2016). Also, this thesis examined Brazil's KT issues in detail and in-depth. The data based on local experience were robust in generating good quality research findings and understanding of the complexities of KT practices under conditions of great social vulnerabilities.

6.1.3. Theoretical Contributions

The theoretical contribution addressed the following questions: i) Why was it necessary to modify the dimensions existing in the INSPQ KT plan? and ii) How did the dimension modifications affect the existing INSPQ KT plan? (Zhou et al., 2017). In view of the empirical results, the main theoretical discussion that emerged was the need to develop conceptual KT tools to support knowledge producers and knowledge users in Brazil. For this reason, I made modifications to the INSPQ KT plan to propose a KT roadmap suitable to the Brazilian context.

A roadmap is a well-established strategy with its own body of academic literature around the world (Park et al., 2020). However, "data shows that a growing number of papers are published in Brazil, though these studies have yet to coalesce into a single line of inquiry" (Park et al., 2020, p. 12). To Rocha and Pereira Mello (2016), a roadmap is a method to assist in the management processes to better understand the economic and social context in which they operate (Rocha et al., 2016). It outlines a research agenda that will guide the development of specific research programs, answering research questions, and reducing scientific uncertainties (Particles et al., 2009).

Thus, a KT roadmap can help to assess, enhance, and recognize competent performance through a comprehensive management system. At its core, “a roadmap is a commitment to competency and consistency” (Turnock, 2003, p. 478), meaning that competency is used to measure public health workforce preparedness, and consistency is used for “assessing needs, designing training interventions, targeting specific audiences, deploying learning management systems, designing incentives for competency attainment, and rewarding competent performance” (Turnock, 2003, p. 478).

6.1.3.1. The KT Roadmap to the Brazilian Context

The lack of conceptual KT tools adapted to or developed for the Brazilian context is highlighted in Brazil’s KT literature (Andrade et al., 2020; Bezerra et al., 2019; Crossetti et al., 2017; Cruz et al., 2016; Miranda et al., 2020a). Similarly, the thesis empirical results highlighted that the lack of conceptual KT tools was a barrier to the implementation of KT practices in the PDTSP-*Teias* network. The lack of an adequate conceptual KT tool can lead to failed KT practices caused by several reasons. For example, a lack of knowledge about KT practices, particularly when it is a more complex study, can lead to misunderstandings between knowledge producers and knowledge users. By contrast, a conceptual KT tool can help knowledge producers and knowledge users to describe the process of translating research into practice, understand what influences KT outcomes, and evaluate KT practices (Esmail et al., 2020; Nilsen, 2015). Consequently, a conceptual KT tool can provide “improved guidance for prevention and intervention efforts if they are based on frameworks that integrate social-ecological and biological influences on health and incorporate health equity and social justice principles” (Brady et al., 2020, p. 510). It can also help knowledge producers and knowledge users to focus on key components of programs, practices, and policies intended to promote population health (Brady et al., 2020).

To close this gap in KT practices in Brazil, the theoretical contribution of this thesis is to propose a conceptual KT tool for the Brazilian context. The use of the INSPQ KT Plan in the analysis of the PDTSP-*Teias* network allowed me to validate the KT plan in the context of Brazil. Thus, I was able to propose a strategic plan that I called Brazilian KT Roadmap. This KT roadmap will be the first

conceptual KT tool focusing on Brazil's reality, opening up opportunities to have more discussion about KT practices in Brazil (Figure 15 and Figure 16).

The KT roadmap will contribute to the development of KT practices in Brazil, thus guiding knowledge producers towards the development of new KT strategies adapted to the needs of knowledge users as well as improving health promotion practices. In the Brazilian KT Roadmap, the needs of knowledge users, especially the needs of vulnerable users, will come at the beginning of planning, alongside mechanisms such as a continuous KT evaluation, to allow the use of good quality health evidence in health promotion in Brazil. In fact, through the participation of knowledge users in the elaboration of research questions, their needs will be the central focus of the Brazilian KT Roadmap.

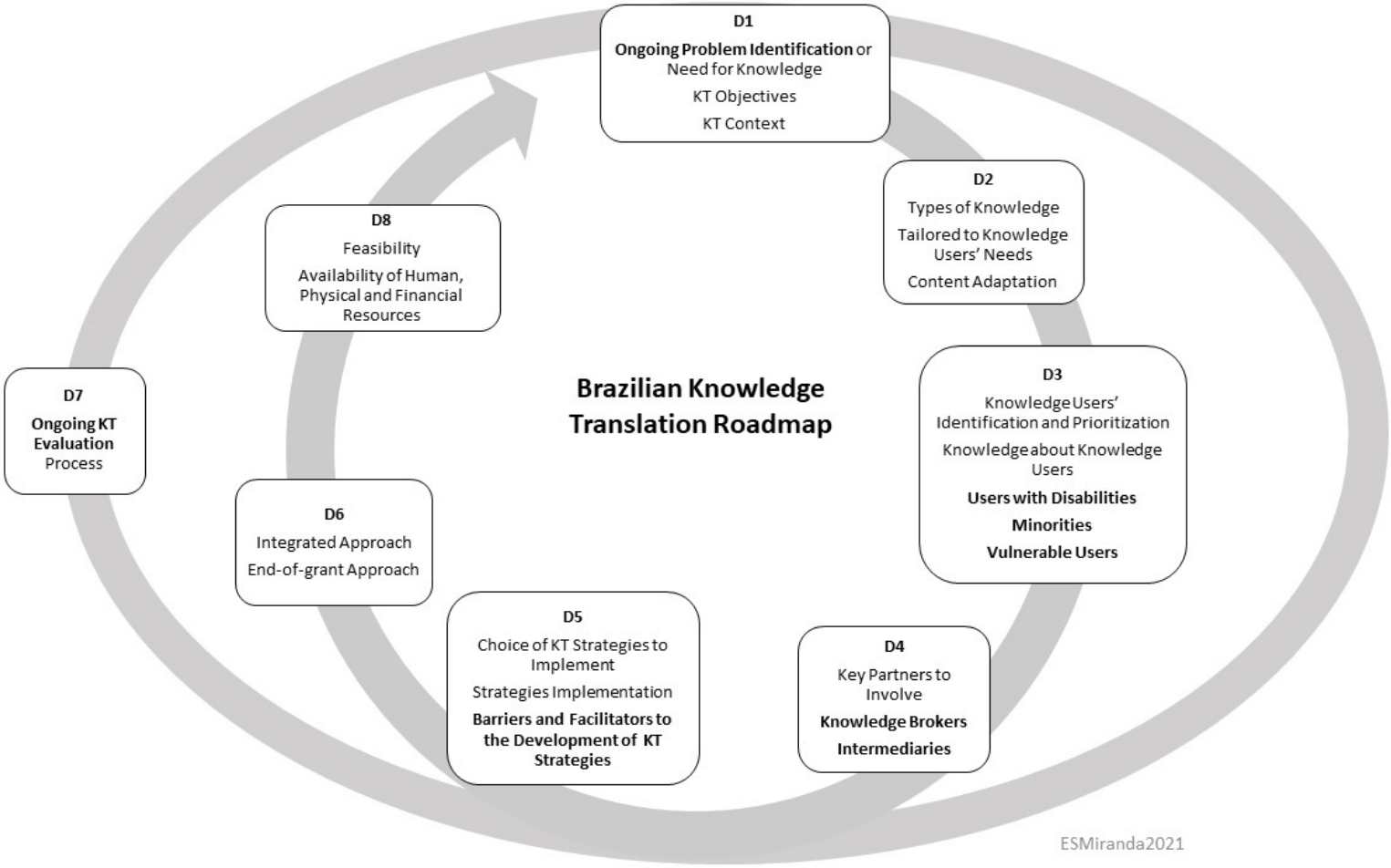

Figure 15. Brazilian Knowledge Translation Roadmap

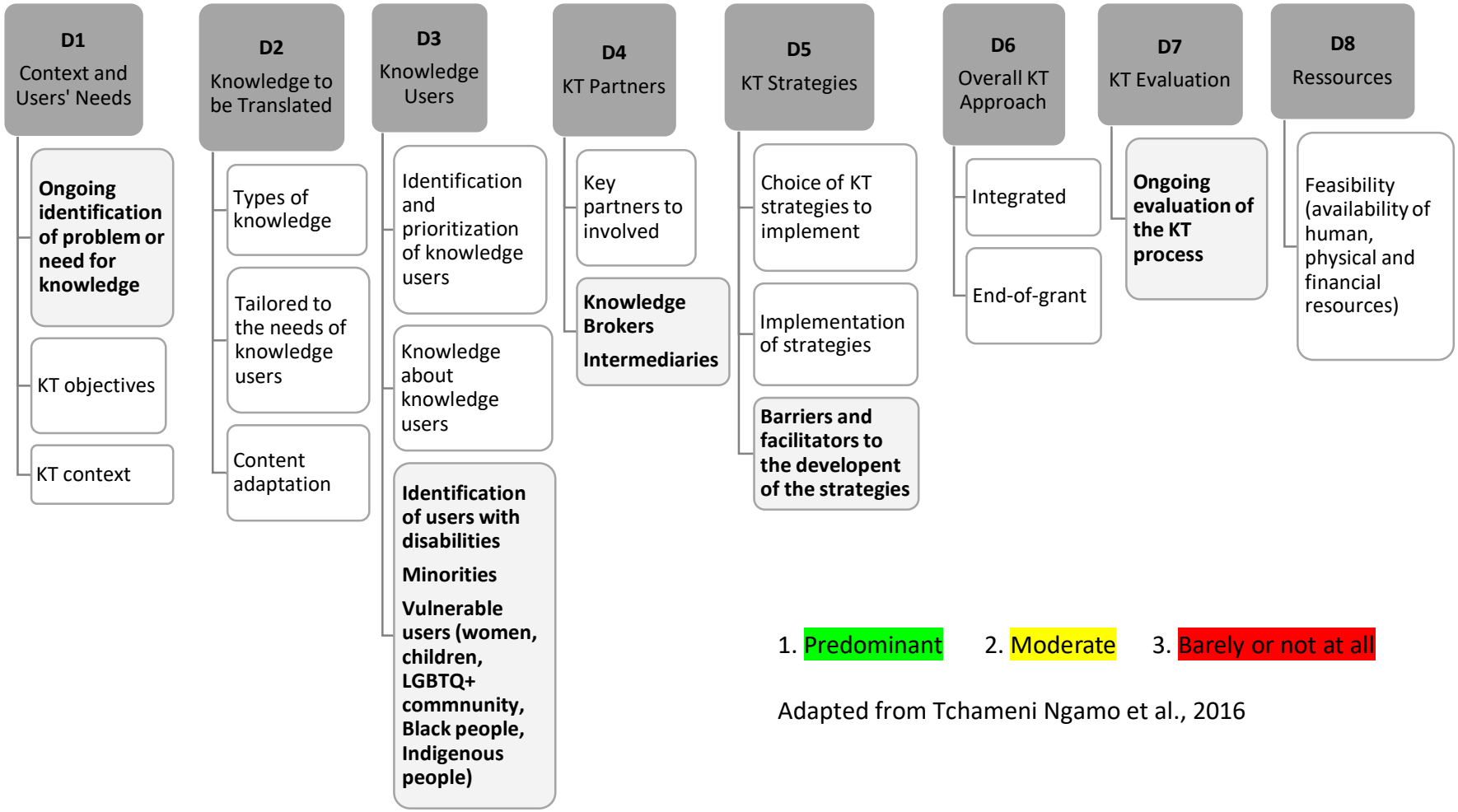

Figure 16. KT Dimensions to the Brazilian Context

6.1.3.2. How does the Brazilian KT roadmap add to the INSPQ KT plan?

To validate the INSPQ KT plan in the Brazilian context, the social vulnerability conditions of the Manguinhos area were taken into consideration, as were the lack of theoretical and methodological understanding of KT's know-how in Brazil. For this reason, I added modifications to five dimensions of the INSPQ KT plan.

i. In the first dimension, the problem identification and the knowledge translation (KT) context should be discussed at the beginning of the KT process and be continually analyzed during the KT process. The Brazilian context of social vulnerability is continuously changing because of that; and the analysis of the context can vary according to the current situation. Knowledge producers and knowledge brokers may work together to consider the knowledge users' context. KT literature says that knowledge users are not "free-floating entities" but are committed to larger structures and systems (Jacobson et al., 2003, p. 95). Thus, in the decision-making process, there are two types of structures: First, formal structures are entities such as legislatures, executive agencies, and bureaucracies. Second, informal structures include citizen groups, organizations, and stakeholder coalitions. These structures have different characteristics that are likely to affect the KT process (Jacobson et al., 2003). The modification in the dimension to an **ongoing problem identification of the problem** may address this issue.

i. Conceptual KT tools can guide the use of the best knowledge available to inform health promotion actions designed to improve health equity (Davison & National Collaborating Centre for Determinants of Health, 2013; Government of Canada, 2009). In this sense, the INSPQ KT plan failed to mention equity, social justice, and similar concepts. For this reason, a new criterion was added to the D3 dimension, which **includes the identification of vulnerable knowledge users, such as people with disabilities, women, Black people, Indigenous people, children, and the LGBTQ+ community.**

ii. For D4 dimension, I highlighted the need for **partnership with knowledge brokers or intermediaries**, adding a criterion to this dimension. This is needed, especially when

knowledge producers and knowledge users have insufficient theoretical and methodologic understanding of KT's know-how.

iii. For dimension 5, this thesis empirical results found that knowledge producers mentioned barriers and facilitators to the KT strategies development. Thus, the Brazilian KT roadmap has to discuss **mechanisms and tools to facilitate the development of useful KT strategies**. Adding a new criterion to this dimension will emphasise the need to identify barriers and facilitators in the beginning of the KT roadmap.

iv. Continuous assessment is critical to KT practices and programs' effectiveness in terms of implementation, results, and long-term impact (Champagne et al., 2018). Thus, because KT evaluation is a central phase in the KT process, I stress that the dimension 7 KT evaluation should be a properly funded ongoing process. To this end, I modified the criterion to an ongoing KT evaluation process.

v. Lastly, I suggest that each dimension be marked with different colors to facilitate visualization during KT planning; for example, Predominant, Moderate, and Hardly or not at all. Adding color can draw attention to crucial parts of the KT roadmap and this can facilitate the visual characterization of each (Better Evaluation, 2014).

6.1.3.3. Barriers to Using the KT Roadmap in Brazil

Knowledge producers in Brazil may encounter some difficulties in the application of the KT roadmap mainly in relation to the concepts of KT and the organizational support needed to use it. The lack of knowledge about KT concepts can be a barrier to the use of the KT roadmap for knowledge producers who are new to KT practices. Therefore, it is necessary to improve the KT skills and competencies of knowledge producers interested in implementing the KT roadmap. For example, before applying the KT roadmap, research institutions can propose workshops to discuss the main KT concepts and practices. Without organizational support, it can be difficult for knowledge producers to apply the KT roadmap on their own. Knowledge producers need to have organizational support, funding, and adequate time to implement the KT roadmap. Despite these barriers, the KT roadmap will be an important conceptual tool for the development of KT practices and research in Brazil, providing an overview of solid KT concepts and strategies used worldwide.

Chapter 7 – Conclusion

7.1. Knowledge Translation Practices in Brazil

This thesis attempted to understand KT in different research projects and management practices while proposing a KT roadmap adapted to the Brazilian context. An example of three different modalities of knowledge translation was presented first. A description and an in-depth analysis of the complexity surrounding KT practices implemented by the PDTSP-*Teias* network was discussed. Moreover, a seminal adaptation of a KT roadmap to the Brazilian context was offered. The use and adaptation of the INPSPQ KT plan showed KT actions, and strategies implemented in Brazil. While filling knowledge gaps in these areas, findings that contributed to a better understanding KT practices in Brazil included the lack of KT projects evaluation, questions about financial resources and political will related to KT projects, and knowledge producers' lack of KT conceptual tools to implement KT projects.

This thesis proposes a KT roadmap as a conceptual tool for public health and health promotion in Brazil. I adapted this roadmap, which is based on the INSPQ KT plan, to socially vulnerable areas, thus contributing to the production of knowledge about KT practices in health promotion in Brazil. The thesis used conceptual KT tools to understand the characteristics of KT practices implemented by the case teams. The results shed light on the KT strategies and approaches used by the PDTSP-*Teias* network. The knowledge gained from the PDTSP-*Teias* network provides examples of how to develop KT practices in countries with substantial social disparities. These insights have implications for KT practices in countries where KT concepts are developing.

Given the lack of conceptual KT tools adapted to conditions of social vulnerabilities, the substantial gap between the knowledge produced by academics and research institutions and the knowledge used in practice in Brazil shed light on the formulation of the general objective of this thesis, i.e. to understand KT in different research projects and management practices and propose a KT roadmap adapted to the Brazilian context. With these objectives in mind, I sought to describe three projects as examples of three different KT modalities, perform a *post hoc* analysis of KT actions and strategies implemented by the three projects undertaken by the PDTSP-*Teias*

network embracing the period from 2009 to 2013 (three case studies), and verify how participation in the PDTSP-*Teias* network facilitated KT practices between knowledge producers and knowledge users (a cross-case study).

Considering how the three cases (research projects) were characterized, we found that even in similar contexts and research conditions, KT practices could be quite different. Based on the INSPQ KT plan, the case teams developed different KT practices, while participation in a research network favored the development of KT practices, albeit with some limits. This said, the KT roadmap's proposition can fill the gap in KT practices in Brazil. The use of the KT roadmap can facilitate the systematization of practices developed and not organized in iterative KT processes throughout the development of the knowledge translation projects. Thus, the roadmap can favor the evolution of research projects through dialogue between knowledge producers and knowledge users, helping them to understand and adapt to the context, via the validation and adoption of KT products. In addition, these changes are related to changes in knowledge, attitudes, and behavior of the different groups involved (local community, health care users, professionals, and health managers).

7.2. Future Areas of Research

7.2.2. The PMA Network

This thesis raises new questions about more recent KT practices implemented in Brazil and about the potential application of the Brazilian KT roadmap to other research networks. One question sparked by the reported findings is whether using the KT roadmap adapted to Brazil can help similar research networks implement more effective KT strategies for knowledge users. It is also essential to know how the evaluation of the KT strategies can be carried out. With these questions in mind, one possible network that could use the Brazilian KT roadmap is the Program of Public Policy and Models of Health Care and Management/*Programa de Políticas Públicas e Modelos de Atenção e Gestão à Saúde* (PMA).

The PDTSP program ended when the PDTSP-*Teias* network closed. Subsequently, the management committee proposed the PMA, which relied a little about the PDTSP content and

the same ideology. However, the name was modified in order to set up a public policy network and create a health care model. Only one knowledge producer who participated in the PDTSP and some management committee members remained in this public policy network.

In 2016 the PMA network started to conduct applied research into public policy and health care models, encouraging a collaborative culture in order to produce knowledge and creative solutions in the area of public health (Fiocruz, 2020). The PMA is currently composed of 19 research projects approved in 2015 by the PMA public notice. Fourteen projects are funded by Fiocruz's Vice Presidency of Research and Biological Collections (VPPCB), and the Vice-Presidency funds five of them in the areas of Attention, Environment, and Health Promotion (VPAAPS). The PMA network's dynamics encourage the "transfer of technical and scientific knowledge between the scientific community, health services management, and civil society [groups] through meetings, seminars, construction of communication tools, periodic monitoring of projects, among other actions" (Fiocruz, 2020, p. 1). Thus, the PMA already has good KT knowledge, yet Fiocruz needs to implement KT strategies systematically throughout the foundation.

7.3. Contributions to Health Promotion in Brazil

As highlighted in this thesis, the gap between knowledge and action to improve health is a growing global concern in the field of health promotion (Davison & National Collaborating Centre for Determinants of Health, 2013).

The right to know is an intrinsic part of citizenship. Knowledge control on the part of knowledge producers weakens democratic competence, favoring, as observed today, the expansion of behaviors linked to the interests of segments that control the means of disseminating knowledge (Bosi, 2014).

Knowledge should be translated to clarify and overcome socio-sanitary problems (Bosi, 2014). In health promotion, it is even more necessary to access results and direct research, bringing academics, health services, decision-makers, and the community at large closer together. Likewise, it is necessary to have technical skills in order to understand, contextualize, and translate research results, which involve interpretations and different points of view,

contradictions, and mediations. This cannot be reduced to prescriptions and linear relationships. Challenges arise from the lack of trained personnel, both for research and its application, and the inadequacy of the mechanisms of knowledge translation (Bosi, 2014; Miranda et al., 2020a). In this sense, knowledge translation in health promotion is in its infancy in Brazil.

The current Brazilian context highlights the challenges of the complexity of health promotion and knowledge translation. Perhaps the present crisis in Brazilian science offers an opportunity to reappraise science and research, with some confidence in the possibility of new alliances between knowledge producers and knowledge users (far from the alienating bonds of productivity). Such a path can lead to a new era in which the challenges of knowledge translation highlighted here are no longer relevant (Bosi, 2014).

Adapting the INSPQ KT plan can help guide the application of knowledge to health promotion actions and improve health in Brazil. This KT roadmap can be a promising adaptation of the knowledge-to-action model, enabling it to support action on the social determinants of health (Davison & National Collaborating Centre for Determinants of Health, 2013). The adaptation of this KT roadmap can enable health promotion organizations and decision-makers in Brazil to address the social determinants of health so as to:

i. involve local communities and decision-makers,
ii. prioritize inclusive and participatory approaches that recognize varied forms of knowledge and perspectives,
iii. draw knowledge from multiple sources (research-based, tacit, and users' knowledge),
iv. recognize the importance of contextual factors, and
v. prioritize interaction across sectors.

Thus, the lessons learned from this thesis are that to speed up KT practices and effect change in Brazil, knowledge producers and knowledge users need:

i. conceptual KT tools adapted to the Brazilian context,
ii. sufficient theoretical and methodologic understanding about related know-how,
iii. organizational support, and
iv. political will.

7.4. Dissemination and KT Plan for Thesis Results

Table 17 presents the dissemination strategy for thesis results. This plan can inform stakeholders and help them discuss how the results can improve their KT practices.

Table 17: Dissemination and KT Plan for Thesis Results

Dissemination to Peers					
WHAT? (Knowledge)	**WHEN?**	**FOR WHOM?** (Target Audiences)	**WHY?** (Specific Objective Targeted)	**HOW?** (KT Strategies)	**WITH WHOM?** (Actors Involved)
Research Protocol Dissemination	May 2018	Public health knowledge producers and graduate students	Inform and disseminate to facilitate understanding of preliminary conceptual results and pilot interviews	Oral presentation at the AAESPUM Symposium (Loosely structured interactions)	Thesis supervisor and co-supervisor Role: Return and validation of the presentation
Research Protocol Dissemination	June 2018	Knowledge producers and knowledge users of the PDTSP-*Teias* network	Raise awareness: knowledge translation and research protocol Influencing: generating interest and a positive attitude towards knowledge translation and about the research protocol	PowerPoint presentation (structured and punctual interactions between participants and presenter)	- PDTSP-*Teias* network steering committee Role: Access to key informants - Thesis supervisor and co-supervisor Role: Co-construction of the presentation
Partial Research Results	October 2018	Qualitative Research Professionals	Inform Diffusion	Oral presentation at the 3rd World Conference on Qualitative Research (Loosely structured interactions)	- Thesis supervisor and co-supervisor - *Chaire* CACIS team

Dissemination to Peers					
WHAT? (Knowledge)	**WHEN?**	**FOR WHOM?** (Target Audiences)	**WHY?** (Specific Objective Targeted)	**HOW?** (KT Strategies)	**WITH WHOM?** (Actors Involved)
					Role: Return and validation of the presentation
Partial Research Results First Objective	November 2018	Brazilian public health graduate students	Inform Diffusion	Oral presentation at the 2nd Brespum Workshop (Structured and punctual interactions between participants and presenter)	- Thesis supervisor and co-supervisor - *Chaire* CACIS team Role: Return and validation of the presentation
Partial Research Results First Objective	April 2019	Health promotion researchers and stakeholders	Inform Diffusion	Oral presentation at the 23rd IUHPE World Conference on Health Promotion (Loosely structured interactions)	- Thesis supervisor and co-supervisor - *Chaire* CACIS team Role: Return and validation of the presentation
Research Observations and Recommendations about KT Practices in Brazil	April 2020	Public health knowledge producers in Brazil	Inform Diffusion	A scientific article published in a Brazilian scientific review Are public health researchers in Brazil ready and supported to do knowledge translation? (No interaction)	- Thesis supervisor and co-supervisor Role: Return, co-writing and validation of the article
Partial Research Results Second Objective	October 2020	Public health researchers and stakeholders	Inform and disseminate to facilitate understanding of the empirical results of the thesis	Poster presentation at the 16th World Congress in Public Health (loosely structured interactions)	- Thesis supervisor and co-supervisor - *Chaire* CACIS team Role: Return and validation of the poster

Dissemination to Peers					
WHAT? (Knowledge)	**WHEN?**	**FOR WHOM?** (Target Audiences)	**WHY?** (Specific Objective Targeted)	**HOW?** (KT Strategies)	**WITH WHOM?** (Actors Involved)
Thesis Defense	Fall 2020	Public health knowledge producers and graduate students	Inform Discuss	Oral presentation	- Thesis supervisor and co-supervisor - *Chaire* CACIS team Role: Return and validation of the presentation
Research Results Third Objective	Winter 2021	Researchers and public health professionals in Brazil and Canada	Inform - offer quality documentation on the empirical data of the thesis (Systematization of the knowledge translation practices in the PDTSP-*Teias* network)	Scientific article (2) (No interaction)	Thesis supervisor and co-supervisor Role: Return, co-writing and validation of the article
Dissemination in Practice Settings					
Thesis dissemination to PDTSP-*Teias* network key informants	Fall 2020	PDTSP-*Teias* network key informants Fiocruz Vice-Presidency	Inform – Raising awareness about thesis main results	Expanded summary	Thesis supervisor and co-supervisor PDTSP-*Teias* network key informants Role: Return, co-writing and validation of the expanded summary
KT roadmap Translation to Portuguese Dissemination to the PMA steering committee and PDSTP-*Teias* network key informants	Fall 2020	PDTSP-*Teias* network key informants PMA steering committee Fiocruz Vice-Presidency	Inform - Raising awareness about the adapted KT roadmap - Improve actors' practices	Workshop	Thesis supervisor and co-supervisor PMA steering committee Role: Return, co-writing and validation of the workshop

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Appendices

Appendix A. Semi-Structured Interview Guide

1) What is your role in the PDTSP-*Teias* network? Specifically, can you describe your involvement in project you were in?

2) What does participation in the PDTSP-*Teias* network mean to you?

3) What are the difficulties you have encountered during your participation in the PDTSP-*Teias* network?

4) What benefits do you receive by participating in the PDTSP-*Teias* network?

5) How would you describe your participation in the PDTSP-*Teias* network to a potential participant who is deciding whether or not to participate in a socio-technical network?

6) What do you know about knowledge translation and exchange?

7) Can you please tell me about your collaboration with the knowledge user/knowledge producer?

8) What skills and competencies do you think you acquired through your involvement in this project?

9) What factors facilitated your engagement in the project? On the other hand, what were some barriers?

10) Do you think this collaboration facilitated knowledge translation and exchange between you? If so, could you please explain?

11) Do you think participating on the PDTSP-*Teias* network facilitated knowledge translation and exchange? If so, could you please explain?

12) Has the PDTSP-*Teias* network enabled you to change your practice? If, so, could you please explain?

13) Is there anything else I should have asked, or you would like to share?

Appendix B. Recruitment Letter

Dear (participant name),

You are being invited to participate as a volunteer in the study entitled **Knowledge Translation and Exchange in Public Health: A Case Study in Manguinhos, Brazil**[8]. In this study, we aim to assess whether there have been changes in the practice of practitioners that participated in the Program of Development and Technological Innovation in Public Health (PDTSP-*Teias* Network) in Manguinhos, Brazil[9]. The reason leading us to study this subject is the emergent understanding on how to support the use of research evidence in the decision-making process. Consensus about the importance of transferring knowledge into action is well established; in contrast, there is little evidence about what has worked, where, how, and with whom.

During this study, you will be requested to describe how your participation in the PDTSP-*Teias* Network facilitated knowledge translation and exchange between knowledge producers and knowledge users. You were chosen to participate because of your involvement in the PDTSP-*Teias* Network in the period comprising 2009 to 2012.

This project will be a retrospective unique case study with nested levels of analysis being the PDTSP-*Teias* Network the case study and three research projects, in which there are knowledge producers and knowledge users as participants, as levels of analysis. The study will be guided by the Actor-Network Theory that will help us understand how participation in the sociotechnical network (PDTSP-Teias) facilitates knowledge translation and exchange between producers and users of knowledge. In order to achieve our research objectives, this study will include three types of data collection: 1) literature review; 2) face-to-face semi-structured interviews; and 3) focus groups.

The outcomes of the project will include, but are not limited to: 1) systematization and document analysis of the PDTSP-*Teias* Network: literature reviews on the texts produced by the program coordination, official and unofficial, including minutes and meeting reports, management reports and promotional material, legislation, institutional documents of the Oswaldo Cruz Foundation (Fiocruz), and scientific papers published in peer-reviewed journals; 2) findings that will contribute to the advancement of scientific knowledge and the health of the community of

[8] As knowledge translation is the terminology more frequently used in Brazil and Canada, the title of this thesis changed to Knowledge Translation in Public Health: A Case Study in Manguinhos, Brazil.

[9] The main objective and specific objectives were reorganized after the recruitment. This thesis' main objectives are to understand KT in different research projects and management practices and propose a KT roadmap adapted to the Brazilian context. Hence, with these objectives, the specific objectives were to: i) present three projects as examples of three different modalities of KT, ii) perform a *post hoc* analysis of KT actions and strategies implemented by these three projects undertaken by the PDTSP-*Teias* network embracing the period from 2009 to 2013, and iii) verify how participation in the PDTSP-*Teias* network facilitated KT between knowledge producers (mostly researchers) and knowledge users (in Manguinhos).

Manguinhos through the empowerment of the practitioners who participated in the PDTSP-*Teias* Network; 3) dissemination of knowledge in peer-reviewed articles and conferences.

You will be clarified in any aspect you wish and will be free to participate or refuse to participate. Your participation is voluntary and the refusal to participate will not result in any penalty.

The researcher guarantees that she will treat your identity and data with confidentiality standards. The research results will be available to you when data analysis will be finished. Your name or material indicating your participation will not be released without your permission. The data and instruments used in the research will be archived with the researcher responsible for a period of seven years, and after that time will be destroyed. This recruitment form is printed in two copies, one copy will be filed by the researcher responsible for the project, and the other will be provided to you.

The researchers involved with this project are Érica da Silva Miranda, Ph.D. candidate in Public Health - Social and Preventive Medicine Department of the School of Public Health of the Université de Montréal, phone number: [redacted], email address: [redacted] Ana Cláudia Figueiró, Ph.D. - Department, center or institute: Escola Nacional de Saúde Pública, phone number: [redacted] Email address: [redacted] and Louise Potvin, Ph.D. - Social and Preventive Medicine Department of the School of Public Health of the Université de Montréal, phone number: [redacted], email address: [redacted]

In case of doubts regarding the ethical aspects of this study, you can contact the **CEP/ENSP** Rua Leopoldo Bulhões, 1.480, Térreo, Manguinhos - Rio de Janeiro - RJ / CEP. 21041-210 - Telefax - [redacted], e-mail: [redacted] Site: http://www.ensp.fiocruz.br/etica

Your participation contributes to the advancement of knowledge through better understanding of the translation of knowledge between researchers and knowledge users. You can also have direct benefit from receiving information about health innovations in your field. Your contributions to this study will also lead to new and improved information about knowledge translation in Manguinhos.

Sincerely,

Érica da Silva Miranda, Ph.D. Public Health candidate
École de santé publique de l'Université de Montréal

Appendix C. Free and Informed Consent Form (Interviews)

The free and informed consent form was read and explained, in person, to all interview participants. This consent form was translated to Portuguese, the official language in Brazil. Before the beginning of each interview, I explained all information to the participants to address any questions they may had.

FREE AND INFORMED CONSENT FORM (Interviews)
Project title: Knowledge Translation and Exchange in Manguinhos, Brazil

You are invited to participate in a research project that aims to assess whether there have been changes in the practice of practitioners which have participated in the Program Development and Technological Innovation in Public Health (PDTSP-*Teias* Network) in Manguinhos, Brazil. Before agreeing to participate in this project, it is important to take the time to read and understand the information below. If there are words or sections that you do not understand, feel free to ask questions.

IDENTIFICATION

Researcher responsible for the project: Érica da Silva Miranda (Ph.D. candidate in Public Health)
Department, center or institute: Social and Preventive Medicine Department of the School of Public Health of the Université de Montréal
Research adviser: Louise Potvin, Ph.D.
Research co-adviser: Ana Cláudia Figueiró, Ph.D.

ABSTRACT

Background: In the last decades, there is an emergent understanding on how to support the use of research evidence in the decision-making process. Yet, its application is limited. An agreement about the importance of transferring knowledge into action is extensive; in contrast, there is little evidence about what has worked, where, how, and with whom. In this direction, this study will put together researchers from the *École de Santé Publique de l'Université de Montréal* in Canada and from the *Escola National de Saúde Pública Sergio Arouca* (Oswaldo Cruz Foundation), and knowledge users from the *Território de Manguinhos* in Rio de Janeiro, Brazil.
Central question: How does participation in the socio-technical network (PDTSP-*Teias* Network) facilitate knowledge translation and exchange between knowledge producers and knowledge users? **Sub-questions:** Where in the socio-technical network does knowledge exchange take place? When does knowledge exchange take place in the network? How does the exchange of knowledge increase the communication between researchers and knowledge users?

Methods: This project will be a retrospective unique case study with nested levels of analysis being the PDTSP-*Teias* Network the case study and three research projects, in which there are knowledge producers and knowledge users as participants, as levels of analysis. The study will be

guided by the Actor-Network Theory that will help us understand how participation in the sociotechnical network (PDTSP-Teias) facilitates knowledge translation and exchange between producers and users of knowledge. In order to achieve our research objectives, this study will include three types of data collection: 1) literature review; 2) face-to-face semi-structured interviews; and 3) focus groups.

Results: The outcomes of the project will include, but are not limited to: 1) systematization and document analysis of the PDTSP-*Teias* Network: literature reviews on the texts produced by the program coordination, official and unofficial, including minutes and meeting reports, management reports and promotional material, legislation, institutional documents of the Oswaldo Cruz Foundation (Fiocruz), and scientific papers published in peer-reviewed journals; 2) findings that will contribute to the advancement of scientific knowledge and the health of the community of Manguinhos through the empowerment of the practitioners who participated in the PDTSP-*Teias* Network; 3) dissemination of knowledge in peer-reviewed articles and conferences.

PROJECT OBJECTIVES AND FOUNDING

(1) to perform a *post hoc* systematization of the process of knowledge translation and exchange in the PDTSP-Network in the period comprising 2009 to 2012;

(2) to verify, using the PDTSP-*Teias* Network process and outcomes, how participation in the PDTSP-*Teias* Network facilitated knowledge translation and exchange between knowledge producers and knowledge users;

(3) to analyse how the PDTSP-*Teias* Network influenced the translation of evidence into practice.

This research project receives financial support from the “Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes)” in Brazil.

PROCEDURE (S) OR THE TASKS REQUESTED

Your participation is required for an interview that will take about 45 minutes of your time. This interview will be digitally recorded with your permission. The interview will be conducted in a place and time suitable to you. The transcript of the interview that will follow will not identify you. All documents and interviews are going to be coded and kept in a secure place. Only the research team will have access to this information. In the semi-structural face-to-face interviews, we will invite three participants of each project, as well as the former coordinators of the PDTSP-*Teias* Network (n=14).

BENEFITS

Your participation contributes to the advancement of knowledge through better understanding of the translation of knowledge between researchers and practitioners. You can also have direct benefit from receiving information about health innovations in your field. Your contributions to this study will also lead to new and improved information about knowledge translation and exchange in Manguinhos.

POTENTIAL RISKS

There is the potential risk related to the possibility of identification of participants. To minimize this, you will be fully informed of all possible risks so you can choose whether to participate in this study or withdraw from participation at any time without any harm to yourself.

CONFIDENTIALITY

It is understood that all information collected in the interview is confidential. Only research team members will have access to the transcripts. All research equipment and your consent form will be kept separately in a secure place in the office of the researcher responsible for at least 7 years.

To protect your identity and privacy of the data collected from you will always be identified by an alphanumeric code. The code associated with your name will be known only by the project lead researcher (or delegate).

Digital audio recordings will be erased at the end of the project. The forms of information and consent will be retained for a period of two years before being destroyed.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

Your participation in this project is voluntary. This means that you agree to participate in the project without any constraint or external pressure, and moreover you are free to discontinue participation at any time during this research, without prejudice of any nature whatsoever and without justify yourself. In this case, and unless otherwise directed by you, the documents received will be destroyed.

Your agreement to participate also means that you agree that the research team could use information collected in articles, thesis of student team members, conferences and scientific papers, on the condition that no information that identifies you is publicly disclosed unless explicit consent from you.

DISCLAIMER

By agreeing to participate in this project, you do not waive any of your rights nor release the researchers, the sponsor or involved institutions from their legal and professional obligations.

QUESTIONS ON THE PROJECT OR YOUR RIGHTS?

For additional questions on the project, your participation and your rights as a research participant, or to withdraw from the project, you can contact:

Érica da Silva Miranda, Ph.D. candidate in Public Health

The Research Ethics Committee of the *Escola Nacional de Saúde Pública Sérgio Arouca* approved the research project in which you will participate. For information about the responsibilities of the research team in terms of ethics of research involving humans or to make a complaint, you can contact **CEP/ENSP -** Rua Leopoldo Bulhões, 1.480, Térreo, Manguinhos - Rio de Janeiro - RJ /

CEP. 21041-210 - Telefax - [redacted] e-mail: [redacted] Site: http://www.ensp.fiocruz.br/etica

ACKNOWLEDGMENTS

Your collaboration is important to the realization of our project and the research team would like to thank you. If you would like a written summary of the main results of this research, please add your details below.

SIGNATURES:

By the present:
a) I have read this information and consent form,
b) I voluntarily consent to participate in this research project,
c) I understand the project objectives and that my participation tasks,
d) I confirm having had sufficient time to consider my decision to participate,
e) I also recognize that the project manager (or delegate) has answered my questions satisfactorily, and
f) I understand that my participation in this research is completely voluntary and that it can be terminated at any time without penalty in any form, or justification to give.

Signature of participant:

Name (printed) and contact: Date:

I hereby declare:

a) explaining the purpose, nature, benefits, project risks and other provisions of the information and consent form; and
b) have responded to the best of my knowledge the questions.

Signature of the researcher responsible for the project or his, her delegate (s):

Name (printed) and contact: Date:

A copy of the Information Form and signed consent was given to participants.

Appendix D. Free and Informed Consent Form (Focus Group)

The free and informed consent form was read and explained, in person, to all focus group participants. This consent form was translated to Portuguese, the official language in Brazil. Before the beginning of the focus group, I explained all information to the participants to address any questions they may had.

FREE AND INFORMED CONSENT FORM (Focus group)
Project title: Knowledge Translation and Exchange in Manguinhos, Brazil

You are invited to participate in a research project that aims to assess whether there have been changes in the practice of practitioners which have participated in the Program Development and Technological Innovation in Public Health (PDTSP-*Teias* Network) in Manguinhos, Brazil. Before agreeing to participate in this project, it is important to take the time to read and understand the information below. If there are words or sections that you do not understand, feel free to ask questions.

IDENTIFICATION

Researcher responsible for the project: Érica da Silva Miranda (Ph.D. candidate in Public Health)
Department, center or institute: Social and Preventive Medicine Department of the School of Public Health of the Université de Montréal
Research adviser: Louise Potvin, Ph.D.
Research co-adviser: Ana Cláudia Figueiró, Ph.D.

ABSTRACT

Background: In the last decades, there is an emergent understanding on how to support the use of research evidence in the decision-making process. Yet, its application is limited. An agreement about the importance of transferring knowledge into action is extensive; in contrast, there is little evidence about what has worked, where, how, and with whom. In this direction, this study will put together researchers from the *École de Santé Publique de l'Université de Montréal* in Canada and from the *Escola National de Saúde Pública Sergio Arouca* (Oswaldo Cruz Foundation), and knowledge users from the *Território de Manguinhos* in Rio de Janeiro, Brazil.
Central question: How does participation in the socio-technical network (PDTSP-*Teias* Network) facilitate knowledge translation and exchange between knowledge producers and knowledge users? **Sub-questions:** Where in the socio-technical network does knowledge exchange take place? When does knowledge exchange take place in the network? How does the exchange of knowledge increase the communication between researchers and knowledge users?

Methods: This project will be a retrospective unique case study with nested levels of analysis being the PDTSP-*Teias* Network the case study and three research projects, in which there are knowledge producers and knowledge users as participants, as levels of analysis. The study will be guided by the Actor-Network Theory that will help us understand how participation in the

sociotechnical network (PDTSP-Teias) facilitates knowledge translation and exchange between producers and users of knowledge. In order to achieve our research objectives, this study will include three types of data collection: 1) literature review; 2) face-to-face semi-structured interviews; and 3) focus groups.

Results: The outcomes of the project will include, but are not limited to: 1) systematization and document analysis of the PDTSP-*Teias* Network: literature reviews on the texts produced by the program coordination, official and unofficial, including minutes and meeting reports, management reports and promotional material, legislation, institutional documents of the Oswaldo Cruz Foundation (Fiocruz), and scientific papers published in peer-reviewed journals; 2) findings that will contribute to the advancement of scientific knowledge and the health of the community of Manguinhos through the empowerment of the practitioners who participated in the PDTSP-*Teias* Network; 3) dissemination of knowledge in peer-reviewed articles and conferences.

PROJECT OBJECTIVES AND FOUNDING

(1) to perform a *post hoc* systematization of the process of knowledge translation and exchange in the PDTSP-Network in the period comprising 2009 to 2012;

(2) to verify, using the PDTSP-*Teias* Network process and outcomes, how participation in the PDTSP-*Teias* Network facilitated knowledge translation and exchange between knowledge producers and knowledge users;

(3) to analyse how the PDTSP-*Teias* Network influenced the translation of evidence into practice.

This research project receives financial support from the “Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (Capes)” in Brazil.

PROCEDURE (S) OR THE TASKS REQUESTED

Your participation is required for a focus group that will take about 90 minutes of your time. This focus group will be digitally recorded with your permission. The focus group will be conducted in a place and time suitable to the group participants. The transcript of the focus group that will follow will not identify you. All documents are going to be coded and kept in a secure place. Only the research team will have access to this information. In the focus groups, we will invite 5-10 members of the selected projects to participate (knowledge users and knowledge producers). The recruitment and access to the participants will be facilitated by the coordinators of the PDTSP-*Teias* Network.

BENEFITS

Your participation contributes to the advancement of knowledge through better understanding of the translation of knowledge between researchers and practitioners. You can also have direct benefit from receiving information about health innovations in your field. Your contributions to this study will also lead to new and improved information about knowledge translation and exchange in Manguinhos.

POTENTIAL RISKS

There is the potential risk related to the possibility of identification of participants. To minimize this, you will be fully informed of all possible risks so you can choose whether to participate in this study or withdraw from participation at any time without any harm to yourself.

CONFIDENTIALITY

It is understood that all information collected in the interview is confidential. Only research team members will have access to the transcripts. All research equipment and your consent form will be kept separately in a secure place in the office of the researcher responsible for at least 7 years.

To protect your identity and privacy of the data collected from you will always be identified by an alphanumeric code. The code associated with your name will be known only by the project lead researcher (or delegate).

We remind you that the confidentiality relies on the reciprocal commitment not to disclose the identity of the other participants and the nature of the conversations to any person or third party not participating in the focus group.

Digital audio recordings will be erased at the end of the project. The forms of information and consent will be retained for a period of two years before being destroyed.

VOLUNTARY PARTICIPATION AND WITHDRAWAL

Your participation in this project is voluntary. This means that you agree to participate in the project without any constraint or external pressure, and moreover you are free to discontinue participation at any time during this research, without prejudice of any nature whatsoever and without justify yourself. In this case, and unless otherwise directed by you, the documents received will be destroyed.

Your agreement to participate also means that you agree that the research team could use information collected in articles, thesis of student team members, conferences and scientific papers, on the condition that no information that identifies you is publicly disclosed unless explicit consent from you.

DISCLAIMER

By agreeing to participate in this project, you do not waive any of your rights nor release the researchers, the sponsor or involved institutions from their legal and professional obligations.

QUESTIONS ON THE PROJECT OR YOUR RIGHTS?

For additional questions on the project, your participation and your rights as a research participant, or to withdraw from the project, you can contact:

Érica da Silva Miranda, Ph.D. candidate in Public Health

The Research Ethics Committee of the *Escola Nacional de Saúde Pública Sérgio Arouca* approved the research project in which you will participate. For information about the responsibilities of the research team in terms of ethics of research involving humans or to make a complaint, you can contact **CEP/ENSP -** Rua Leopoldo Bulhões, 1.480, Térreo, Manguinhos - Rio de Janeiro - RJ / CEP. 21041-210 - Telefax - [redacted] e-mail: [redacted] Site: http://www.ensp.fiocruz.br/etica

ACKNOWLEDGMENTS

Your collaboration is important to the realization of our project and the research team would like to thank you. If you would like a written summary of the main results of this research, please add your details below.

SIGNATURES:

By the present:
a) I have read this information and consent form;
b) I voluntarily consent to participate in this research project;
c) I understand the project objectives and that my participation tasks;
d) I confirm having had sufficient time to consider my decision to participate;
e) I also recognize that the project manager (or delegate) has answered my questions satisfactorily; and
f) I understand that my participation in this research is completely voluntary and that it can be terminated at any time without penalty in any form, or justification to give.

Signature of participant:

Name (printed) and contact: Date:

I hereby declare:

a) explaining the purpose, nature, benefits, project risks and other provisions of the information and consent form; and
b) have responded to the best of my knowledge the questions.

Signature of the researcher responsible for the project or his, her delegate (s):

Name (printed) and contact: Date:

A copy of the Information Form and signed consent was given to participants.

Appendix E. Data Inventory

Reference Code	Date	Title of the Document	Description
CV1	25 nov 2019	CV Lattes	Curriculum Vitae from *Plataforma Lattes*, Brazil
CV2	25 nov 2019	CV Lattes	Curriculum Vitae from *Plataforma Lattes*, Brazil
CV3	25 nov 2019	CV Lattes	Curriculum Vitae from *Plataforma Lattes*, Brazil
CV4	26 nov 2019	CV Lattes	Curriculum Vitae from *Plataforma Lattes*, Brazil
CV5	26 nov 2019	CV Lattes	Curriculum Vitae from *Plataforma Lattes*, Brazil
Proposal Letter 1	No registry	CASE 2 Project Proposal	Letter of proposal of the project Model of pharmaceutical services to patients with *Diabetes mellitus*: dispensing and pharmacotherapeutic monitoring, presenting the goals, impacts, schedule, communication plan, and financial resources
Letter of Interest 1	No registry	*Rede PDTSP-TEIAS Questões para estruturação na visão de Análise de Redes Sociais*	Letter of Interest of CASE 3 project. Title: Social Cooperation for Democratic and Participatory Management in the Integrated Health Care Territory
Letter of Interest 2	No registry	*Rede PDTSP-TEIAS Questões para estruturação na visão de Análise de Redes Sociais*	Letter of Interest of CASE 2 project. Title: Model of pharmaceutical services to patients with *Diabetes mellitus*: dispensing and pharmacotherapeutic monitoring
Letter of Interest 3	No registry	*Rede PDTSP-TEIAS Questões para estruturação na visão de Análise de Redes Sociais*	Letter of Interest of CASE 1 project. Title: Emancipatory health promotion trails in dialogue with the primary care
KTPlan1	03 jun 2014	*2a Oficina de Trabalho sobre Pesquisa, Inovação e Gestão do Conhecimento em Saúde Pública – Rede Saúde Manguinhos*	Instrument: Knowledge Translation (First Planning) Project Title: Social-Environmental Diagnosis of Manguinhos
KTPlan 2	03 jun 2014	*2a Oficina de Trabalho sobre Pesquisa, Inovação e Gestão do Conhecimento em Saúde Pública – Rede Saúde Manguinhos*	Instrument: Knowledge Translation (First Planning) Project Title: Public Policies and Housing - A participatory analysis of the PAC Manguinhos, RJ from the perspective of health promotion and environmental justice

Reference Code	Date	Title of the Document	Description
DOC1	2016	*Trilhas da promoção emancipatória da saúde em diálogo com a atenção básica* (Pivetta et al., 2016)	Book Section
DOC2	2016	*Em busca de ser viços farmacêuticos com foco na pessoa com Diabetes mellitus em Manguinhos - conhecer para melhorar* (Lucia Luiza et al., 2016b)	Book Section
DOC3	2016	*Diagnóstico socioambiental de Manguinhos: relato de uma experiência de pesquisa em favelas* (Abreu Bruno et al., 2016).	Book Section
DOC4	2013	*Pesquisa analisa região da Refinaria de Manguinhos* (Schincariol, 2013)	Health news on the website of the *Sérgio Arouca* National School of Public Health – Informe ENSP
DOC5	2012	Title of the project: Participation and intersectoriality: development of local strategies for health promotion at *Teias*-School Manguinhos Subtitle: Contributions to a socio-environmental diagnosis in Manguinhos	CASE 3 Report to the PDTSP-*Teias* Network
DOC6	2012	Title of the project: Model of pharmaceutical services to patients with Diabetes mellitus: dispensing and pharmacotherapeutic monitoring	CASE 2 Report to the PDTSP-*Teias* Network
DOC7	2016	*Trajetória da rede PDTSP-Teias:*	Book Section

Reference Code	Date	Title of the Document	Description
		Aprendizados e desafios de um modelo de gestão de pesquisa para soluções em saúde pública (I. S. Santos et al., 2016)	
DOC8	2016	*A avaliação da rede PDTSP-Teias:* *Contribuição ao debate sobre construção do conhecimento e de produtos para o SUS* (Figueiró et al., 2016)	Book Section
DOC9	July 2013	*Rede PDTSP-Teias:* *Contribuição da pesquisa com inovação e desenvolvimento tecnológico* *Para a gestão de redes integradas de atenção à saúde a partir da experiência do teias escola manguinhos* (Rabello, Soares Santos & Argento Goldstein, 2013)	General document of the PTDSP-*Teias* network produce by the steering committee.
DOC10	2016	*As conexões entre saúde, desenvolvimento e a P&D apropriada nas instituições de C&T em saúde À guisa de prefácio* (Buss, 2016)	Book section
DOC11	2016	*Rede de pesquisa em Manguinhos:* *sociedade, gestores e pesquisadores* *em conexão com o SUS* (I. S. Santos & Goldstein, 2016)	Book
DOC12	2020	Strategic Planning Directory (Diplan) – Oswaldo Cruz Foundation (Fiocruz)	Description of the Strategic Panning Directory

Reference Code	Date	Title of the Document	Description
DOC13	2020	Vice Presidency of Environment, Health Care and Health Promotion (VPAAPS) - Fundação Oswaldo Cruz (Fiocruz)	Description of the Vice Presidency of Environment, Health Care and Health Promotion
DOC14	2020	PAHO_WHO Collaborating Centers - Oswaldo Cruz Foundation (Fiocruz)	List of the Ficocruz collaborating centers
DOC15	2020	Germano Sinval Faria School Health Center (CSEGSF/ENSP)	Mission of the *Germano Sinval Faria* School Health Center (CSEGSF/ENSP)
DOC16	2020	Who we are - *Teias*-School Manguinhos	Description of the initiative *Teias*-School Manguinhos
DOC17	No registry	Intersectoral Management Council of *Teias*-School Manguinhos	Internal Regulations of the Intersectoral Management Council of *Teias*-School Manguinhos
DOC18	2015	Research Network in the Manguinhos Territory A partnership between academia, health services and civil society	Portfolio about the projects of the PDTSP-*Teias* network
MODEL_PROJECT_ELABORATION	2010	Model for project elaboration	The PDTSP-Teias network coordination team's proposed model for project elaboration
LETTER_OF_INTEREST	2010	Letter of Interest Submission Form PDTSP-*Teias* network	Letter of Interest Submission Form All research teams interested to participate in the PDTSP-Teias network should present this letter od interest.
I_MEETING	06 jul 2010	Memory of the PDTSP Meeting - *TEIAS* Network	Memory of the meeting of the PDTSP-*Teias* Network
II_MEETING	03 ago 2010	Second meeting of the PDTSP-*Teias* Network	Memory of the Second meeting of the PDTSP-*Teias* Network
III_MEETING	22-24 ago 2010	Memory of the third PDTSP-*Teias* Network Meeting	Memory of the Third meeting of the PDTSP-*Teias* Network

Appendix F. Certificates of Ethical Approval by Health Research Ethics Committee (CERES) and Research Ethics Committee/*Comitê de Ética em Pesquisa* (CEP/ENSP) of the National School of Public Health in Brazil

Université de Montréal

Comité d'éthique de la recherche en santé

31 juillet 2017

Objet: Approbation éthique – « Knowledge translation and exchange in public health: A case study in Manguinhos, Brazil »

Mme Erica da Silva Miranda,

Le Comité d'éthique de la recherche en santé (CERES) a étudié le projet de recherche susmentionné et a délivré le certificat d'éthique demandé suite à la satisfaction des exigences précédemment émises. Vous trouverez ci-joint une copie numérisée de votre certificat; copie également envoyée à votre directeur/directrice de recherche et à la technicienne en gestion de dossiers étudiants (TGDE) de votre département.

Notez qu'il y apparaît une mention relative à un suivi annuel et que le certificat comporte une date de fin de validité. En effet, afin de répondre aux exigences éthiques en vigueur au Canada et à l'Université de Montréal, nous devons exercer un suivi annuel auprès des chercheurs et étudiants-chercheurs.

De manière à rendre ce processus le plus simple possible et afin d'en tirer pour tous le plus grand profit, nous avons élaboré un court questionnaire qui vous permettra à la fois de satisfaire aux exigences du suivi et de nous faire part de vos commentaires et de vos besoins en matière d'éthique en cours de recherche. Ce questionnaire de suivi devra être rempli annuellement jusqu'à la fin du projet et pourra nous être retourné par courriel. La validité de l'approbation éthique est conditionnelle à ce suivi. Sur réception du dernier rapport de suivi en fin de projet, votre dossier sera clos.

Il est entendu que cela ne modifie en rien l'obligation pour le chercheur, tel qu'indiqué sur le certificat d'éthique, de signaler au CERES tout incident grave dès qu'il survient ou de lui faire part de tout changement anticipé au protocole de recherche.

Nous vous prions d'agréer, Madame, l'expression de nos sentiments les meilleurs,

Dominique Langelier, présidente
Comité d'éthique de la recherche en santé (CERES)
Université de Montréal

DL/GP/gp
c.c. Gestion des certificats, BRDV
Louise Potvin, professeure titulaire, École de santé publique - Département de médecine sociale et préventive
Ana Cláudia Figueiró, chercheuse en santé publique,
p.j. Certificat #17-110-CERES-D

adresse postale
C.P. 6128, succ. Centre-ville
Montréal QC H3C 3J7

3744 Jean-Brillant
4e étage, bur. 430-11
Montréal QC H3T 1P1

Téléphone : 514-343-6111 poste 2604
ceres@umontreal.ca
www.ceres.umontreal.ca

Université de Montréal

N° de certificat
17-110-CERES-D

Comité d'éthique de la recherche en santé

CERTIFICAT D'APPROBATION ÉTHIQUE

Le Comité d'éthique de la recherche en santé (CERES), selon les procédures en vigueur, en vertu des documents qui lui ont été fournis, a examiné le projet de recherche suivant et conclu qu'il respecte les règles d'éthique énoncées dans la Politique sur la recherche avec des êtres humains *de l'Université de Montréal.*

Projet	
Titre du projet	**Knowledge translation and exchange in public health: A case study in Manguinhos, Brazil**
Étudiante requérante	**Erica da Silva Miranda** (ND), Candidate au Ph. D. en santé publique, École de santé publique - Département de médecine sociale et préventive
Sous la direction de	Louise Potvin, professeure titulaire, École de santé publique - Département de médecine sociale et préventive, Université de Montréal & Ana Cláudia Figueiró, chercheuse en santé publique, Escola National de Saúde Pública (Brésil).

Financement	
Organisme	CAPES (Brésil)
Programme	Bourse
Titre de l'octroi si différent	
Numéro d'octroi	
Chercheur principal	
No de compte	

MODALITÉS D'APPLICATION

Tout changement anticipé au protocole de recherche doit être communiqué au CERES qui en évaluera l'impact au chapitre de l'éthique.

Toute interruption prématurée du projet ou tout incident grave doit être immédiatement signalé au CERES

Selon les règles universitaires en vigueur, un suivi annuel est minimalement exigé pour maintenir la validité de la présente approbation éthique, et ce, jusqu'à la fin du projet. Le questionnaire de suivi est disponible sur la page web du CERES.

[redacted]

Dominique Langelier, présidente
Comité d'éthique de la recherche en santé
Université de Montréal

31 juillet 2017
Date de délivrance

1er août 2018
Date de fin de validité

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Université de Montréal

Comité d'éthique de la recherche en sciences et en santé (CERSES)

28 Janvier 2020

Objet: Certificat d'approbation éthique - 2ième renouvellement- « Knowledge translation and exchange in public health: A case study in Manguinhos, Brazil »

Mme Erica da Silva Miranda,

Le Comité d'éthique de la recherche en sciences et en santé (CERSES) a étudié votre demande de renouvellement pour le projet de recherche susmentionné et a délivré le certificat d'éthique demandé suite à la satisfaction des exigences qui prévalent. Vous trouverez ci-joint une copie numérisée de votre certificat; copie également envoyée à votre directeur/directrice de recherche et à la technicienne en gestion de dossiers étudiants (TGDE) de votre département.

Notez qu'il y apparaît une mention relative à un suivi annuel et que le certificat comporte une date de fin de validité. En effet, afin de répondre aux exigences éthiques en vigueur au Canada et à l'Université de Montréal, nous devons exercer un suivi annuel auprès des chercheurs et étudiants-chercheurs.

De manière à rendre ce processus le plus simple possible et afin d'en tirer pour tous le plus grand profit, nous avons élaboré un court questionnaire qui vous permettra à la fois de satisfaire aux exigences du suivi et de nous faire part de vos commentaires et de vos besoins en matière d'éthique en cours de recherche. Ce questionnaire de suivi devra être rempli annuellement jusqu'à la fin du projet et pourra nous être retourné par courriel. La validité de l'approbation éthique est conditionnelle à ce suivi. Sur réception du dernier rapport de suivi en fin de projet, votre dossier sera clos.

Il est entendu que cela ne modifie en rien l'obligation pour le chercheur, tel qu'indiqué sur le certificat d'éthique, de signaler au Comité tout incident grave dès qu'il survient ou de lui faire part de tout changement anticipé au protocole de recherche.

Nous vous prions d'agréer, Madame, l'expression de nos sentiments les meilleurs,

Insaf Salem Fourati
Responsable à l'évaluation éthique continue
Comité d'éthique de la recherche en sciences et en santé (CERSES)
Université de Montréal

c.c. Gestion des certificats, BRDV
Louise Potvin, professeure titulaire, École de santé publique - Département de médecine sociale et préventive
Ana Cláudia Figueiró, chercheuse en santé publique,
p.j. Certificat #17-110-CERES-D(1)

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ceres@umontreal.ca
www.ceres.umontreal.ca

Université de Montréal

Nº de certificat
17-110-CERES-D(1)

Comité d'éthique de la recherche en sciences et en santé (CERSES)

CERTIFICAT D'APPROBATION ÉTHIQUE

- 2ième renouvellement -

Le Comité d'éthique de la recherche en sciences et en santé (CERSES), selon les procédures en vigueur et en vertu des documents relatifs au suivi qui lui a été fournis conclu qu'il respecte les règles d'éthique énoncées dans la Politique sur la recherche avec des êtres humains *de l'Université de Montréal*

Projet	
Titre du projet	**Knowledge translation and exchange in public health: A case study in Manguinhos, Brazil**
Étudiante requérante	**Erica da Silva Miranda** (ND), Candidate au Ph. D. en santé publique, École de santé publique - Département de médecine sociale et préventive
Sous la direction de	Louise Potvin, professeure titulaire, École de santé publique - Département de médecine sociale et préventive, Université de Montréal & Ana Cláudia Figueiró, chercheuse en santé publique, Escola National de Saúde Pública (Brésil).

Financement	
Organisme	CAPES (Brésil)
Programme	Bourse
Titre de l'octroi si différent	
Numéro d'octroi	
Chercheur principal	
No de compte	

MODALITÉS D'APPLICATION

Tout changement anticipé au protocole de recherche doit être communiqué au Comité qui en évaluera l'impact au chapitre de l'éthique. Toute interruption prématurée du projet ou tout incident grave doit être immédiatement signalé au Comité.

Selon les règles universitaires en vigueur, un suivi annuel est minimalement exigé pour maintenir la validité de la présente approbation éthique, et ce, jusqu'à la fin du projet. Le questionnaire de suivi est disponible sur la page web du Comité.

[redacted]

Insaf Salem Fourati
Responsable à l'évaluation éthique continue
Comité d'éthique de la recherche en sciences et en santé (CERSES)
Université de Montréal

28 janvier 2020
Date de délivrance du renouvellement ou de la réémission*
31 juillet 2017
Date du certificat initial

1er février 2021
Date du prochain suivi
1er février 2021
Date de fin de validité

*Le présent renouvellement est en continuité avec le précédent certificat

adresse postale
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www.ceres.umontreal.ca

PARECER CONSUBSTANCIADO DO CEP

DADOS DO PROJETO DE PESQUISA

Título da Pesquisa: TRANSLAÇÃO DO CONHECIMENTO NA SAÚDE PÚBLICA: UM ESTUDO DE CASO EM MANGUINHOS, BRASIL

Pesquisador: ERICA DA SILVA MIRANDA

Área Temática:

Versão: 3

CAAE: 73680717.5.0000.5240

Instituição Proponente: Escola Nacional de Saúde Pública Sergio Arouca

Patrocinador Principal: FUND COORD DE APERFEICOAMENTO DE PESSOAL DE NIVEL SUP

DADOS DA NOTIFICAÇÃO

Tipo de Notificação: Envio de Relatório Parcial

Detalhe:

Justificativa: Prezados,

Data do Envio: 29/03/2019

Situação da Notificação: Parecer Consubstanciado Emitido

DADOS DO PARECER

Número do Parecer: 3.263.347

Apresentação da Notificação:

Trata-se de parecer relativo ao primeiro relatório parcial da pesquisa "TRANSLAÇÃO DO CONHECIMENTO NA SAÚDE PÚBLICA: UM ESTUDO DE CASO EM MANGUINHOS, BRASIL", projeto de doutorado em Saúde Pública de Erica da Silva Miranda, orientado por Louise Potvin e co-orientado por Ana Claudia Figueiró, qualificado em 28/09/2016, e que foi aprovada pelo CEP/ENSP pelo parecer consubstanciado de número 2.376.888, emitido em 11 de novembro de 2017.

Esta pesquisa também recebeu os seguintes pareceres consubstanciados emitidos pelo CEP/ENSP: número 2.370.520, em 08/11/2017 e número 2.268.664, em 11/09/2017.

Objetivo da Notificação:

Envio de Relatório Parcial da pesquisa. Segundo informado no cronograma da pesquisa, a data de

encerramento do estudo será em 31/12/2019.

Avaliação dos Riscos e Benefícios:
Sem alterações em relação ao protocolo aprovado pelo CEP/ENSP no Parecer Consubstanciado de número 2.376.888, emitido em 11/11/2017.

Comentários e Considerações sobre a Notificação:
Segundo o relatório apresentado, a pesquisa vem sendo desenvolvida dentro dos padrões éticos apropriados.

Em relação ao número de participantes da pesquisa, inicialmente foi previsto que "Os participantes serão membros dos três projetos pré-selecionados. Nas entrevistas semi-estruturadas face a face, vamos convidar três participantes de cada projeto, bem como as ex-coordenadoras da Rede PDTSPTelas (n=14). No grupo focal, iremos convidar 5-10 membros dos projetos pré-selecionados para participar".
Até o momento, segundo a pesquisadora, foram incluídos 13 participantes e não está havendo dificuldade no recrutamento.

A aplicação do TCLE vem ocorrendo sem dificuldades.

Quanto aos riscos aos participantes, a pesquisadora informou que houve algum dos previstos na submissão ao CEP, mas que a forma de minimizá-lo foi adequada.

Considerações sobre os Termos de apresentação obrigatória:
Além dos documentos já apresentados na Plataforma Brasil, anexou arquivo com o relatório parcial do projeto, em arquivo nomeado Relatorio_Semestral_de_Pesquisa_CEPENSP_ESM2019.doc, postado em 29 de março de 2019.

Recomendações:
Não há.

Conclusões ou Pendências e Lista de Inadequações:

O Relatório Parcial apresentado foi considerado aprovado pelo CEP/ENSP.

Considerações Finais a critério do CEP:

Relatório Parcial aprovado.

Este parecer foi elaborado baseado nos documentos abaixo relacionados:

Tipo Documento	Arquivo	Postagem	Autor	Situação
Envio de Relatório Parcial	Relatorio_Semestral_de_Pesquisa_CEP ENSP_ESM2019.doc	29/03/2019 17:55:25	ERICA DA SILVA MIRANDA	Postado

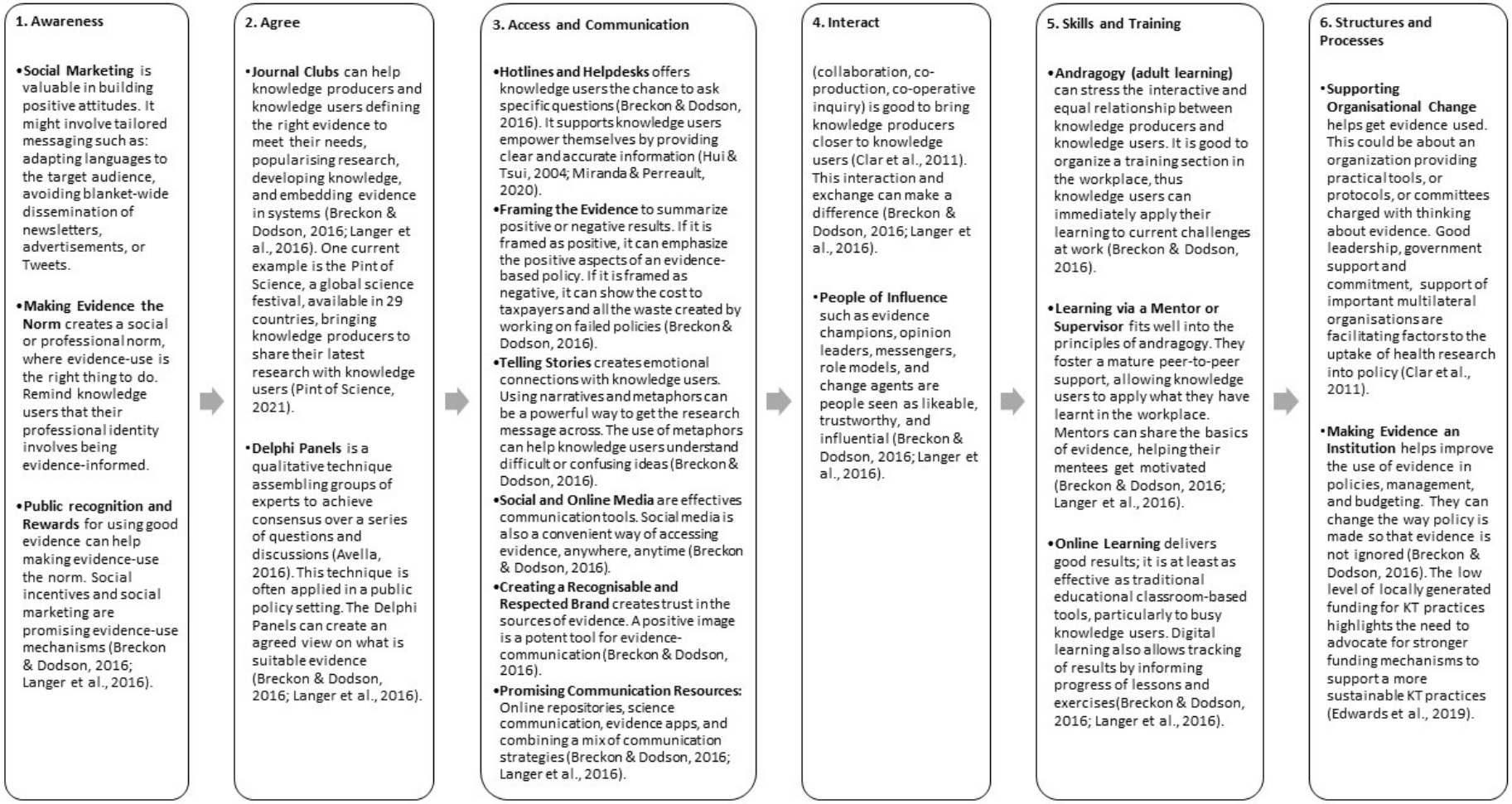
Situação do Parecer:
Aprovado

Necessita Apreciação da CONEP:
Não

RIO DE JANEIRO, 12 de Abril de 2019

Assinado por:
GINA TORRES REGO MONTEIRO
(Coordenador(a))

Appendix G. Knowledge Translation Mechanisms and Strategies



*Adapted from (Breckon & Dodson, 2016; Langer et al., 2016).