



Occasional Paper Series

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Letter from the SICA Chair

The Section on International Comparative Administration (SICA) is proud to present Volume 4, Issue 1 of the *Occasional Paper Series*, our first issue of 2022! What started as an “occasional” endeavor is now becoming a regular feature and we are receiving a lot of interest from around the globe. The current issue is an example of how globally diverse we have become, not just in the regions represented, but also the content of the paper series.

We are excited to bring to you three articles under research ideas, the first article expands on the challenges of fiscal decentralization in Macedonia, and is an in-depth description of the reforms in local government finances that started in Macedonia since 2005. The readers can extrapolate the findings of this research to other local governments that are often bound by political, economic and cultural challenges.

The second article titled “Energy Policy in Spain and Ethiopia: How Two Countries Undergo Different Approaches under the 2015 Paris Agreement” is an analysis of the energy policies of two nations that are part of the 2015 Paris Climate Agreement. The article examines the political and administrative structures in these two countries. While different in their social, economic and political fabric, both Spain and Ethiopia are committed to reaching carbon neutrality and more renewable and sustainable practices by 2050. How they go about it might be different, which is highlighted in the article.

The third article we present is “COVID-19 and digitalization of public administration in Central and Eastern European countries”. The study examines the use and effects of digitization during the pandemic in 11 Central and Eastern European countries. Utilizing data from multiple sources like Eurostat, OECD, and the UN, the article analyzes the various indicators of digitization like access of public

information, electronic statements and filling online forms and taxes by the citizens.

We are also excited to bring to you a Policy Brief that highlights the challenge of traditionally low immunization rates in one of the Eastern states of India, Meghalaya. The authors provide an in-depth account of the policy intervention adopted in 2020 to address the problem of immunization. The success of the Problem Driven Iterative Adaptation (PDIA) approach can serve as a baseline for other states in India to build capacity for providing sustained public services.

Digitization is a predominant theme across most articles and the policy brief presented in this issue. Extending on the theme, the practitioner’s perspective presented here builds on the importance of digitization and highlights the digital transformation strategy of Cluj-Napoca, the second biggest municipality in Romania.

Finally, we present a case study of women self help groups in the southern state of India, Karnataka, that highlights the how rural women were instrumental in responding to the challenges of the COVID-19 pandemic. These women in collaboration with government officers, NGO’s co-produced services vital to combating the pandemic.

I welcome you to read these array of research ideas and case studies that help bridge the theory and practice gap across Africa, Europe and South Asia.

I would also like to extend my sincere thanks to all the authors who have contributed to make this a robust series. Thank you to our excellent reviewers who take the time to offer constructive feedback to our authors so we can bring the best work for your consumption.

I would like to extend my special thanks to Dr. Cristina Stănică, Editor and Chief of the *Occasional Paper Series* for her unwavering dedication and commitment to bringing this research to our membership and beyond.

Wishing our readers, a very Happy New Year (in all the 26 forms celebrated around the world)!

--Meghna Sabharwal, Ph.D., SICA Chair and Professor, The University of Texas at Dallas

Letter from the Editor

I'm delighted to introduce the first issue of the *Occasional Paper Series* for 2022. As communities worldwide are introducing and adapting various policy responses to the devastating effects of the COVID-19 pandemic, seeking pathways for recovery also means making evidence-informed decisions. As a global community of academics and practitioners, our role is to provide solid evidence to inform problem-solving and create platforms for collaboration and sharing of best practices from various contexts.

The *Occasional Paper Series* represents such an effort. Each manuscript explores an essential dimension of comparative public policy and administration in response to the growing threats that the world is currently facing. Topics range from public health leadership and fiscal decentralization to digital transformation and energy policy. While offering a wide variety of paper formats (Policy Briefs, Research Ideas, Practitioner Perspectives, and Viewpoints), we are open to new formats (Case Studies). We also encourage submissions reflecting public administration practices from all levels of governance and world regions and calls for special issues centered either on one region or on a specific policy issue. The forthcoming issues will reflect both: a special issue on Latin America and one on global food insecurity.

I am grateful to continue my service to the Section on International and Comparative Administration by building on Dr. Kim Moloney and Dr. Aroon Manoharan's initiatives to relaunch the *Series* and by collaborating with the section Chair, Dr. Meghna Sabharwal, and the Board and Committee Members to infuse new ideas and further promote this scholarly endeavor. I am sending many thanks to the Section's leadership and all reviewers who gracefully guide and support the *Series*. I hope that both SICA and non-SICA members will review this issue and will consider contributing to future

issues. Our goal is to reach academics, students, and practitioners worldwide and provide a timely publication of the impactful research they are producing.

I look forward to receiving your submissions, and I wish you a healthy and productive year!

-- Cristina M. Stănică, Ph.D., Assistant Teaching Professor, Northeastern University; Editor-in-Chief, *Occasional Papers Series*.

Research Idea

The Good, the Bad, and the Potential for Improvement: Fiscal Decentralization in Macedonian Local Governments

Ljubinka Andonoska, Ph.D.¹

Abstract: Discussions over fiscal decentralization have been revived following several public sector reforms in Central and Eastern European countries in the past few decades. Theoretically, subnational governments are more efficient because they are closer to their constituents, have better information regarding constituents' preferences, and are more accountable. However, the empirical literature recognizes several factors that could hinder the advantages of decentralization. They include the inability of subnational governments to utilize economies of scale and the potential for aggravating regional inequalities. This is especially true when the motivation behind these reforms is purely political, such as in the case of Macedonia. This paper finds that one of the significant problems associated with this administrative reform in Macedonia was implementing equitable distribution of limited fiscal resources across municipalities. Overall, while decentralization reforms increased the levels of municipal service delivery, fiscal decentralization failed to deliver the desired

level of fiscal autonomy and build strong subnational institutional capacity.

Introduction

Decentralization of local governments, while familiar in the United States, has not been fully established in other countries. Over the last few decades, however, political, administrative, and fiscal decentralization have become very popular public sector reforms in many developed, developing, and transitional countries (Martínez, Arzoz, & Apezteguía, 2018; Martínez-Vazquez, Lago-Peñas, and Sacci, 2017; Rees & Hossain, 2010).

Fiscal decentralization refers to how the central government provides resources to local governments and the level of local governments' autonomy in planning and spending resources (Plaček et al., 2020). Fiscal decentralization involves delegating powers and responsibilities from a central (state or federal) government to local governments. Delegation obligates the provision of a minimum level of financing of delegated functions. This typically involves grants or earmarked transfers to the newly acquired public service functions such as education, social protection, etc.

Discussions over fiscal decentralization have been revived in the past few decades following some public sector reforms in Central and Eastern European transition economies. The literature is mostly concerned with the relationship between fiscal decentralization and regional/local disparities (Kyriacou, Muinelo-Gallo, & Roca-Sagalés, 2015; Lago-Peñas, Fernández-Laiceaga, & Vaquero-García, 2018), and with the relationship between fiscal decentralization and economic growth (Morozov, 2018; Thieben, 2003) or local economic development (Gavriliță & Oprea, 2017).

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More recently, scholars have examined the relationship between decentralization and local government efficiency (Afonso & Fernandez, 2006; Martínez, Arzoz, & Apezteguía, 2018). Other studies investigate the broader impact of decentralization on society. Lastly, some studies have investigated the role of local government institutions in the overall effects of the decentralization reforms (Lago-Peñas, Fernández-Laiceaga, & Vaquero-García, 2018).

This article provides a descriptive account of fiscal decentralization reforms in Macedonia commencing in July 2005. The author finds that while local government finances and competencies increased during fiscal decentralization, local governments are not fiscally autonomous. Moreover, regional inequalities have not been mitigated. Although the central government frequently uses language for more equitable development across regions, there is no evidence that meaningful actions have taken place. Instead, politically driven administrative and fiscal decentralization has focused on appeasing lingering ethnic tensions and providing some evidence for a decentralization reform to the EU Commission on the other side (Andonoska & Alda, 2020; Lyon, 2013).

Decentralization

Proponents of decentralization argue that local governments' proximity to their constituents fosters better connection and better involvement in the political process, improving efficiency in resource allocation—the academic arguments favoring decentralization date back to the late 1950s. Tiebout's pure theory of local expenditures (1956) emphasizes that the competitive nature of sub-national governance would be attractive to their current and future constituents. The reasoning is that there are efficiency gains for local governments because

of the juxtaposition to its constituents, which also fosters government accountability. Oates (1972), advancing the decentralization premise, postulated what became known as the decentralization theorem. The assumption was that local government spending would trigger consumption spillovers, which would boost the overall well-being of their residents. These propositions are coupled with the assertion that efficiency cannot be achieved solely by the central government because it is positioned further away from the people. As the argument goes, it is impossible for the central government to make rational decisions on a case-by-case basis, especially if the country is enormous. Finally, there is a political premise favoring decentralization. The primary assumption is that decentralization promotes democracy by diminishing political power and abating vested interests in local policies (Thieben, 2003).

However, the empirical literature on decentralization is divided, with some scholars reporting positive effects contingent on meeting democratic, administrative, and institutional criteria. At least two major conditions need to be met for the efficiency gains to be completed under the fiscal decentralization premise. Firstly, local government officials need to be elected in open elections and thus directly accountable to the people. Generally, voters tend to hold officials in their proximity more accountable, and therefore, locally elected leaders tend to pay attention to voters' requests (Bahl & Wallace, 2005). Secondly, local governments need to have a solid administrative capacity to carry out delegated or new functions (Bahl & Wallace, 2005). Studies find that decentralization effects may differ based on decentralized governments' administrative and institutional capacity. Kyriacou et al. (2015), studying how fiscal decentralization influences

regional disparities in 24 OECD countries, find that fiscal decentralization reduces regional differences only in regions with more vital institutions that support newly decentralized functions. Thieben (2003) confirms that fiscal decentralization can reinforce regional inequalities and slow down economic growth. Similarly, Mause and Razafimahefa (2017), investigating 64 advanced and developing countries, find that decentralization reforms in countries with weak institutions are less likely to lead to equitable regional development. The authors further suggest that the pace of fiscal decentralization reform should be determined by the local government's institutional capacity, such as the capacity to collect taxes and other local revenues.

One of the major arguments made by the opponents is that decentralization can harm technical efficiency mainly because the central government utilizes economies of scale, which are out of reach to local governments (Martinez et al., 2018; Pláček et al., 2020). While empirical evidence on the economies of scale is somewhat mixed, studies find that very small municipalities with a population of less than 5,000 tend to be excessively reliant on either large neighbouring cities or the central government (Pláček et al., 2020). Multiple reports and studies from recently decentralized countries with highly fragmented municipalities, such as in Slovenia, Bulgaria, and Poland, show that small municipalities are often not self-sufficient and highly dependent on the central government, not only for funds but also for essential government services. Studies have also found that political and fiscal decentralization may aggravate the problem with local government corrupt practices, thus reducing the quality of their policy decisions (Rees & Hossain, 2010). Finally, fiscal decentralization may hinder long-term growth by increasing structural imbalances (Thieben,

2003). This is mainly done by introducing tax incentives to strengthen the competition among subnational governments. Competition between local governments, also known as “race to the bottom,” becomes a centrifugal force that increases regional disparities, aggravating already dire circumstances. Instead of strengthening the quality and lowering prices, this competition among neighboring localities leads to higher costs for the constituents.

While the findings regarding the benefits and challenges related to decentralization are somewhat mixed in the literature, many authors agree that decentralization in countries with strong and accountable institutions will reap most of the benefits discussed earlier. Central governments in countries with weak institutions are prone to significant volatility from external shocks and, therefore, “need to retain a sufficient share of expenditure and revenues at the central level to allow conducting macroeconomic stabilization policies when needed” (Saw et al. 2017, p. 4).

Case Study: Decentralization to Local Governments in Macedonia

Background

Macedonia, following its independence in 1991, inherited highly decentralized local governments. However, the abrupt economic and political systems changes and the unfavorable political climate resulted in political and fiscal centralization. Local governments lost all fiscal powers, and their operations were limited to servitude to the central government. The central government transferred money to local governments to perform pre-determined essential functions. When decentralization reforms are mainly driven by political motives, as Bahl & Wallace (2005) point out, fiscal decisions do not

necessarily bring the government closer to the people. Politically, decentralization in Macedonia was motivated by the requirements stipulated in the European Union Charter for EU accession and the 2001 Ohrid Peace Framework Agreement (OPFA). The latter appeased the conflict between the Albanian paramilitary groups and the Macedonian Armed Forces. Additionally, fiscal decentralization in Macedonia was also pressured by the International Monetary Fund to improve poor fiscal management and prevent large budget deficits (Lyon, 2014). Macedonia signed the European Charter of Local Self-Government in June 1996 and ratified it in June 1997. As a country ratifying the Charter, Macedonia committed to applying basic rules that guarantee local authorities' political, administrative, and fiscal independence. Prompted by the European Charter requirements and later, by the OPFA, Macedonian government adopted several new laws and regulations, including the new Law on territorial distribution and the Law on financial local self-government.

The national government planned and implemented decentralization as a top-down reform, carried out in two stages. The first stage, commencing July 2005, assumed transferring a limited number of functions such as maintenance of educational buildings and minor responsibilities in collecting fees and some local taxes. The second stage was gradual and by the end of 2012, all municipalities entered the second stage. In the second stage, municipalities took over responsibilities and personnel in pre-school, primary, and secondary education, cultural activities, and at least some functions related to the social protection of the elderly. The central government transfers 4.5 percent from the Value Added Tax and provides earmarked

transfers and donations to finance these functions and activities.

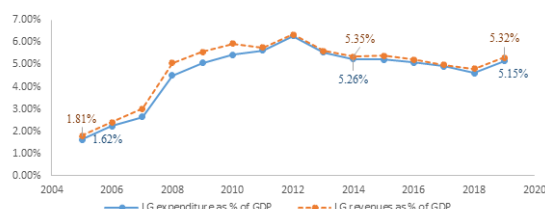
Fiscal Decentralization Indicators and Impediments to Successful Decentralization

Fiscal independence and disparities across municipalities

As of 2021, Macedonia has 80 municipalities and the City of Skopje as a separate municipal entity. Including the City of Skopje, Macedonia has 34 cities, with only four cities having over 50,000 inhabitants. A total of 5 rural municipalities has a population below 5,000 inhabitants. Almost 60 percent of the population lives in urban areas, with around a quarter of the country's population living in Skopje. Before decentralization, the urban municipalities were far more developed than the rural localities, offering services not available to rural residents. As an illustration, secondary and tertiary education and primary health protection services were only public in urban municipalities.

The level of fiscal independence from the central government is a significant indicator of the success of the decentralization reform. When fiscal decentralization commenced, municipal spending was deficient and accounted for a little over 1.5 percent of GDP, representing 5.5 percent of total government spending (see Graph 1 and Graph 2). During 2005-2019, local governments' spending increased from 1.62 percent to 5.15 percent of GDP, while the share in total government spending increased from 5% in 2005 to 16.5 percent in 2019.

Graph 1: Local Government Revenues and Expenditures as a percent of GDP



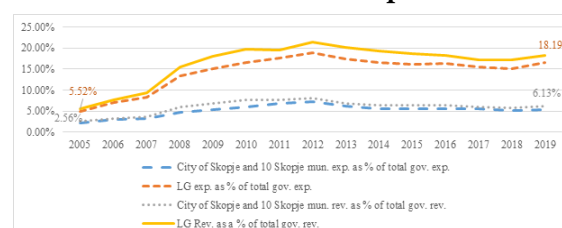
Source: Author's calculation. Data obtained from the Ministry of Finance

Macedonian municipalities, however, did not achieve a high level of fiscal independence. For example, while the share of local government revenues in the total public sector revenues increased threefold, the percentage of self-owned revenues dropped from 11 percent in 2006 (the first year of fiscal decentralization) to 2.6 percent in 2019. The share of central government transfers for decentralized functions, on the other side, increased from about 30 percent in 2006 to 61.6 percent in 2019.

It is important to note that Macedonian municipalities do not share the same level of fiscal independence. The City of Skopje and the ten municipalities, which geographically fall within the country's capital borders, are densely populated and have a strong administrative capacity. Consequently, they were able to take over the decentralized central government functions shortly after the reforms commenced. Furthermore, they receive a large portion of the major government transfers as formula-based earmarked activities favor densely populated areas. For example, at least 50 percent of the VAT is distributed per capita. Earmarked transfers are based on existing activities, much to the disadvantage of rural and smaller municipalities. For example, no rural municipality had a high school or even a larger primary care facility, and the transfer

system effectively eliminates the opportunity to establish these functions. The problem is not exclusive to Macedonian municipalities. As Plaček et al., (2020) emphasize, small municipalities depend more on the central government and thus need more money from equalization policies.

Graph 2: Local Government Revenues and Expenditures as a percent of Central Government Revenues and Expenditures



Source: Author's calculation. Data obtained from the Ministry of Finance, expenditures, and revenues based on actuals.

Strength of municipal fiscal institutions and centralized political controls

The Program for the implementation of decentralization, prepared by the Ministry of Local-Self Government in 2010, emphasized that obsolete fiscal management coupled with the absence of revenue collection capacity are major obstacles to successful fiscal decentralization. The latter may provide one reason for the low level of self-owned revenues. However, Macedonian municipalities have surpluses that average 10 percent of total spending in 2005 and 4 percent in 2018 (see Table 1 in Appendix). Planned fiscal reserves, on average, for the period 2006-19, account for 0.1 percent of the total municipal expenses. Therefore, positive fiscal balances in Macedonian municipalities are less likely a result of sound municipal fiscal planning but rather a consequence of inadequate institutional capacity to carry out some of the delegated functions and to

implement capital projects. Macedonia is not alone in this problem. Most municipalities from former Yugoslavia that qualified for the EU pre-accession funds experienced major problems with delays in project implementation due to the inability of local governments to carry out such large projects.

An additional problem to fiscal autonomy is over-regulation. Both earmarked and VAT transfers are based on rather complicated formulas with amounts annually determined by the central Ministry of Finance, which leaves local governments dependent on a central authority for planning the majority of their funds. In addition, the Ministry of Finance limits municipal employment by formal approval processes. The Ministry of Finance can effectively block permanent and temporary new hires, using budgets as excuses to politically control local government employment.

Finally, fiscal dependence from intergovernmental tasks can be a burden in cases when the central government attaches various conditions. Put differently, grants from the central government should allow greater discretionary powers to the municipalities. In this stage, this is not the case with the Macedonian municipalities because they have minimal discretionary powers. Central government funding to municipalities comes in five main formats: 1) block dotation for financing functions determined by law, 2) earmarked dotation for financing a specified activity, 3) dotation for a delegated activity for financing activities delegated from central government to localities, 4) funds as a percentage of value added tax, and 4) capital grants, for financing municipal capital investments. The first four are either specified by law or delegated to municipalities with inadequate finding to cover the needs of the

newly decentralized municipality. As an illustration, pre-school facilities were traditionally established in urban municipalities. Central government transfers for this function only to urban municipalities without exploring the need to introduce these services in rural municipalities (for more, please see the Law on Financing the Units of Local Self-Government). While there is no unique way to solve this problem, some countries such as Australia and Spain have opted for equalization grants that allow local governments more discretion in allocating funds for needs specific to the municipality (LagoPeñas et al., 2018). Another way to solve the problem is to allow greater autonomy in municipal fiscal decisions.

Conclusions

Fiscal decentralization in Macedonia was intended to meet political and economic goals. Politically, it needed to reduce multi-ethnic tensions by allowing greater access to services and meeting the EU Chapter requirements. Economically, municipalities required to become more efficient service delivery entities. While political goals were satisfied, the reform failed its economic goals. Small and rural municipalities remain underdeveloped at the expense of City of Skopje municipalities. Although the 2007 Law on Regional Development assumes setting funds in the amount of 1 percent of GDP for fostering equitable regional development, such funds are yet to be appropriated. Equally important, the central government needs to reduce political influence and needs to allow more discretion in municipal fiscal policies.

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Appendix

Table 1: Selected local government indicators

Fiscal Year	Self-owned to total LG rev.	Transfers from CG to total LG rev.	Capital donations to total LG rev.	CG debt as % of GDP	LG debt as % of GDP	LG Balance to total LG rev.
2005	0.00%	35.92%	0.18%	35.70%	0.00%	10%
2006	11.48%	29.11%	0.16%	29.80%	0.00%	7%
2007	9.74%	47.37%	0.43%	22.90%	0.00%	12%
2008	5.07%	63.63%	0.10%	20.00%	0.01%	11%
2009	4.44%	70.12%	0.02%	23.10%	0.00%	9%
2010	4.05%	63.41%	0.11%	23.70%	0.00%	9%
2011	3.37%	61.01%	0.13%	27.40%	0.05%	2%
2012	3.26%	58.70%	0.09%	33.30%	0.13%	1%
2013	3.14%	70.94%	0.08%	33.80%	0.18%	1%
2014	3.16%	61.60%	0.12%	37.90%	0.19%	2%
2015	3.04%	59.39%	0.13%	37.90%	0.20%	3%
2016	2.92%	59.86%	0.18%	39.60%	0.16%	2%
2017	2.94%	61.80%	0.34%	39.20%	0.14%	1%
2018	2.98%	60.07%	0.14%	40.50%	0.13%	4%

Research Idea

Energy Policy in Spain and Ethiopia: How Two Countries Undergo Different Approaches under the 2015 Paris Agreement

Carlos Arriaga Serrano²

Abstract: The energy system of any country is crucial not only for the resilience and overall citizens' content, but also it is a changing part of every state as we head towards a world that must change its current model to one more based on sustainable development and renewable energies. This is not the exception of Spain and Ethiopia, both countries signatories of the 2015 Paris Climate Agreement. In this paper, I conduct a policy comparison between both countries about their political system, bureaucracies, and policy of respective approaches towards the 2050 goal of achieving a carbon-neutral economy based on sustainable practices. Overall, I find that even though both countries have a similar political system and an organized bureaucratic system, the status of civil war and political instability in Ethiopia and the context of Spain today within the EU framework make these two countries take a different approach on their climate and environmental policies.

The energy system of any state tends to rely on the private sector as it can exploit, generate, distribute, and store the energy that arrives in our homes. When one talks about the transition to a world's cleaner and greener energy system, the "private sector has a leading role to play in driving the energy transition" (Martin, 2020, p.1). States rely on

these companies to provide electricity to the population. When this is a monopoly, it becomes problematic in political systems such as the US' where the lobbies have significant power in the country's decision-making and legislature (Raadschelders and Vigoda-Gadot, 2015). To avoid these consequences, states nationalize this system to control the energy policy. Some countries, such as Spain and Ethiopia, impose taxes and regulations on companies. That way, they enjoy accessible and affordable energy (Liu et al. 2019; Ram et al., 2017). The overall objective of these actions is to ensure the continuity of the supply. In the long term, these policies provide that for all fuels, there is a reliable supply.

Spain and Ethiopia have had a system based on fossil fuels. The generation of energy came from fossil fuels that they had to import from other countries due to their lack of natural resources. This, however, now must change as both countries became signatories of the 2015 Paris Agreement that aims to get rid of this type of energy generation by 2100. This takes an even quicker approach in the case of Spain, where the goal is to achieve a zero-carbon economy by 2050, as President Ursula von der Leyen of the European Commission stated in her agenda. "The EU aims to be climate-neutral by 2050 – an economy with net-zero greenhouse gas emissions. This objective is at the heart of the European Green Deal and in line with the EU's commitment to global climate action under the Paris Agreement" (EU, 2020). These ambitious goals seem achievable if we look at the theory and how these countries implement their policies. However, as of today, both still rely on a fossil fuel economy, where an emphasis on the energy transition must be done.

In this paper, I look at Spain and Ethiopia's administrative and political systems, focusing on their energy policy to obtain a carbon-free economy. Their constitutions (1978 and 1995) show that Spain and Ethiopia have the same political and administrative system, factors such as conflict and corruption on Ethiopia's side. Spain's EU membership plays a significant difference in how both states'

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environmental and energetic policies are applied, even though both countries are reducing their emissions to reach the mentioned goals.

The Case of Spain

The problem with the Spanish energy policy is that this country tended to have control of the policy. However, the continuing privatization of the energy system has taken more power away from the central administration and more direct power to the private actors (Duarte et al., 2017). One of the prominent examples of this phenomenon was the privatization of Repsol, an oil company co-owned with Argentina that ended up being owned by the private sector taking away public tax benefits that the country was having. "In 1989, the first step was taken toward the company's privatization, a process that lasted eight years" (Repsol, 2021). This was a significant problem for the Spanish tax revenue system. The central government was no longer benefiting from the profits that this company was producing and, even more, since they were not able to make enough energy for the entire population, Spain then started to import natural gas and other energy sources from countries such as Russia and Morocco leaving their energy dependence on the hands of other countries (Duarte et al., 2017).

Even today, Spain is trying to recover precisely that energy sovereignty thanks to the EU and its constant control of the energy system to achieve the goal of making Europe the first zero-carbon continent by 2050. "Challenges facing the EU in the energy field include increasing import dependency...slow progress in energy efficiency, challenges posed by the increasing share of renewables...A variety of measures aiming to achieve an integrated energy market, security of energy supply and a sustainable energy sector are at the core of the EU's energy policy" (European Parliament, 2021). When one looks at the energy consumption and production of Spain, this country is tending to use more renewable energies as the primary sources of energy, such as solar and wind power. This tends to give a

major optimism to Spain as they will control most of the production of their own energy. Furthermore, the major companies such as Iberdrola are currently under direct supervision and regulation of the national government.

The EU realm materialized in the Spanish system with the Treaty of Lisbon of 2007 and the formation of the EU of 2015, having one of the main principles to diversity "Europe's sources of energy, ensuring energy security through solidarity and cooperation between EU countries" (Energy Union, 2015). To adapt these policies to the national level, Spain previously adopted Law 24/2013, of December 26, the leading regulatory standard for electricity grid activities on the Electricity Sector.

The Case of Ethiopia

In the case of Ethiopia, the energy system has always been controlled by foreign actors, especially the states in the Arabian Gulf and OPEC, as they controlled most of the oil and petrol passing by aqueducts across the ocean (USAIDS, 2020). However, this situation has changed, especially after the recent construction of the Grand Ethiopian Renaissance Dam, which now makes approximately 90% of the installed generation capacity to be generated from hydropower while the remaining 8% and 2% is from wind and thermal sources (US Government, 2020). These hydro systems are sometimes affected by droughts, and that is why the Ethiopian Federal Government is "diversifying the generation mix with other sources such as solar, wind and geothermal that will result in a more climate-resilient power system. The Government of Ethiopia, under its latest Growth and Transformation Plan (GTP), envisions transitioning from a developing country to a middle-income country by 2025" (US Government, 2020). There is a strong attempt of nationalization and public control of the public system, something in line with the efforts taken by states such as Spain in the past, and that could also favor efforts towards a more sustainable model.

As Spain is part of the EU, Ethiopia is part of the African Union. However, this institution does not have as one of the homogenous competencies on the issue of the environment or even the energy sector. That is why, currently, most of the energy system tends to rely on the private sector and depends on the National Electrification Program “launched in 2017, outlines a plan to reach universal access by 2025, aiming to supply 35% of the population with off-grid solutions” (IEA, 2021). This policy aims to target its inadequate energy supply and utilization, as there is the need to transform from traditional to modern energy sources to support the development requirement of the country (Ethiopian Ministry of Mines and Energy, 2010).

On this country’s abilities to ensure energy security and the necessary legal and political control to overcome any sort of challenge, one must consider that this policy management relies on the Ministry of Energy under the leadership of the government (as in Spain). However, to ensure this transition and considering the developing administration and bureaucracy of this Eastern African country, the Ethiopian government is working “with the private sector to implement the Corbetti and Tulu Moya geothermal projects with over 1,000 MW of combined generation capacity. Amendments to the geothermal and Public-Private Partnership (PPP) Proclamations by the House of Peoples Representatives is the last critical step to conclude these two 520 MW projects” (World Bank, 2020, p.7). This public-private partnership is in the policy context of Ethiopia, and, as in Spain, it ensures that there is a regulation coming from the central government that attempts to follow the guidelines and goals established by the 2015 Paris Agreement. Overall, similar approaches are meant to meet in 2100 under the overlooking eye of the UN and the non-binding but necessary compromise of the 2015 Paris Agreement.

Their Bureaucratic and Administrative System

Since 1978, Spain has been a democratic, law and welfare state with a market economy. This Southern European state is a country whose political form is a parliamentary monarchy (Spain’s Transitional Government, 1978). Spain is a parliamentary system due to the central role of the legislature or Parliament, which has two cameras, the Congress, and the Senate, like the US system. The national sovereignty corresponds to the Spanish people, that is, “all citizens are holders of public power, and the legislative, executive and judicial powers derive from it” (Spain’s Transitional Government, 1978). Spanish citizens participate in public affairs through representatives elected in free, universal, secret, and plural elections every four years, or on other special occasions such as referendums, as it happened to approve the entry to the EU or even their 1978 Constitution.

In Ethiopia, the political system is different than Spain’s. This Eastern African country started to undergo a process of democratization and economic growth shortly after two main events. The first was the Constitution of 1995, which created the Federal Democratic Republic (Transitional Government of Ethiopia, 1995). This Magna Carta divided the country into nine regional states based on the spread of its ethnic groups, one of the leading causes of conflict that the country faces today. The 1995 Constitution also established that the government of Ethiopia is structured in the form of a federal parliamentary republic, whereby the Prime Minister is the head of government. Moreover, the government exercises executive power while legislative power is vested in Parliament. Apart from their political system, Ethiopia is considered a developmental state and follows three main components: first, its government is autonomous from the private sector; second, it has a characteristic of obsession with development in terms of economy and well-being, and the third component is the

hegemony of developmental discourse (de Waal, 2018).

To an extent and at different levels, Spain and Ethiopia are federal states at which “the national level of government generally shares sovereignty with (usually) the regional level of government. However, the local level in a federal state derives its authority from the regional level and is therefore in a unitary relation.” (Raadschelders and Vigoda-Gadot, 2015, p.102). The federal aspect of this plays an insignificant role in the case of Spain, as this EU country does not follow a federal policy on this matter but a centralized one that follows the parameters stated by the EU Commission and the EU Parliament. On this note, Spain has a peculiar system as it is included in the list written by Raadschelders and Vigoda-Gadot as a federal state in their list where they include “Argentina, Australia, Brazil, Canada, Ethiopia, Germany, India, Iraq, Mexico, Pakistan, the Russian Federation, Spain, Venezuela, and the United States” (p.102). However, their system based on the 1978 Constitution is semi-federal, where competencies such as education and health are disaggregated while foreign affairs and the environment take a centralized approach.

Steps Towards Achieving a Carbon-Neutral Economy

As for when looking at the current implementation and the future of the energy policy in Ethiopia, one of the most advanced countries in this matter in terms of energy policy in Africa, it has a centralized approach where the diversity of sources for generation is quite simple. There are only three primary sources, and all of them are fossil fuels as the need: “for energy imports could be reduced by a determined push to develop the country’s formidable hydro resources and accelerate electrification, as well as by the development of its more limited natural gas reserves” (IEA, 2020). This dependency on importation also affects their economy and social system but, this is all affected by the interest of politicians and the incapacity of a very divided country to manage a centralized approach. That said,

they are still a signatory for the UN Paris Agreement and have reached a compromise by already submitting their NDCs (UNEP, 2021).

In Spain, following the EU guidelines, the framework for energy and even climate policy is based on the 2050 goal of becoming a carbon-neutral continent, the first continent to become carbon neutral. There is a solid fiscal policy pushed with EU funds and the Spanish government to promote a framework based on the 2050 goals of climate neutrality. “As such, it is centered on the massive development of renewable energy, particularly solar and wind, energy efficiency, electrification, and renewable hydrogen. Spain is progressing toward its 2030 targets, notably in the electricity sector” (IEA, 2021). According to their national policies in place, their goal is to ensure this trajectory with both public and private funds and to achieve a system that includes new technologies and network interconnections that would make their system more resilient.

The critical part here is to ensure the transition that now seems complicated, considering that Spain relies on fossil fuels. However, they are trying to phase out coal and nuclear plant power generation. “Notably, the transport, industry, and buildings sectors all have considerably more work ahead to meet the country’s targets for renewables penetration and decarbonization” (IEA, 2021). On this note, COVID-19 and the socialist government have presented a window of opportunity to push for a transition that is getting a special funding for three years thanks to the EU’s COVID-19 recovery fund. This fund creates incentives for EU member states and has helped Spain to build its Recovery and Resilience Plan for the energy transition are efficiency, sustainable mobility, renewable energies, electricity infrastructure, storage and flexibility, and green hydrogen. Spain should capitalize on this opportunity to jumpstart the actions outlined in its National Energy and Climate Plan (NECP).

The strategy document guiding Spain’s energy and climate policies over the coming decade is its NECP for 2021-30. It outlines several policy

actions in various sectors that will support the country's climate targets, including energy efficiency, renewables, and transport (IEA, 2021). The main objectives of this plan include reducing by 23% greenhouse gas emissions from 1990 levels; a 42% share of renewables in energy end-use; a 39.5% improvement in energy efficiency; and a 74% share of renewables in electricity generation (Spain's Ministry of Energy, 2021). The policies mainly focus on transitioning to clean energy and renewable generation. Still, a lack of infrastructure is present, and the only way in which this lack of solar panels and other forms of energy can be installed is through the EU funds as, today, Spain still has a delicate economic situation, so does Ethiopia, since COVID-19 affected their tertiary sector. This relies mainly on tourism from inside and outside the EU and businesses and other small restaurants that could benefit from their self-production of energy (EU, 2020).

Concluding Remarks

In sum, Spain and Ethiopia have democratic political multi-party systems, semi-federal and federal, respectively, which allow their citizens to vote for their governments. Therefore, they allow voters to have power over their energy policies under the realm of an environmental policy umbrella. However, the different contexts of the guidance of the supranational organization of the EU, the situation of violence that Ethiopia is currently undergoing, and the contrasting legal and bureaucratic implementation of control over the private sector signifies relevant differences between both countries. Nevertheless, both states follow the guidance of the UNFCCC and the Paris Agreement and, by 2050, will aim to reach total control over the energy sectors and policies by investing more in renewable energy and by being in line to transition to a green model that would avoid carbon emissions and would ensure energetic sovereignty for the individuals.

One of the first contrast that one can find is that even though in the paper the 1978 Spanish Constitution and the 1995 Ethiopian

Constitution are similar defining the administrative and political levels that can treat policies such as the energetic one, their practical approaches are very different due to their context of different ways of administration from the current executives, as mentioned with the conflict ongoing in Ethiopia between different ethnic groups and the central government in Addis Ababa. When considering the role of the private sector, this has shifted quite often in the Spanish system, being now more public and supranational under the EU agenda but has remained privatized in Ethiopia.

In the European Union and even globally, Spain is on the top of transition to achieve the goal promoted by its system and administration to achieve the desired carbon neutrality favored by a strong administration and a cohesive, centralized energetic policy proper of their semi-federal political system. Ethiopia has an organized administration in theory, but the consequences caused by its current conflict situation and ethnic division and the divisions between the urban and the rural areas makes it difficult for them to establish a cohesive, centralized energy policy even though there are several plans in place to achieve their sustainable goals. Both countries are committed to reaching the goals of carbon neutrality and more renewable and sustainable practices under the framework of international environmental law and the 2015 Paris Agreement. However, they go at different paces as while Spain just focuses on this green transition, Ethiopia has other priorities such as political and social stability and economic growth and prosperity.

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Appendix

Figure 1: Emissions per year
Source: Spain’s Ministry of Energy (2020).

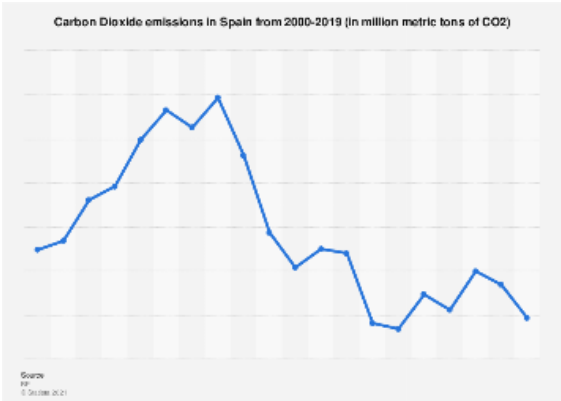


Figure 2: Emissions per year
Source: Ethiopia’s Ministry of Energy (2020)

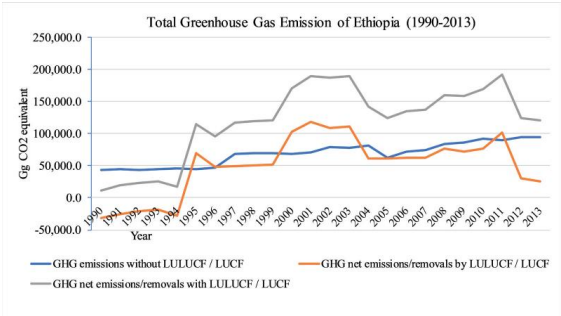


Figure 3: Energy Mix/Breakdown of Spain
Source: Spain’s Ministry of Energy (2020)

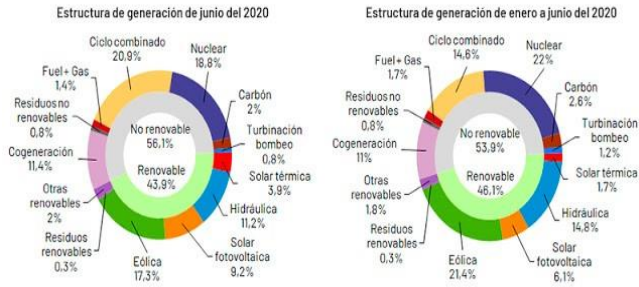
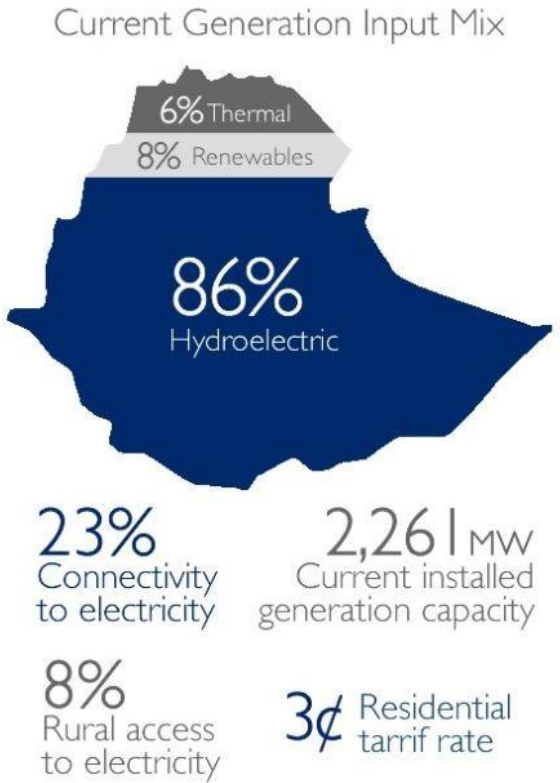


Figure 4: Current Generation Energy Mix/Breakdown of Ethiopia
Source: Ethiopia’s Ministry of Energy (2020)



Research Idea

COVID-19 and digitalization of public administration in Central and Eastern European countries

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Abstract: COVID-19 has generated a global health crisis, putting pressure on public administration, stretching its response capacity. In Central and Eastern Europe (CEE), the pandemic has brought to the surface significant problems for public administration. This article analyses the digitalization of public administration systems in CEE countries and the response to the COVID-19 pandemic. European statistics show that CEE countries have some of the weakest digitalization in the public sector (Horvat et al., 2021). The factors are diverse: low levels of digital education, a large gap between urban and rural areas, and poor broadband internet technology infrastructure (Nemec et al., 2020). The current crisis and social distancing policies show the benefits of technology and the digitalization of public services. The development priorities of all these states should include this essential aspect. For CEE countries, the digitalization of public services has proven extremely useful during the

pandemic, and the extension of this practice to public institutions has already become a priority. The digitalization of public institutions generates an increased level of efficiency and transparency and should be one of the pillars of any government's development. With the help of digitalization, the entire activity of public institutions, on all three levels (internally, intra-institutionally, and externally), between citizens and the rest of the institutions become more efficient and facile (EU Digital Economy and Society Report, 2021).

Starting from these considerations, we aim to analyze and identify the main factors public sector digitalization in CEE countries during COVID-19. The gap between CEE countries and other European Union (EU) member states is vast. However, there was an increase in public services compared to previous years. Nevertheless, the causes of these gaps are also intrinsic and can be improved in a relatively short time: the deficient legislative framework in the field of digitalization, the non-uniform technological infrastructure in public institutions, and the negligence in developing digital skills needed by civil servants.

Context of the Problem

The year 2020 was the year of the COVID-19 pandemic; appearing in China at the beginning of the year, the disease gradually spread worldwide, so that in March 2020, the World Health Organization declared a global pandemic. Given the consequences for the population's health, states have implemented a series of closing activities in all economic, social, and administrative fields. However, Europe was the region hardest hit by the pandemic. At least in the spring of 2020, the enforced restrictions were a total lockdown with a state of emergency, a ban on leaving the

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house, rules of social distance, and the obligation to wear a mask.

The implementation of Information Technology and Communications (ITC) technologies has been a priority of the European Union for over a decade, which has allocated essential funds for this desideratum (Randma-Liiv and Drechsler, 2017). At the EU level, there are several institutions and funding programs to digitalize Member States' economies and societies. COVID-19 showed how important digitalization is and urged the adoption and implementation of digital tools. At the same time, the relationship between the citizen and the public administration was fundamentally and positively changed during the pandemic. The interaction of citizens with the public administration was made much faster, easier, and more secure by digital means: electronic signature, the possibility to send and receive official documents, making online payments, online scheduling of various activities, and online professional training. In the end, there was a rethinking of processes involving the citizen-public administration interaction, with beneficial consequences for both parties, making a huge step forward (Moon, 2020).

The countries of Eastern Europe were, at the time of the pandemic, at various stages of digital development: the Baltic countries were the ITC champions, surpassing even the Western states, while Bulgaria and Romania were at the bottom of the rankings (Špaček et al., 2020).

The present study aims to analyze the phenomenon of digitalization in eleven Eastern European countries (Bulgaria, Czech Republic, Estonia, Croatia, Latvia, Lithuania, Poland, Romania, Slovakia, and Slovenia) compared to the EU average. The analysis will

be performed for the years 2019 (before the pandemic) and 2020 (during the pandemic) to establish the directions of change for the digitalization activity in the public administration. The novelty of the analysis is given by the moment chosen for the study (COVID -19 pandemic), the sample of analyzed countries (the eleven countries from Eastern Europe), and the measures taken by the respective governments to digitalize the public administration. After this introductory part, the study continues with literature review (second part), data and methodology (third part), empirical results (fourth part), and the conclusions and implications (final part).

Literature Review

The digitalization of the public administration supposes the use by the central and local administration of the technologies and applications in the ITC field to increase the efficiency of the activity of the public institutions and the quality of the public services (Amankwah-Amoah et al., 2021). Digitalization can help the public administration improve its activity and results concerning citizens, which has happened in developed and emerging economies. At the same time, through digitalization, the institutional partnership between citizens and administration is encouraged by increasing the degree of mutual provision of information and services. Implicitly, there is an increase in the transparency and efficiency of the administrative process and the participation of citizens in the decision-making process. Citizens and firms want to reduce their time interacting with public institutions, avoid overcrowding, and have direct access to documents, either submitted or requested (Lindgren et al., 2019). Studies on the impact of COVID-19 on public administration are in continuous development,

the fields of analysis being among the most diverse. The effect of digitalization in the pandemic era is mainly studied for firms and citizens and less by public authorities. However, several studies deal with this phenomenon, although the activity is essential and has multiple long-term consequences (Mascio et al, 2020; Posselt, 2021).

The Organization for Economic Co-operation and Development (OECD, 2020) shows that civil servants played an essential role in the COVID-19 pandemic, referring to the medical sector and essential services for the population (energy, water, police). Under these conditions, civil servants suddenly changed the way they work and the ways they interact with citizens. Even after the end of the pandemic, some digitalization-related activities should be found in public administration. The United Nations - Department of Economic and Social Affairs analyzes the actions of governments in the field of digitalization during the pandemic: over 80% of them posted information on COVID-19, restrictions, measures taken, and possibilities for protection (UN, 2020). The authors identify the following measures employment and cooperation with citizens, civic organizations, firms, and social entrepreneurs, as good to overcome the effects of the crisis and improve government action. Especially in the ITC field, where governments lack the human and financial resources to respond quickly and efficiently, the work of other stakeholders (private technology firms, social entrepreneurs, international organizations) can significantly improve the measures taken.

For Eastern Europe, the number of studies on digitalization during COVID-19 is non-existent, with a few notable exceptions. Klich (2021) analyses the measures taken by the Polish government regarding the interaction

between the administration, citizens, and firms; the author points out that the pandemic has led to an improvement in the circulation of documents, but that there would still be beneficial changes for all actors involved. Gabryelczyk (2020) studies the changes in public administration with the pandemic. The author shows that we can no longer talk about a simple digitalization through the multitude of actions and changes implemented, but we have reached even further digital transformation.

Data and Analytic Methods

This article uses a quantitative approach to perform the analysis. Data sources are: Eurostat, OECD, and the UN. These international institutions, through specific departments, have created and introduced a series of indices to measure the digitalization of society for member countries.

The European Union, based on the recommendations of the "Europe 2020 Strategy", introduced an index (from 2015) to measure the degree of digitalization of the 28 member countries and the evolution of their performance. The Digital Economy and Society Index (DESI) is a composite index, calculated based on five factors: a) connectivity (broadband infrastructure and its quality); b) human capital (skills needed for digital society); c) use of Internet (activities made by citizens who use the Internet); d) integration of information technology by business (digitization and use of the Internet by firms); e) digital public services (digitization and use of the Internet by public authorities). Digitalization involves the use of digital technologies to transform business processes. Digitization involves encoding data and documents in a digital format (Lee et al., 2021).

Mathematically, the DESI Index is calculated as the weighted average of the five indicators mentioned above.

We focus on DESI, in general, and the five components specific for public administration: DESI digital public service. This index, in turn, consists of the following components (European Union 2021 Digital Economy and Society Index (DESI) Reports):

- a) e-Government users (percentage of internet users who sent requests to public authorities online).
- b) Pre-filled forms (percentage of information pre-filled in forms made if citizens have to resubmit data).
- c) Online service completion (percentage of activities that can be performed exclusively online about public authorities).
- d) Digital public services for businesses (percentage of activities that the public administration offers to exclusive online for firms).
- e) Open data (percentage of information provided by public authorities).
- f) User centricity (the way of accessing and using the data provided by the public administration).
- g) Key enablers (shows how to identify and authenticate on public administration sites).
- h) Cross-border mobility (percentage of citizens belonging to another EU country to use online services provided by the national public administration).

The DESI index and its subcomponents are used by EU member states for analysis and reporting at the national and community level.

Findings

In this section, we compare digitalization in eleven Eastern European countries (Bulgaria (BG), Czechia (CZ), Estonia (EE), Croatia (HR), Hungary (HU), Latvia (LV), Lithuania (LT), Poland (PL), Romania (RO), Slovenia (SI) and Slovakia (SK), to the European Union (EU) average, and the changes caused by the pandemic.

There are divergent phenomena between Eastern European states and the EU average. Many countries (the Baltic States) perform better than average. Several countries (Croatia, Czechia, Hungary, Slovakia, and Slovenia) perform close to the EU average, and the third group of countries (Bulgaria, Romania, and Poland) are at a significant difference from the EU average. Some factors, such as the extensive development gap between urban and rural areas, low level of digital education of the population, poor broadband infrastructure, generate the causes of these gaps between Eastern European and EU countries in terms of digitalization (Horvat et al., 2021).

The pandemic generated by COVID-19, and especially the limited interactions generated by social distancing, further highlighted the advantages of digitalization of public services. In Eastern European countries, there was an increase in the number of activities offered by public administration during the pandemic compared to previous years. There are also many shortcomings, which can be remedied in a short period: poor development of digital skills among civil servants, gaps and ambiguous legislative framework in the field, non-uniformity of technical infrastructure in public institutions.

If we consider the general DESI indicator, we notice an increase in the period 2019-2020 for all European countries. The highest increases are observed in Eastern European countries

that were unfavorable before the pandemic (Bulgaria +2.0; Croatia +2.2%; Hungary +3.8%; Poland +3.1%, Romania +3.6%, and Slovakia +2%).

Table 1: DESI for Eastern European countries 2019/2020

Country	2019	2020	Difference
BG	36.2	38.2	2.0
CZ	50.0	50.3	0.3
EE	60.0	61.5	1.5
EU	52.5	53.2	0.7
HR	47.4	49.6	2.2
HU	45.4	49.2	3.8
LT	52.0	55.4	3.4
LV	50.0	50.1	0.1
PL	41.6	44.7	3.1
RO	36.5	40.1	3.6
SI	50.9	51.0	0.1
SK	46.3	48.3	2.0

In Eastern European countries, digitization in the state sector has the same similarities as those presented above. Thus, some states (Estonia, Latvia, Lithuania, and Romania) have a higher degree for the e-Government user indicator (over 80%). The other Eastern European countries have lower values for e-government users than the EU average (50-60%), there are significant possibilities for improvement for e-government.

Table 2: e-Government users indicator for Eastern European countries 2019/2020

Country	2019	2020	Difference
BG	60.7	60.8	0.1
CZ	51.5	50.8	-0.7
EE	92.2	93.1	0.9
EU	64.2	67.3	3.1
HR	75.3	65.2	-10.1
HU	53.1	55.1	2.0
LT	80.5	80.9	0.4
LV	81.1	83.0	1.9

PL	48.9	54.2	5.3
RO	82.0	82.2	0.2
SI	56.2	58.5	2.3
SK	53.9	52.1	-1.8

Pre-filled Forms

The pre-filled forms indicator represents the second indicator regarding the digitalization of the public administration. The regular interaction with public institutions involves the use of e-mail / electronically signed documents, the submission of statements to public institutions, the completion of online forms, and access to digitized information of public institutions. Also, there are huge discrepancies between the Eastern states and the European average: the Baltic states (Estonia, Latvia, and Lithuania) are the champions of the region; some states (Czechia, Poland, and Slovenia) are similar to average; and the other states are in a disastrous situation (Bulgaria, Croatia, Hungary, Romania, and Slovakia). However, the pandemic led to significant increases for some countries (Bulgaria +7.7%; Hungary +10.7%; Poland +4.2%). Pre-filled forms can bring substantial benefits to citizens, firms, and public institutions.

Table 3: Pre-filled forms indicator for Eastern European countries 2019/2020

Country	2019	2020	Difference
BG	26.4	34.1	7.7
CZ	51.0	52.5	1.5
EE	89.2	89.6	0.4
EU	57.9	59.3	1.4
HR	30.1	33.1	3.0
HU	31.0	41.7	10.7
LT	88.1	88.2	0.1
LV	82.5	85.6	3.1
PL	53.8	58.0	4.2
RO	10.3	11.3	1.0
SI	60.8	64.0	3.2
SK	35.1	37.6	2.5

Online Service Completion

Online service completion is the third indicator of digitalization. Completing documents online has apparent benefits for citizens in interacting with public institutions: shortening the waiting time; reducing the dependence on the fixed program of the institutions; diversification of means of interaction. The EU average is high (89.7), but the Baltic states have managed to have values of over 90% for the indicator; Bulgaria, Croatia, and Romania register values of 70%. The last year has led to significant increases in the indicator for Bulgaria (+4.6%), Croatia (+9.1%), Hungary (+5.1%), Romania (+3.6%), Slovenia (+5.2%), and Slovakia (+5.7%), the pandemic generating improved results for all countries.

Table 4: Online service completion indicator for Eastern European countries 2019/2020

Country	2019	2020	Difference
BG	74.7	79.3	4.6
CZ	82.3	82.1	-0.2
EE	97.8	97.8	0.0
EU	87.4	89.7	2.3
HR	63.8	72.9	9.1
HU	81.6	86.7	5.1
LT	96.3	96.1	-0.2
LV	93.5	96.3	2.8
PL	83.6	86.7	3.1
RO	66.6	70.2	3.6
SI	86.1	91.3	5.2
SK	79.3	85.0	5.7

Digital public services give the fourth indicator of digitalization of public administration for businesses indicator. The average indicator for the EU is high (87.6), but again the Baltic states are the performers. Instead, Croatia, Poland, Romania, and Slovenia are at the bottom for this indicator, with values below 75%. In the case of all states, the pandemic led to increases in indicators values, with Estonia

managing to provide 100% digital services for firms. Improving this indicator for firms involves serious investments in infrastructure and information applications, creating public-private partnerships, creating appropriate digital platforms, offering benefits to firms that use those applications.

Table 5: Digital public services for businesses for Eastern European countries 2019/2020

country	2019	2020	Difference
BG	92.5	92.7	0.2
CZ	79.8	81.7	1.9
EE	93.7	100	6.3
EU	84.2	87.6	3.4
HR	62.5	65.2	2.7
HU	79.0	85.3	6.3
LT	93.2	97.1	3.9
LV	90.1	91.8	1.7
PL	75.3	78.5	3.2
RO	53.3	55.2	1.9
SI	74.3	76.6	2.3
SK	77.6	84.1	6.5

Implications and Conclusions

Efficiency and predictability are the characteristics of digitalization of public administration, including in the case of Eastern European states. The digitalization of public institutions will reduce the meetings between citizens and firms with civil servants and optimize the interactions between the two categories. The increased efficiency and transparency generated by the digitalization of public administration will lead to the development of an entire community. The three activity plans of the administration (internal, external, and institutional) are streamlined with the help of digitalization in the relationship with the citizens, firms, and the rest of the public institutions. At the same time, the increase of transparency due to digitalization leads to the increase of the

responsibility of the public administration towards the citizens and firms.

The pandemic demonstrates the benefits of digitalization and ITC technologies, and these manifestations should be considered development priorities for European countries. For Eastern European states, the digitalization of public administration has been extremely useful during total or partial lockdowns. The expansion of these interactions between citizens and public institutions has become a priority for these states.

In Eastern European states, the manifestations characteristic of the digitalization of public administration (accessing public information in an online format; electronic statements; filling in online forms on various platforms; online payment of taxes) has begun to enter the day-to-day interactions between the citizens and the government. In the context of the social distancing imposed by COVID-19 and of the profound transformations of the citizen-firms-public administration interaction, the digitalization of public institutions must be preserved and even accelerated.

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Policy Brief

Mobilizing Action to Address Low Child Immunization through Problem Driven Iterative Adaptation (PDIA) Approach: A Case Study of Meghalaya

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Abstract: Historically, immunization, particularly Full Child Immunization Coverage (FIC) has been challenging for Meghalaya, one of the smaller tribal states nestled in North-East India. Between the years 2015-2019, immunization coverage in Meghalaya was not satisfactory⁸. Lower rates translated into an increase in Infant Mortality Rate (IMR) as well as Maternal Mortality Rate (MMR), with MMR. In 2020, Meghalaya sought to turn things around with a dedicated intervention. This action plan was grounded in problem-solving, iterations and feedback loops, an approach unlike any state strategies used before. This approach was broadly called Problem Driven Iterative Adaptation (PDIA). Following this, in only six months, Meghalaya

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⁸ State Health Management Information System (HMIS) data on Child Immunization coverage – 2015-2021

has been able to achieve 90% immunization coverage (Unit, 2020) from 61.4% coverage in 2015-16. While these figures mark the preliminary successes of an ongoing intervention, they also speak of the systemic improvements within state health machinery. This case is a rare example of a public healthcare division's transition from a demotivated, overwhelmed unit to an energized, empowered team. Through extensive personal interviews and close reviews of implementation processes, the policy brief attempts to highlight unique practices, adaptations and accountability measures that have proven successful in building state capability while enabling local agents to become effective problem-solvers. Several findings from this study may also act as a baseline for future studies on building state capability and sustainability of public service delivery mechanisms.

Introduction

The achievement of Full immunization Coverage (FIC) of children has been challenging for Meghalaya. It should be noted that between 2015-2019, immunization coverage in Meghalaya stood at no.24 in India, as seen from the corresponding table.

Table 1: 25 States & UTs in terms of Child Immunization coverage (2015-16) (In descending order)

Sl. No.	States	Immunization coverage in % (2015-16)
1.	Puducherry	91.2
2.	Punjab	89.1
3.	Lakshadweep	89.0
4.	Goa	88.4
5.	West Bengal	84.4
6.	Sikkim	83.0
7.	Kerala	82.1
8.	Chandigarh	79.5
9.	Odisha	78.6
10.	Chattisgarh	76.4
11.	Jammu & Kashmir	75.1

12.	Andaman & Nicobar Islands	73.2
13.	Tamil Nadu	69.7
14.	Himachal Pradesh	69.5
15.	Delhi	68.8
16.	Telangana	67.5
17.	Daman & Diu	66.3
18.	Manipur	65.8
19.	Andhra Pradesh	65.3
20.	Karnataka	62.6
21.	Haryana	62.2
22.	Jharkhand	61.9
23.	Bihar	61.7
24.	Meghalaya	61.4
25.	Uttarakhand	57.6

Source: HMIS based report from immunization Dashboard, ITSU, MoHFW, GoI

In 2019, low immunization rates cost Meghalaya a performance grant of Rs 25 crore, owing to the state's inability to achieve the FIC target set by the Government of India (GOI).

The Problem

With respect to low child immunization coverage in Meghalaya, the major problems identified were:

- 1) A top-down approach where policies were drafted by the State leadership without much space for iterations by those working on the ground. In simple terms, a one-size fits all approach.
- 2) Lack of leadership at the field level causing less accountability in many cases. In short, a disempowered local functionary.
- 3) A non-collaborative approach whereby departments were seen to be working in silos, leaving unrealised, the huge potential of a collaborative, inter departmental system.
- 4) Lack of a granular performance monitoring mechanism, with no impetus to do things differently, or to find out why things were happening the way they were.
- 5) Frequent change in leadership- political and administrative that may act as setbacks for an ongoing project.

The situation demanded immediate attention and in 2020, Meghalaya sought to turn things

around with a dedicated intervention. This action plan was grounded in problem-solving, iterations and feedback loops, an approach unlike any state strategies used before.

Where previously the state viewed such complex problems with resignation, accepting low immunization coverage as a permanent condition which can't be improved; this time things were a little different. Instead of trusting default explanations such as 'people refuse vaccination at the community level' and hurriedly implementing the standard solution of 'driving an awareness campaign', state leadership paused to take a step back - a crucial move needed to gain a deeper understanding of the bigger picture. By the year 2020-21, Meghalaya was able to achieve 90% immunization coverage. This is as per the report published by the Immunization Division, Ministry of Health & Family Welfare (MOHFW), GOI. The percentage jumped from 61.4% coverage in 2015-16. While these figures mark the preliminary successes of an ongoing intervention, they also speak of the systemic improvements within state machinery.

This immunization coverage takes into account all forms of child immunization, barring the COVID-19 vaccination for children, which was not available until January 2022. It may be noted that this study was conducted between 2020-2021.

Methodology

The policy brief uses two sets of data as baseline information:

- 1) The immunization percentage of Meghalaya in the National Family Health Survey-4 (NFHS-4) 2015-16.
- 2) The immunization data quoted in the paper 'Immunization Dashboard'- July 2020 by Immunization Division, Ministry of Health & Family Welfare, Government of Meghalaya. For the end line information, the State Health Management Information System (HMIS) data

from the Department of Health & Family Welfare has been used, along with the immunization data quoted from the report titled 'Immunization Dashboard'- July 2020 by Immunization Division, Ministry of Health & Family Welfare, Government of Meghalaya.

Data from the baseline as well as the end line was analysed and compared to highlight the effects of the interventions taken to improve child immunization coverage.

Further, after verifying the baseline and end line data, stakeholders from state, district, block and community level were extensively interviewed while also observing their activities at the ground level. Notes of review meetings were collected and analysed to see how strategies were conceptualised and implemented at all levels of public service delivery.

The Beginning of Change

A key element responsible for the jumpstart of the immunization intervention was the sense of urgency expressed by the leadership- both political and administrative, whereby an energetic environment was first created by the Covid-19 task force which came into force from February 2020.

The COVID-19 pandemic steered the administrative as well as the political leadership to put in place a robust system of granular performance monitoring, which can be termed as the Problem Driven Iterative Adaptation (PDIA).

By leveraging the COVID-19 pandemic crisis for momentum, the state leadership mobilized actors at the community level, motivating officials and frontline workers at the grassroots to go into "mission mode." Flexible decision-making structures used during Covid-19 were also leveraged to tackle low child immunization rates.

Much like Covid-19 management where transmission is mitigated via awareness methods implemented in the community, any change in immunization coverage takes place

at the household level. For dealing with health emergencies, it is critical to strengthen Frontline Worker (FLW) preparedness to reach out to populations in remote and rural parts of the state.

An important reason behind low immunization rates in Meghalaya was also the lack of support to frontline workers whose actions determine the spread and reach of vaccination in villages. As per NFHS-4 data (National Family Health Survey-2015-2016), before intervention, Meghalaya's full immunization coverage was 61.4% but after intervention, the coverage increased to 90%. The key stakeholders here include the following:

Primary Health Centres (PHCs): The PHCs in India are envisaged to provide an integrated curative and preventive health care to the rural population with emphasis on preventive and promotive aspects of health care. The PHCs are established and maintained by the respective State governments. (Vikaspedia, 2020)

Accredited Social Health Activists (ASHAs): ASHA is a trained female community health activist. Selected from the community itself and accountable to it, the ASHA is trained to work as an interface between the community and the public health system (Vikaspedia, 2020). Apart from the PHC and ASHA, the State Immunization Officers, Social Influencers including community and faith-based leaders played key roles in policy diffusion at the ground level to achieve full child immunization coverage across the State.

Problem-solving On the Go

A large part of the intervention's success can be attributed to the state's leadership- both administrative and political, whose drive to

redesign flawed of ineffective processes led to the creation of a transparent and enabling work environment. This change from the way state structures previously operated can be observed in the team's technique to diagnose, break-down and solve the very complex problem of low immunization coverage. Given below is a series of challenges faced by the state taskforce, and the step-by-step approach to tackle each obstacle that was thrown its way of achieving full child vaccination status.

Hurdle 1: Prioritising immunization as a key issue and identifying next steps

Problem: Although Immunization efforts were being driven by the State health machinery, the issue was not being taken up on a mission mode. This evidently caused low child immunization coverage.

Solution: The state mobilised a dedicated task force along the same lines as Covid-19, termed as the 'State Immunization Team' jointly led by the Secretary, Health & Family Welfare Department and Director, National Health Mission (NHM) of Meghalaya ⁹ (Personal Communication, May 2021). The creation of a separate, committed team served a two-fold purpose - (i) Improving immunization rates was now its top and only priority (ii) This decentralized structure created space for feedback, experimentation, and constant iteration. The challenge before them was to formulate a comprehensive plan that addressed the smaller complexities of improving immunization while delivering impressive results.

Hurdle 2: Breaking down the larger problem into manageable areas of improvement

⁹ Source: Interview with the Health & Family Welfare Department, Government of Meghalaya

Problem: The State was initially using a one-size fits all approach for effecting immunization coverage, neglecting a crucial fact that each of the 11 districts faced its own set of challenges.

Solution: As stated by the Joint Director, Maternal & Child Health & Family Welfare¹⁰ (Personal Communication, May 2021), one of the first steps was to conduct extensive field visits to isolate pockets of low immunization coverage. By doing so, the state identified key focal points of engagement (for example: East Khasi Hills is the largest district in Meghalaya with one of the lowest immunization rates and the need was to probe the reasons for low coverage. This vital information was crucial to the planning of viable strategies tailored to the needs & demands of the local community as opposed to selling a state solution.

Hurdle 3: Lack of training of medical officials & immunization officers

Problem: Frequent trainings play a crucial role in not only capacity building, but also in keeping health practitioners being abreast of the latest practices (here, in terms of immunization). Lack of training was a major gap in inefficient health service delivery for achieving full child immunization coverage.

Solution: The extensive research and field visits soon revealed an important capacity gap - several of the head immunization officials lacked training. Recognising capable and confident health officials as a crucial arm of the intervention, the state organized training and sensitization sessions using the 'Routine Immunization' handbooks. The key point to note here is that the accountability fostered among state players travelled across the

¹⁰ Source: Interview with the Joint Director, Maternal & Child Health & Family Welfare, Government of Meghalaya

system, with training, eventually reaching even field officials.

Hurdle 4: Reinstating faith among communities in public healthcare system

Problem: Lack of health service delivery to the last mile rural population, coupled with unaddressed myths and beliefs pertaining to health services such as vaccination posed great challenges for full immunization of children. As per senior field health officials, some major reasons for vaccine hesitancy in rural areas are:

- Religious beliefs causing people to restrain from the vaccine or any outside/external stimuli.
- The belief by the older community members that since they survived without any form of vaccination, their children would survive too.
- The onset of fever in children after vaccination caused mothers/family members to not opt for any future doses of vaccines.
- Lack of trust in public service as a whole.

Solution: While the intervention team had identified key target areas, mobilised trained officials and created a concrete plan, community resistance was still a large factor at play. By launching the '5 times in 1 year' vaccination awareness campaign, the state collaborated with community headmen and religious leaders, particularly the Church to demystify preconceived notions surrounding immunization. The team realised that reinstating faith in the public healthcare system was essential to improving the state of immunization in Meghalaya.

It may be worthy of mentioning that faith-based leaders played an important role in demystifying the myths about vaccination among people. The Church particularly played

a significant role, given the fact that Meghalaya has a predominant Christian population.

For targeting vaccine hesitancy, the State public health administration promoted efforts to engage faith-based organizations, especially the Churches. Meetings and discussions were held with religious leaders, sensitising them about the importance of full immunization for children, while answering their queries. They were then requested to impart the same knowledge and benefits of immunization on the health of children. This was found to greatly improve the participation of respective congregations in the interventions and thus promote positive health outcomes.

To reach a high level of vaccination coverage worldwide, organizations such as UNICEF now advocate enhancing trust in immunization by, among other things, seeking partnership with religious leaders and groups. Religious leaders are highly esteemed, and their authority can convince members of their congregations to accept or reject vaccination. (Ruijs, Hautvast, Kerrar, Velden, & Hulscher, 2013)

Hurdle 5: Supporting frontline workers (FLWs) comprising ASHAs, Auxiliary nurse midwife (ANMs) & Anganwadi Workers (AWWs)

Problem: While FLWs are the eyes, ears and arms for last mile health service delivery, they faced several challenges which in turn, adversely affected the immunization rates.

- Low proportion of FLWs per households in some villages made it challenging for them to achieve targets.
- Difficulty in reaching out to hard-to-reach rural areas with difficult terrain.

- Delay in payment of salaries/honorariums to FLWs, causing demotivation.

Solution: Frontline Healthcare Workers (FLWs), often known as Community Health Workers play a crucial role in last mile delivery of health services in India, especially in rural areas where access is often limited.

In Indian States, FLWs comprise women belonging to rural communities, and they are within the purview of two ministries namely the Ministry of Health and Family Welfare (MoHFW) and the Ministry of Women and Child Development (MoWCD). The FLWs comprise of the following functionaries at the community level:

- i. **Anganwadi workers (AWWs)** have varying responsibilities, from conducting regular health surveys of families and maintaining files and records to spreading awareness on health, nutrition, family planning, and child growth and development. They are responsible for immunization of children as well as their pre-school education.
- ii. **Accredited Social Health Activists (ASHAs)** go door to door visiting the poorest and most vulnerable, counselling couples and pregnant women, supporting peer educators at the village level, helping with village health plans, providing medical care for minor ailments such as diarrhoea and first aid for minor injuries, and mobilizing people for immunizations.
- iii. **Auxiliary Nurse Midwives (ANMs)**, unlike AWWs and ASHAs, play a supervisory role, and participate in a range of health activities such as

maternal health, child health, and family planning services, nutrition and health education.

Given the FLW's embeddedness in the community, it was crucial for the state to support ASHAs to travel to remote areas in order to facilitate door-to-door visits for the identification of beneficiaries.

The state faced two primary challenges when it came to motivating FLWs - (i) A long drawn out and unexplained delay in ASHA wages culminating into the possibility of a workers strike and (ii) Several ASHA workers and their families believed it unsafe to travel to certain hard-to-reach areas. Mediators in the health system played a key role by seeking feedback and launching an effective communication channel between the state and local actors. Ideas and suggestions from FLWs were gathered and communicated to the top resulting in - (i) Timely delivery of ASHA wages and (ii) Monetary incentives for ASHAs to commute to far distances and hard-to-reach areas.

Hurdle 6: Diversion of attention to COVID-19 management

Problem: The onset of COVID-19 pandemic led to a literal overhaul in the health system, which was, earlier not the centre of focus by the State leadership.

Solution: With the Covid-19 outbreak becoming a national emergency, the leadership used the increased emphasis on health issues to refocus attention on the need for immunization.

On being interviewed for this paper, the then Secretary, Health & Family Welfare Department, Government of Meghalaya stated,

“We are so afraid of COVID and have done so much action because there is no vaccine. But there are many diseases, which are more deadly, for which we have a vaccine. Yet many in the State are not receiving it.”

Discussions on maternal and child health were mixed in as related issues in regular Covid-19 meetings which were initially held daily and then bi-weekly, creating a sense of urgency to mobilise state officials at all levels.

Picture 1: A glimpse of the virtual review meetings with the Deputy Commissioners of all 12 districts, and State administrative officials of Health & Family Welfare, Social Welfare (Women & Child Development) and Community & Rural Development Departments



The ‘State Immunization Team’ was uniquely positioned to harness the energy surrounding Covid-19 and used it to power an equally important intervention. Instead of simply implementing a state-driven solution to improve coverage, their approach allowed for continuous iterations, surfacing of opposing opinions and a strong feedback loop connecting the state, local agents, and the community.

Deviating from the Norm

From this iterative process emerged important instances of positive deviance, i.e., successful, locally designed solutions generated by state agents which were vastly different from

previous strategies used by the health department. State innovations and ideas included:

Village Health & Nutrition Days (VNHDs):

As per the existing norm of the National Health Mission (NHM) under the Ministry of Health and Family Welfare, Government of India (Mission, n.d.), VHND is to be organized once every month (preferably on Wednesdays, and for those villages that have been left out, on any other day of the same month) at the Anganwadi Centres (AWCs) in the village.

Therefore, in order to increase child full immunization coverage in Meghalaya, the State Immunization team used this pre-existing awareness tool for communities and re-activated VNHDs to ensure that immunization took place in every village, and every mother who attended the VHNDs with their child/children was to be vaccinated. So far, 50% villages in Meghalaya conduct frequent VNHDs¹¹.

Longer Tenure of Senior Health Officials:

As per interviews conducted with senior health officials of the State, a noted hindrance in the discharge of duties was either their frequent transfers or deputation from one district to another, or retirement.

By managing rotations to be less frequent, senior health officials were given the opportunity to better understand their districts and its challenges as well as build trusting relationships with their teams.

Building Capability of Local Institutions:

Transferring power to local structures, for instance asking individual Primary Healthcare Centres to identify the next steps of action made local officials feel recognised and

¹¹ Department of Health & Family Welfare, Government of Meghalaya

empowered. This shift meant that local institutions were generating community-customised plans to improve immunization coverage.

Using Technology to Support, Not Drive State Efforts: Information Technology and data-based decision-making is being used in the State as seen with the launch of the MOTHER

App in 2019 (meghealth.gov.in, 2021) (CDFI, 2020) which uses data of expecting mothers in the State and tracks the progress of the pregnancy while ensuring proper antenatal care and also encouraging institutional delivery. The app is also being used to alert high risk cases which can drastically reduce mortality rates. So far, grassroots functionaries such as ASHAs and Auxiliary Nurse Midwives (ANMs) have been trained to collect data and track the said data.

By using technology to support efforts towards full child immunization coverage, the MOTHER App was and is still being used strategically on state-supplied tablets to track and record key data points at the village level. Interestingly, the state also launched an iteration, 'Mother App 2.0' to incorporate missing features based on their learnings from the previous edition. All data collected through the MOTHER App is reflected in a dashboard in the official website of Health & Family Welfare Department, Government of Meghalaya. (Meghalaya Health Portal, n.d.)

Maximizing Reach of Local Institutions: By identifying additional local partners from various other departments who exercised a strong hold at the community level, such as Gram Sevaks (community workers responsible for implementation of government developmental schemes in rural areas) (Meghalaya Police, 2021) and the Rural Development Department, the full

immunization intervention successfully reached audiences who would not ordinarily respond to FLWs.

During an interview with the author, the then Maternal and Child Health (MCH) Officer, Meghalaya stated,

“This also became a better way of engaging with men because usually only women come to health department outreach efforts.”

It is worthy to note that Meghalaya is one of the few existing regions in the world with a matrilineal system. The womenfolk are seen to not only continue the lineage, but also take a more proactive approach in family affairs. But this is not to imply that this is the sole reason for lower participation of men in health outreach efforts. Men's participation, in general is seen to be low in matters relating to couple counselling and even uptake of birth spacing measures as compared to the women folk in State. This could also be because the outreach programmes like VHNDs are conducted at a time when men are out working in the fields or elsewhere.

Collaborating Across Stakeholders

The intervention mobilised key stakeholders from the inter-linked departments of health, nutrition, education and rural development to collectively address the problem of low immunization coverage.

In addition, the state also adopted a public-private partnership approach (on a suggestion from local actors) to gain access to vaccination records from private hospitals, which previously had been a major tracking issue. Emphasising on the uniqueness of this collaborative, inter-departmental approach to address the low child immunization rates in

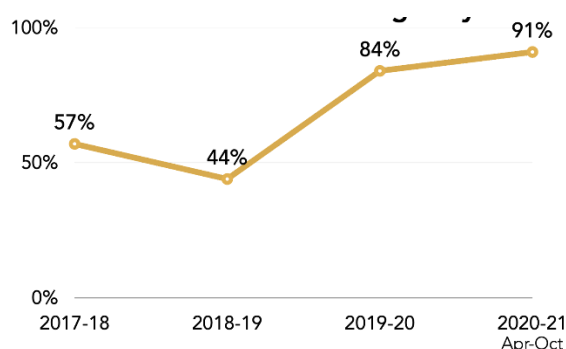
Meghalaya, the then State Immunization Consultant from UNICEF in an interview with the author stated,

“These things are not done by a single person - ASHAs, ANMs, and AWWs, all three must be involved. We addressed this in Ri Bhoi district of the State, brought them together, trained them together. For example, in order to improve health and nutrition, Anemia is identified by a test. It is detected by an ANM, but treatment is done by Anganwadi worker. So, it has to be in coordination. So, an anemic line list is shared among both FLWs”.

Results

The galvanization of all the interventions during the pandemic period between 2019-2021 led to a significant improvement in the percentage of Child Immunization coverage in Meghalaya. The percentage significantly improved to 90 per cent (2020-21) from 57 per cent (2017-18).

Figure 1: Immunization Rate in Meghalaya



Source: HMIS based report from immunization Dashboard, ITSU, MoHFW, GoI

This greatly improved Meghalaya's all India ranking in terms of full child immunization coverage and the State stood 2nd in the

country, after Telangana. It should be noted that between 2020-21, immunization coverage in Meghalaya stood at no.2 in India, as seen from the corresponding table.

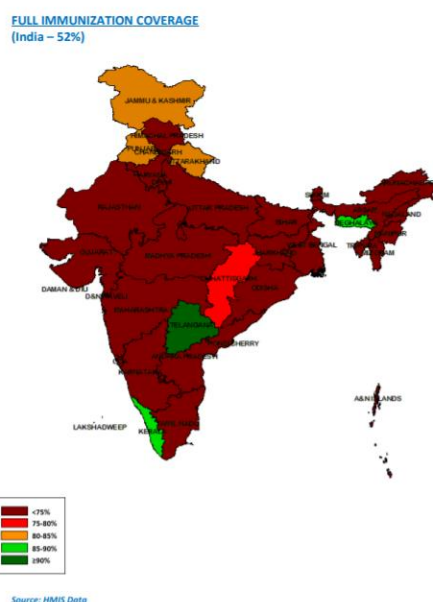
Table 2: Top 25 States & UTs in terms of Child Immunization coverage (2015-16) (In descending order)

Sl. No.	States	Immunization coverage in % (As of May 2020)
1.	Telangana	96
2.	Meghalaya	90
3.	Kerala	86
4.	Punjab	83
5.	Jammu & Kashmir	83
6.	Uttarakhand	82
7.	Chattisgarh	78
8.	Maharashtra	71
9.	Tamil Nadu	69
10.	Goa	69
11.	Karnataka	66
12.	Haryana	66
13.	Madhya Pradesh	65
14.	Tripura	64
15.	Andhra Pradesh	64
16.	Mizoram	60
17.	Dadra & Nagar Haveli	55
18.	Odisha	51
19.	Gujarat	50
20.	Assam	49
21.	Arunachal Pradesh	49
22.	Chandigarh	48
23.	Sikkim	47
24.	Jharkhand	46
25.	Rajasthan	46

Source: HMIS based report from immunization Dashboard, ITSU, MoHFW, GoI

For the first time in the State's history, the State ranked 2nd in the country in terms of child full immunization coverage, and one among the only two states in the country with an immunization percentage of either equal to or greater than 90 per cent. This is also reflected in the immunization map in the corresponding figure where Meghalaya is marked in 'green' colour.

Figure 2: Map showing full immunization coverage in India



Source: HMIS based report from immunization Dashboard, ITSU, MoHFW, GoI

Qualitative Analysis: Stakeholder Interviews

Based on close observation and analysis of the strategies used for improving child immunization coverage in Meghalaya, personal interviews were conducted with several stakeholders involved in strategizing and implementing efforts aimed towards achieving full child immunization. This reveals the following takeaways, as stated by the stakeholders themselves:

A sense of accountability, created during the pandemic situation through an overhaul of the administrative system, travelled across state players, particularly at the local level, creating a sense of urgency in implementation. As Dr. Ivonne, the then District Immunization Officer in-charge in the Garo Hills region of Meghalaya puts it,

“We were worked under “mission” mode... we initiated conversations with all stakeholders at all levels ensuring

that immunization was discussed,”
FGD, Ivonne

When recognised and empowered community leaders are onboarded as part of the system, new ideas are generated which are tailored to bridge cultural resistance and solve hyperlocal issues. The then Director of National Health Mission-Meghalaya, Ramkumar puts it,

“We asked every PHC to make an action plan... This was not a new idea. It’s just activating the basic practices”.

Shifting the focus from mere implementation of a scheme to addressing unique challenges that come in the way as part and parcel of implementation created a space to collectively tackle solvable problems. As the then Maternal & Child Health (MCH) Officer, Dr. Adreena states,

“The connection was very good after the adoption of new immunization strategy. It was different from previous experiences. It’s encouraging to work with a team that is very supportive. There was this challenge and sense of need to work together. And with this, we treasured this bond we had, and that they were very fast to provide support”.

Mediators can play a crucial role in creating a robust feedback channel between the actors at various levels- State, District, Block and communities, leading to collaboration across stakeholders. In this context, Dr. Adreena pointed out,

“Sometimes we get orders from top and have to pass these down to the field. Meanwhile doctors at field level also give feedbacks about strategies that may or may not prove effective. As State Immunization Officer, I interact with both parties and take feedbacks from the

field to state leadership and even vice-versa”.

Default explanations are often used to justify inaction. Ground-truthing of time-honoured theories about immunization is needed to gain a deeper understanding of the problem. In this case, people's belief that immunization of children goes against their religion and is against the religious scriptures/verses caused vaccine hesitancy among several groups of people. This issue remained unaddressed for quite a long time, while being accepted as it is. But on digging deeper, it was realised that this hurdle could be resolved by clarifying doubts and/or by partnering with faith-based leaders who supported immunization efforts. In this regard, the then Director of NHM-Meghalaya, Ram Kumar puts it,

“The Block Development Officers (BDOs) reported that people were refusing vaccinations for religious reasons based on their conversations with FLWs, and hence extrapolated that nothing further could be done. Later, it was found that mid-level officials were not efficiently monitoring activities at the local level, unknowingly allowing certain assumptions to remain as they were.”

The project delivery system benefits immensely when the leadership speaks the same language. It is helpful when state leadership engages closely with field experts to learn about the technical aspects of the process. As Dr. Nilanjan Roy, the then Chief Surveillance Medical Officer, WHO states,

“At one point, the State had more than 25 directors of health services of maternal and child health being rotated frequently in a very short span of time. This made the work extremely difficult as new people coming in take time to acquaint themselves with the

programme implementation process and the background of the target area”.

Adaptation measures not only create sustainable solutions but can also develop the capability of local agents to cope up with complex challenges. Lessons learned while problem-solving for one issue can be applied to another in the future. As Dr. Sangma from the Garo Hills region of the State puts it,

“The main reason why mothers were not showing up for VHNDs was fear of needles, and/or husbands not wanting the child to get vaccinated because of fever after vaccination. So, the strategy was to bring fathers/more men into the vaccination program”.

In short, the State administration leveraged an existing crisis (here, the COVID-19 pandemic) for momentum, which doubled as a motivating opportunity to energise public healthcare systems. The system of bi-weekly and later, weekly review meetings held mostly to discuss and strategize COVID-19 mitigation process in Meghalaya, also incorporated maternal and child health as well as immunization in its purview.

Going Forward- Key Insights

The key element which made the immunization intervention stand apart from other state programs, as observed, was the strong and positive leadership, at all levels-political, administrative including at the State, Districts, Blocks and more so, at the local or community level. The enabling environment created just enough pressure to motivate state machinery without acting as a deterrent demanding data-driven results. Given below are crucial insights that empowered the state to make significant progress in improving Full Child Immunization Coverage:

- Sustained and consistent monitoring in the form of weekly and bi-weekly district reviews went a long way in improving state accountability. This can be seen by analysing the notes¹² of each and every review meeting and how each meeting led to a series of action points for the administration at all levels. These action points are then reviewed in the following weekly meetings.
- Generating leadership at the local level by identifying 'champions' created a network of collaborative problem-solvers.
- Frontline worker challenges (overcoming commuting barriers + payment backlogs) were taken seriously by the state. Mediators from the State Health Department played key roles in improving responsiveness between the administrative leadership (State, District and Block level) and FLWs by transmitting information in both directions.
- Field exposure revealed that the training of health workers, especially FLWs is not a one-time investment. The state had to think carefully about how to create sustainable systems to support its workers.
- Challenging preconceived notions such as community refusals to vaccination on cultural or religious grounds, allowed the state to address and resolve the real problem – such as the fear of fever post vaccination.
- Key leadership including agents from non-medical background were well-versed in the specific health challenges and processes of the delivery chain.
- The immunization team adjusted and adapted along the way. Each new hurdle was met with an iteration to solve the larger problem at hand.

¹² As of 2021, more than 60 review meetings have been held, convened by the State Health Department, as per State records

Conclusion

This study was conducted during the height of the COVID-19 pandemic in 2020-21 whereby the State was en-route to implementing the new child immunization strategy, the results of which are visible within a very short period of time, six months, to be precise, from the time of adoption of new immunization strategy. While Meghalaya has been able to achieve 90 per cent child immunization coverage (2020-2021) from 61.4 per cent (in 2015-16) using the Problem Driven Iterative Adaptation (PDIA) Approach, a few questions that still looms large about the sustainability of a robust initiative, such as the one highlighted in this paper, requires a more time-bound periodical analysis.

The paper also revealed important findings during the course of its short research period. Important factors that directly or indirectly affect the service delivery mechanism from the supply side as well as the demand side came out to the fore, highlighting their collective and individual role in the entire process. For instance, the frequent intervention of senior authorities (State level) in granular monitoring of services proved to be one of the driving forces but how feasible is this in the long run? The answer to this may be obtained by a long-term analysis of several similar projects with similar strategies.

The paper findings may also serve as a baseline for consequent studies about long term effectiveness of certain strategies such as frequent review meetings backed by a strong leadership, effectiveness of policies implemented through a collaborative, inter-departmental approach as opposed to working in silos and most importantly, the end result that determines the success of an intervention- is it just about an increase in numbers? Or is it also about a systematic shift in work culture on the supply side interventions?

To conclude, the PDIA approach adopted by the State of Meghalaya for improving child immunization coverage may be summarized as seen in the corresponding figure.

Figure 3: PDIA model for addressing low child immunization rates in Meghalaya

Themes	Business As Usual	What Meghalaya Changed
FOCUSING ON PROBLEM SOLVING	Problem treated as condition, little space to problem-solve & learn	Problem is infocus; efforts to iterate and adapt solutions
LOCAL AT CENTRE	One way communication from top-down; local levels disempowered	Stronger communication with local levels, local agency increased
STAKEHOLDER COLLABORATION	Stakeholders within and outside government operate in silos	Collaboration across government and with private sector is enabling effective response
INCREASING ACCOUNTABILITY	Avoidance of responsibility; no pressure to change	Regular review meetings and sustained focus have mobilised action
CHALLENGING DEFAULTS	Narrow understanding of problem; assumptions limit action	Asking questions is unveiling new opportunities for change
GAINING POLITICAL TRUST	Political setbacks could have halted or stopped initiative	Changes in context were used strategically to refocus attention to problem at hand

Source: Meghalaya State Capability Enhancement Project (SCEP)

While the PDIA model for improving child immunization has evidently proven to be quite effective in the context of Meghalaya, some real time challenges require consistent addressal for any strategy, especially health service delivery to continue for a longer period of time.

Taking precedence from this model and as a way forward to ensure sustainability of unique initiatives, like the one discussed in this paper, Meghalaya has initiated the State Capability Enhancement Project (SCEP) in December 2020. The broad aim of SCEP is to better deliver different governmental programs by activating state administration and mobilizing community leadership to tackle the most critical development challenges in the state.

“An important aspect of SCEP’s focus is ensuring consistency and sustainability of service delivery, irrespective of leadership. It is an attempt to imbibe a new culture of robust and accountable public service delivery”, as stated by the then Principal Secretary to the Government of Meghalaya, who is also the brainchild behind the SCEP model.

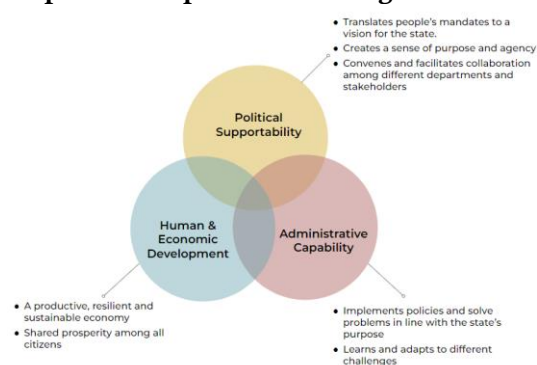
Figure 4: Six pillars of Meghalaya’s SCEP model, applied in increasing child immunization coverage



Source: Meghalaya State Capability Enhancement Project (SCEP)

The aim is to bring three elements together- Political Leadership, Administrative Capability and Human & Economic Development.

Figure 5: Meghalaya’s SCEP model aims to create a sustainable model for addressing complex developmental challenges



Source: Meghalaya State Capability Enhancement Project (SCEP)

The concept and experiences with SCEP have also found place in the prestigious ‘The Public Productivity and Performance Handbook’ by Routledge (Routledge, 2021) (Section VI, No. 29- Applying Competencies: State Capability Enhancement Project). For realizing the goals of SCEP, the State materialized the Meghalaya State Capability Forum (MSCF) (SCEP, 2021) (MSCF, 2021) in October 2021. The mission of the Meghalaya State Capability Forum is three-fold:

1) To enable learning and exchange between leaders of Meghalaya, India, and the world on

key issues of the public interest, especially regarding the role of the State.

2) To share Meghalaya's experience and learnings from a range of state capability initiatives.

3) To develop new models, approaches and initiatives for enhancing state capability and achieving Meghalaya's vision.

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Practitioner Perspectives

Cluj-Napoca Digital Transformation Strategy

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Nicolae Urs¹⁴

Cluj-Napoca is the second biggest municipality in Romania (after Bucharest, the capital) and one of the European cities with the fastest economic development. This rise, increasingly evident in the last ten years, was underpinned by the two strategy development plans (2007-2013 and 2014-2020) coordinated by the College of Political, Administrative, and Communication Sciences.

The IT sector in the city is one of the main drivers of this economic growth. One of the two IT clusters in Cluj-Napoca estimates that 1 in 11 employees works in a company that can be defined as part of the "knowledge-based economy" (KBE). Thus, it is no surprise that digitalization is one of the chief concerns of the local government and the businesses in Cluj. The need for a comprehensive plan for the community's digital transformation became more evident in the last five years.

The College of Political, Administrative, and Communication Sciences acquired extensive expertise and experience in strategic development at local, regional, and European levels. The City Hall and IT companies in Cluj, reunited in the Consultative Council for Entrepreneurship and Innovation in IT (a

semi-formal outfit that brings together the local government, companies, and academia), asked the college to coordinate the development of the Digital Transformation Strategy for the city in 2019.

The process of developing this strategy was an iterative one. After a period of data analysis and the formulation of the first draft (the autumn of 2019), all the subsequent versions of the document were created with the community's help. The response from the stakeholders was enthusiastic. In the end, dozens of companies, NGOs, public institutions, and hundreds of people were involved in articulating and transforming the document into the current version.

The result is a living strategy that will adapt to the changing environment and integrate new developments, be they technological or societal. A case in point is how the COVID-19 pandemic impacted the strategy in more ways than one. It derailed the plan of launching it in 2020. It also showed the importance of digitalizing the interactions between service providers (both public and private) and clients and emphasized the need for more and better data collection.

The following sections present a condensed executive summary of the strategy.

Goals

This strategy hinges on the central idea of integration. Therefore, the city must embed digital transformation in its long-term development. This challenge needs to be approached proactively, in a participatory, innovative, and flexible way. This is necessary for a field where the pace of innovation and change is swift. Hence, only the programmatic and substantial cooperation within the community can bring positive results. The current medical crisis has also proven that public institutions that manage to integrate technology into their strategic and operational processes are the ones that have better prospects of adapting to shock, transforming, and being resilient. Developing a coherent

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digital transformation strategy would offer Cluj a significant competitive advantage at national and international levels. Such a transformation will also naturally allow it to connect with the city's critical strategic factors.

This strategic document is a living one and will adapt to and grow with the changes brought about by the new technologies in society. Thus, these changes are inevitable. It is up to the community in Cluj to choose how these changes will be integrated into the large-scale plan on the continuous improvement of the quality of life in Cluj-Napoca. In addition, the strategy does not belong to one institution or another but to the whole community. The involvement of all relevant stakeholders, be they private companies, universities, not-for-profit institutions, local public institutions, or citizens, is expected.

Moreover, this strategy aims to support the development of the elements that make Cluj-Napoca a city where citizens enjoy living. It also makes it an attractive community for visitors from both within the country and abroad and a desirable destination for businesses and start-ups. The key strategic factors that are at the base of the development of the community – universities, participation, and innovation – are and will continuously be influenced by digital transformation. Last but not least, this strategy needs to contribute to the establishment of a sustainable and resilient community that can continue to offer the citizens of Cluj-Napoca an ever-growing quality of life and one that can rapidly adapt to future events, even unforeseen ones. The following strategic principles are core to the city's digital transformation.

Strategic Principles

- The digital transformation strategy has as prime objectives the growth of the quality of life for citizens and the prosperity of the Cluj community.
- The digital transformation strategy is an integral part of the broader vision of the city (based on the quality of life,

innovation, universities, and participation). From the start, this project is thought of as a part of the strategic development plan of the city and is interconnected with other sectorial documents.

- This strategy is an instrument, an enabler, and not a purpose in itself.
- The strategy is capable of integrating and synchronizing the energy and projects in this area of the community on an intelligent community platform.
- The strategy must include an institutional vehicle (a permanent organizational structure) that can permanently promote it and can ensure its implementation.
- The strategy is based on a continuous consultation and communication process with the community.
- The strategy will be built on cybernetic security and the protection of citizen's data so that digitalization effort is not affected by security incidents and violations of citizens' rights relating to the protection of personal data.
- The strategy will undergo a permanent actualization through a functional and coherent mechanism.
- The strategy will lead to developing institutional capacities and capabilities, including resilience in adaptive and transformative capacity, based on innovation and digital technologies.
- The digital transformation strategy needs to be realistic, flexible, and permanently open to necessary changes given the rapid evolution of the strategic environment.
- The strategy must facilitate an integrated approach to the digital transformation in the Cluj-Napoca community to support the prime strategic objectives and direction, in a synergistic relationship with the other strategic and programmatic

documents. The strategic digital transformation effort needs to be permanently connected to the vital strategic factors of the city:

-Digital innovation in key areas such as ICC (Innovative, Creative, Competitive), knowledge-based economy (KBE), Local Public Administration, Public Health, Entrepreneurship, Environment, Culture and Creative Industries, Mobility.

-Universities as research and development (R&D) and technological transfer hubs, providers of the specialized human resources, and educational services dedicated to bettering digital competencies, analysis, synthesis and strategy formulation capabilities, and entrepreneurship stimulants of groups within the community. Universities are a central element in public health and community resilience, with significant contributions to projects in the mobility and environment protection domains and others.

-Participation – The digital transformation strategy needs to facilitate integrated and organic participation of actors (citizens, the local public administration, the business environment, universities, civil society) when it comes to both the improvement of the quality of public and private services, as well as the furtherance of transparency enhancement and democratization of local governance. Another objective is forming an innovative ecosystem based around the local administration by involving the most relevant players and building an intelligent community platform. Digital Innovation Hubs, whose activity domain and projects pertain to Cluj-Napoca, will be essential for this process. Considering the above, the city's strategic priorities include the following:

Strategic Priorities

-Being citizen-centric – the needs of the citizens, not the needs of the institution, are taken as the starting point.

-The creation of a favorable economic environment for private companies and support for start-up development.

-Stimulating the medium and long-term development of a regulation framework (this can include Local Council Charters, national laws, Government Decrees, Ministry Decrees, etc.) that can create the legal context necessary for digital development (Cluj Digital Law Package).

-Involving the relevant IT&C actors (citizens, companies, local and central authorities, educational institutions, clusters, digital innovation centers, nonprofits).

-Recognizing the essential role of education in general, mainly digital education, especially for public servants, but also for citizens.

-Prioritizing innovation in all fields and forms (technological, social, process-related, etc.), especially innovation that leads to or facilitates the creation of digital services.

-Interoperability, service integration, and open data sets.

-Emphasizing cybersecurity.

-Improving and optimizing communication, information exchange, and inter-departmental, inter-institutional, citizen-institution co-participation.

-Connecting makes a difference – being ready to connect by default (from the onset, projects and applications need to be prepared for interconnectivity; technological investments need to offer increased measurement and analysis capabilities and offer improved support for decision-making; minimizing supplier lock-in; technology or infrastructure should be made a priority; access to data generated and stored by applications needs to be unrestricted; an explicit technological transfer process from supplier to beneficiary needs to be included; open code source should be used as much as possible).

-Flexibility and adaptability of the strategy. Technology is a means subordinated to the users' needs and local policies.

Hence, the strategy has a central concept, vision, factors and objectives, and implementation and operational projects. These are briefly presented below.

Central Concept

Technology is an enabler for meeting the needs and desires of citizens and the community – i.e., people want a better quality of life, which can be achieved with the help of technology. A smart community can learn and evolve rapidly, and digital transformation involves significant changes in the use of technology and organizational structures, organizational culture, and community leadership.

Vision

Cluj-Napoca will organically integrate technology into the life of the community to sustainably increase the quality of life of the people of Cluj-Napoca and the prosperity of the local, metropolitan, and regional community. The digital transformation will use all available resources and involve enduring partnerships, citizens, the public sector, academia, private companies, clusters, non-profit organizations, and innovation centers.

For the strategy to be successful, the whole process must be understood as an intelligent community platform (ICP) that allows the continuous, connected, and active interaction and participation of different stakeholders in the digital transformation process within the defined strategic framework (vision, objectives, strategic directions).

The success of the digital transformation strategy will not rely on the rigid pursuit of specific projects but on the capacity of the intelligent community platform to build a dynamic that allows the creation, selection, implementation, and strategic integration of digitalization initiatives from inside or outside the Cluj-Napoca community.

Key Strategic Factors

1. Smart living – Integrating digital technologies in the community's life.
2. Digital skills and inclusion.
3. Interconnected digitalization.

Strategic Objectives

Transversal Strategic Objective: Sustainability and Resilience

1. Improving public services.
2. Developing the digital infrastructure.
3. Evidence-based decision-making.
4. Participation and transparency.
5. Citizen data protection and cybersecurity.

The objectives below are not independent. They are linked to each other, and their areas of action intertwine. They can be understood not as pillars but as knots in a net, connected. If needed, these can be updated within the implementation process of this strategy. Additionally, the implementation of these objectives will be accompanied by a series of key performance indicators (KPIs), whose operationalization will be the new Chief Innovation Officer (CIO).

Implementation and Operational Projects

Understanding the implementation and operationalization of the strategy needs to be done in a context-specific to digital transformation, which places the strategy in a long-term development frame, and concentrated on the construction of a smart community platform capable of permanently uniting the existing community energies.

For the strategy to be successful, in terms of implementing operational projects, there is a need for an institutional vehicle coordinated by a Chief Innovation Officer at the City Hall level, which disposes of personal human resources and can unite local stakeholders and representatives on his board. This board will have a tactic and operational role and

permanently coordinate with the Entrepreneurship and Innovation in IT Consultancy Council.

Once the strategic framework is defined and can offer objectives and a primary strategic direction, operationalization becomes a critical element of the successful implementation of the strategy. In a field as dynamic as digital transformation, it is useless to establish long-term lists of operational projects rigidly. A more flexible and practical approach is the development, within this strategic framework, of continuous construction processes of operational projects that connect with the strategic objectives and priorities of the city. Therefore, projects will be structured in three distinct areas:

1. Core projects (capable of widely affecting the community in the medium and long term, in digital identity, urban data platform, mapping of internal processes, the degree of digitization, or digital innovation hubs).
2. Operational projects (flexible portfolios) that appear periodically are limited to strategic objectives and are permanently connected with technological and environmental developments.
3. Pilot projects (proof-of-concept) in which ideas from the community can be quickly tested, scaled if successful, or abandoned if not appropriate at the time. Supporting the City Hall for the construction of the initial infrastructure is essential.

The success or failure of this strategy will ultimately be determined by:

- How the community will get involved in suggesting, implementing, or supporting projects and how well this project can be integrated into the framework this strategy proposes.
- The quality of the new institutional vehicle created inside the city hall to coordinate the implementation of this strategy.

- The speed at which this document can be adapted to changing conditions and the flexibility through which new ideas can be integrated into the overall strategy.

The process of formulating the strategy has brought together stakeholders from the community. The iterative process was based on their input and was, at the same time, a first step towards building the necessary network of institutions, organizations, and people that will be essential in defining and implementing the necessary projects. The response from the community to the strategic document was overwhelmingly positive. Cluj-Napoca is one of the few Romanian cities that can count on such an engaged community, without which such a process would have been impossible. Inside the City Hall, an institutional vehicle for coordinating the implementation is being created, and close cooperation with all interested stakeholders will be essential for the strategy's success.

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Case Study

Unlikely Leadership: Lessons from Rural Women's Self- Help Groups During COVID-19 Management in Karnataka

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Abstract: COVID-19, the global health crisis, deeply impacted local communities and jeopardized the socio-economic framework. While governments and international agencies struggled to manage the pandemic, grassroots organizations and rural women from marginalized sections stepped up to steer their communities through the crisis. Wave after wave of leadership emerged from unexpected places across talukas and villages, from the most vulnerable sections of women self-help groups under Karnataka State Rural Livelihood Promotion Society (KSRLPS). These leaders took stock of the situation and came up with meaningful interventions for their communities. They created general awareness about COVID-19 and its management, tailored masks, manufactured sanitizers and surgical gowns, opened community kitchens, and distributed ration and essential commodities to the needy. While

the world battled with the pandemic and the ensuing economic crisis, thousands of self-help group women in Karnataka earned between Rs. 300 and 500 every day and kept the fires burning in their kitchens. The global COVID-19 pandemic has caused enormous challenges that continue to impact the lives of millions around the world. However, poor and vulnerable women from the hinterlands of Karnataka show us a bright example of leadership in these difficult times. These inspirational stories highlight the impact of women from self-help groups as they networked seamlessly with various wings of the government and helped their communities overcome challenges posed by the pandemic.

Introduction

The spread of COVID-19 has shown that any public health crisis requires community cohesion, strong communication and resilient ground-up leadership to mount an effective response. In years to come, the current crisis will be remembered for showcasing how women in poor, rural communities, rather than requiring government handouts, were critical stakeholders in the comprehensive COVID-19 response.

This case study highlights examples of how women across Karnataka, in collaboration with government officers and NGO partners, provided exemplary leadership in responding to the challenges of the COVID-19 pandemic. These stories of leadership from unexpected places and unexpected people give us hope that there is the capacity to handle any crisis when people and government work towards a common goal in the human spirit. Be it the case of women's self-help groups making masks and surgical gowns or working in micro-enterprises to support their families during the lockdown, women in Karnataka have

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demonstrated committed leadership of the ordinary people.

Unpacking 'Unlikely Leadership'

To tackle rural poverty and empower communities in the 1980s, the NGO MYRADA, encouraged affinity groups of women to improve livelihoods through collective action. They focused on unleashing the potential of rural women to transform their communities. These early self-help groups (SHGs) were small, deeply rooted in their communities, and conceptualized to make rural credit readily available. In 2011, the National Rural Livelihood Mission (NRLM) was launched to transform informal SHGs through more significant credit linkages, regular training sessions, and participation within a federated structure. The experience of SHGs has been mixed, with nearly all of them accessing credit, but some states are more successful than others in maintaining social cohesion and effectively utilizing funds to enhance productive capacity.

In Karnataka, NRLM is implemented through the Karnataka State Rural Livelihood Promotion Society (KSRLPS or Sanjeevini). Karnataka had a population of 6.1 crores in 2011, of which 61.43% was rural (Census 2011). The population was estimated at 6.75 crores in 2020, according to UIDAI¹⁷, with the rural proportion decreasing steadily across successive censuses. As major urban centers are concentrated in the south and coastal regions of the state, socio-economic development skews poorly towards the north and interior. Karnataka has seen relatively successful implementation of NRLM as SHGs generally adhere to the *panch-sutras*, or best

practices of group management, and training programs are frequent, well-attended, and focus on building management skills. There is also a strong synergy between SHGs, local administrative officials, and elected leaders.

Faced with an unprecedented challenge during the COVID-19 pandemic, rural women in SHGs rose to the occasion and understood the need for flexible leadership, community mobilization, and optimizing support from the local administration and NGOs. SHG women worked hand-in-hand with district officials to mitigate the horror and uncertainty caused by the pandemic. Across the state, through the efforts of more than 3,000 self-help groups, there were great examples of problem solving and execution under high-stress and chaotic conditions. Despite the nationwide lockdown, SHG leaders organized networks of teams to undertake critical tasks. These leaders acted with empathy and consideration, often counseling members of their communities who were at-risk or had been exposed to the COVID-19 virus.

Working closely with other wings of the government, SHG women could be found across the length and breadth of the state, reaching out to vulnerable communities, and meeting their needs on multiple levels. During the twin crises of the COVID-19 pandemic and lockdown, SHG women demonstrated competence and effective management and social leadership in myriad ways.

Arenas of Action

From early March 2020, as COVID-19 cases began to rise, SHGs began to take on a range of new tasks to support their communities. Initially, they were part of a solid two-way information flow between officials at the district and taluka levels and villages across Karnataka. As cases began to rise, they supported frontline workers by producing

¹⁷ Data as of 31.12.2020 and can be found at: <https://uidai.gov.in/images/state-wise-aadhaar-saturation.pdf>

essential medical supplies. When many crucial public programs were not implemented, as usual, these women helped combat food insecurity and generated local small-scale employment.

The efforts of SHG women across various districts of Karnataka can be classified into five arenas which are described within this section.

Table 1: Arenas in which SHG women played a significant role in COVID-19 management

Building COVID-19 awareness	Build awareness Fight disinformation
Production of essential medical supplies	Produce masks, sanitizer, and medical-grade PPEs and face shields
Food Security	Community Kitchens, Distributed Ration Kits
Supporting families through local economic activities	MNREGA Vegetable vending Direct consumer sales of SHG COVID safety supplies
Channel of information to the local administration	Report on local migration Trace primary contacts Assist in Household surveys

(1) Building COVID-19 awareness

Towards the beginning of the pandemic, as government officials brainstormed ways to ensure that COVID-19 safety protocols and a basic understanding of this disease reached the remotest villages, women leaders in panchayats carried the message far and wide. In Bagalkot, SHG women helped form village-level Corona Village Warriors groups, jointly comprising ASHA workers, Anganwadi workers, and SHG members. These teams

prevented close public gatherings in villages, helped enforce social distancing, mask usage, and taught people to improve personal health and hygiene.

In the Shivamogga district, SHG women were trained to conduct a wide range of sensitization exercises, specifically to protect small children and the elderly against COVID-19. Under the guidance of the Panchayat Development Officer, women were inducted into a task force to visit the houses of migrants who had recently returned, to sensitize them on social distancing norms and other precautions to be followed during and after quarantine. They used various forums to build upon and reinforce safety protocols, engaging with the public at Gram Panchayat Level Federation (GPLF) meetings, ward level meetings, and weekly SHG meetings.

In the Mysore district, women motivated their family members and others in the community to challenge misinformation circulating on WhatsApp and other platforms. Before the national lockdown was announced, they advised neighbors to maintain personal distances even within the household, especially from anyone visiting from Bangalore or a larger city. Despite facing initial skepticism, these women remained firm and helped explain that COVID-19 was much more dangerous than a standard cough or fever and could have a life-long effect on critical organs. Communities were encouraged not to stigmatize recovered COVID-19 patients through their efforts.

Table 2: Details of SHGs activated, members involved, and community members sensitized by District

Name of District	No. of SHGs activated	No. of SHG Members Involved	No. of Community members sensitized
Bagalkot	230	2,330	1,70,800
Bangalore Rural	600	7,800	1,86,000
Bellary	1,416	14,160	98,930
Chitradurga	624	6,240	9,640
Dakshina Kannada	96	960	92,000
Gulbarga	1,610	35,956	97,000
Koppal	3,350	33,550	1,99,000
Mysore	10,983	1,09,830	99,229
Ramanagara	2,000	20,000	2,00,000
Tumkur	492	4,468	1,11,000

(This data has been collected until 31.05.2020)

Overall, 2,35,294 women members from across 21,401 SHGs became COVID-19 ambassadors. Over 1.2 million community members were beneficiaries of training sessions and house-to-house visits, ensuring that accurate, scientific information about COVID-19 was effectively disseminated across the state.

(2) Production of masks and essential medical supplies

At the outset of the pandemic, the production of face masks was one of the first activities to be initiated at a decentralized level. KSRLPS and associated SHGs made masks available through multiple sources: at Fair Price Shops, e-commerce platforms, and direct phone sales. Members initially acted as micro-entrepreneurs to create the new market for face masks,

educating their customers on the need and how to assess proper fit and quality. Once mask usage was made compulsory and enforced, this became an assured market, ensuring that SHG members were recognized as leaders in charge within their communities. Through their efforts, mask usage in Karnataka remained consistently high, many months into the pandemic.

“Once, we mandated the use of mask and sanitizers in all gram panchayats and villages in the district, the role of SHG members has been vital, and they have shown great social responsibility in keeping the Covid-19 pandemic under check,” according to Gangubai Manakar, CEO Bagalkot Zilla Panchayat (ZP).

In Bagalkot, in response to the shortage of masks, KSRLPS officials helped arrange training regarding mask preparation and personal hygiene by specialists and procurement of cotton cloth and raw materials from the Khadi Kendra, allowing local SHGs to produce around 3,000 masks every day. These were absorbed to fulfill the needs of the Zilla panchayats, gram panchayats, health department, Karnataka Electricity Board (KEB), local health institutions, medical stores, and the general public.

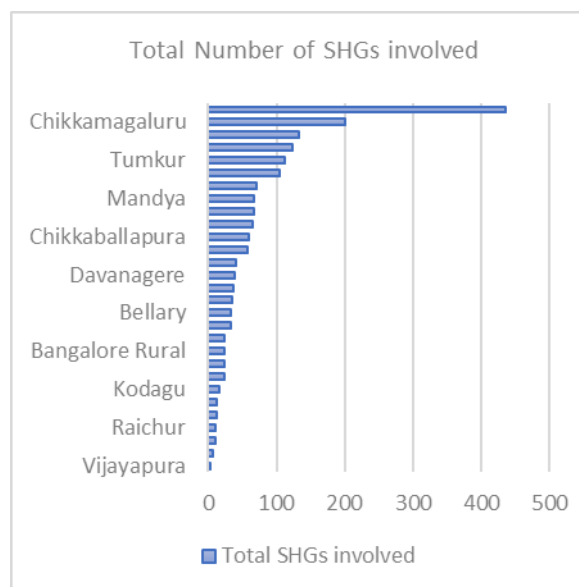


Figure 1: Details of SHGs involved in mask production

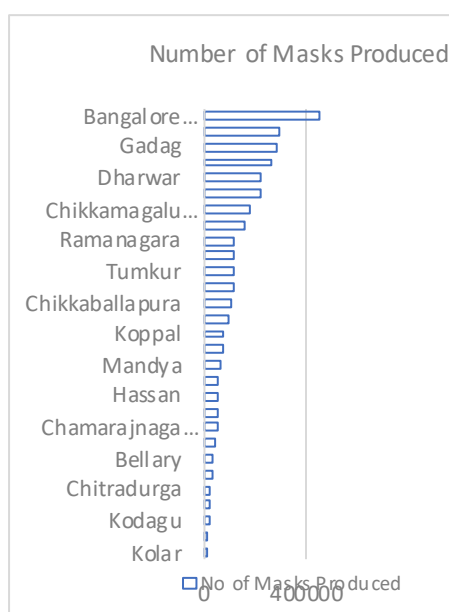


Figure 2: Details of the total number of masks produced

“Sincerity and discipline, which are the usual qualities of women SHGs, were evident in their fight against Covid-19 in Gadag district,” reported Dr. Anand K, CEO, Gadag ZP.

Through this discipline and effective management, nearly 2,000 SHGs were activated across Karnataka, and in total, over 3.4 million masks were produced.

After viewing the success of cotton mask production by tailors and SHG women, the same networks were tapped to produce other equipment required by medical and frontline workers. Tumkur district was the first in which SHGs began production of face shields provided to police officers on COVID-19 duty.

In Udupi District, SHG women surpassed all expectations, with just 82 women from 38 SHGs stitching nearly 60,000 hospital gowns for doctors, nurses, and staff in government hospitals. SHG members produced approximately 90,838 head masks and 1,16,962 hospital gowns. In addition, SHGs in the Ramanagara district made 50 liters of sanitizer for local consumption.

Table 3: Medical equipment produced by SHG women by District

Name of District	Item produced	Quantity
Chitradurga	Hospital Gowns	57,000
Udupi	Hospital Gowns	59,962
Tumkur	Head Mask	40,000
Koppal	Head Mask	40,831
Ramanagara	Head Mask	10,007

(This data has been collected until 31.05.2020)

(3) Food security through community kitchens and dry ration distribution

As the lockdown extended and many low-income families saw their savings reduce, hunger became a significant area of concern. Members of SHGs paved the way towards food security, first through ensuring doorstep delivery of essential grocery items and later on by providing nutritious, cooked food and ration packets to the most vulnerable families. In other areas, women established collection points for surplus vegetables or grains that could be distributed amongst struggling families during the lockdown.

Adivala Hiriyur taluk in Chitradurga district served as the headquarters of the GPLF. Due to its proximity to National Highway 4, it saw a large floating population. After the lockdown announcement, many families dependent on daily wages struggled for food. The GPLF core committee members and SHG members from nearby villages extended their helping hands by giving away nearly 600 kg of rice in just a few days. Officials of KSRLPS helped procure food items and maintain stock for distribution.

According to Honnamba, CEO Chitradurga ZP, SHGs “were able to stitch enough masks to meet the district administration needs and earn for themselves, but they also were instrumental in giving away nearly 600 kg rice. To the poor and needy during the lockdown.”

Using funds earned through one enterprise to support families in a time of need is just one-way SHG women prioritized people over profits during the pandemic.

Table 4: Details of SHGs and members involved and households provided with dry ration by District

Name of District	No. of SHGs Involved	No. of SHG Members Involved	No. of Households provided with Dry Ration
Bagalkot	14	140	1,400
Bangalore	38	380	14,548
Bangalore Rural	1	10	1,750
Chitradurga	12	72	19,890
Koppal	13	130	194
Mysore	335	3,350	39,558
Ramanagara	10	100	17,690

(This data has been collected until 31.05.2020)

Through their actions, over 4,182 women across Karnataka provided dry ration and vegetables to vulnerable families over and above distributions done under expanded government programs. This provided additional security to 95,030 families during a difficult time.

(4) Supporting families through local economic activities

The local-market structure of SHG activities allowed women to remain breadwinners in their families despite many sectors of the Indian economy being in a slowdown.

Women sold 750 quintals of vegetables door-to-door in Uttara Kannada district during the lockdown. This coordinated effort involved 2,000 SHG women and earned appreciation from the district administration. Similar vegetable sales took place in other districts across Karnataka.

Table 5: Details of SHGs and members involved and vegetables sold by District

Name of District	No. of SHGs Involved	No. of SHG Members Involved	Quantity Sold (in quintals)
Belgaum	6	60	7110
Chitradurga	1	10	3600
Dakshina Kannada	8	80	5000
Ramanagara	5	60	14009
Uttara Kannada	2	20	20000

(This data has been collected until 31.05.2020)

Other previously initiated activities continued during the pandemic while maintaining COVID-appropriate behavior. SHG members were involved in the production of spirulina-groundnut *chikkies* in Narsapura GP. These snack bars are rich in micronutrients which help children suffering from malnutrition gain weight and build their immunity. SHGs that produced soaps and phenyl saw increased sales during the pandemic as campaigns encouraged the public to wash their hands frequently and maintain clean surfaces within their homes and shops. Many SHG members took up lake desilting at villages through MGNREGA to earn money; they were also digging pits and planting saplings at places identified by the gram panchayats.

As a pilot program in the Kolar district, an SHG group in convergence with Swachh Bharat Mission (SBM) collects wet and dry waste from each household and undertakes segregation. The unit is running successfully at Uttanur gram panchayat, Mulbagal taluk.

Through these activities, SHGs were able to improve group cohesion and provide social and economic support to their members.

(5) Channel of information to local administration

Lastly, SHG women took on crucial tasks to support COVID-19 monitoring. The overall *Testing-Tracing-Isolation* strategy relied on timely and accurate information provided by communities to government officials. Through regular interaction with friends and neighbors, these women were able to counsel those experiencing symptoms to come forward and get themselves tested and assist local health officials in reaching out to primary contacts who may have been infected.

Most districts of Karnataka included SHG members in their District Level Surveillance Activity Plans, having recognized their dedication and status as members of the community. In Shivamogga, Master Bookkeepers trained under KSRLPS helped enforce home quarantine or institutional quarantine at the district/taluk. They assisted ASHA workers and the health department workers in conducting surveys and continuous monitoring of people under home quarantine.

Outcomes & Impact

The 'unlikely leaders' of SHGs have several achievements to their credit:

- Through manufacturing cloth masks, 5,000 SHG women raised over INR 5 crores in revenues, which were their direct earnings, and helped support vulnerable families through the lockdown.
- As they raised funds, many SHGs donated masks, for example, in the Gadag district, to students who had to appear for board exams. SHG women who manufactured soap distributed it free during household visits, imparting a sense of community service.
- Through their efforts as COVID-19 ambassadors, SHG women could promote safe

practices and limit stigma for those infected with COVID-19. Through their emphasis on following quarantine procedures, cases of COVID-19 remained low in rural areas, and the spread was contained.

- The collection points for donated food items were managed openly and transparently, and as community members themselves, women were able to target distribution of surplus grains and vegetables to families in distress.
- SHG women were recognized as crucial stakeholders in ensuring community participation in government programs. Household surveillance visits had an element of public accountability and were more regular when SHG members were inducted into the process.

With the tenth anniversary of NRLM in 2021, some reports have been published on the experience and impacts of SHGs under its banner (Kochar et al. 2020, Kumar 2021). These studies tend to agree that SHG women are classic examples of stakeholders with 'skin in the game'; they are the most invested in creating opportunities for their members and their communities. In an event like the COVID-19 pandemic, it becomes clear that SHGs that are closely knit and have previously demonstrated effective collective action can have an enormous impact. This experience was not limited to Karnataka. The World Bank has keenly documented how 67 million Indian women across 6 million SHGs have been a crucial link between the government and society during the lockdown. Drawing examples from Bihar, Kerala, Jharkhand, and Odisha, the potential of their leadership is clear (World Bank, 2020). If further empowered to identify and mitigate problems plaguing their communities, the SHG model may be leveraged to tackle far-ranging issues from

domestic violence to natural resource management.

Conclusion

The last year has been challenging for both the government and ordinary citizens. However, as the American singer Dolly Parton once said, "Storms make trees take deeper roots." As a result of the determination exhibited by women across Karnataka, possible adverse impacts were severely limited. The leadership potential resides in every person regardless of their background, and in times of adversity, this comes to the forefront.

SHGs have worked closely and reliably with district officials and built their skills. These unlikely leaders have learned how to fulfill bulk orders of various products and access multiple funding avenues. They have created crores of value and demonstrated the courage to help citizens across Karnataka remain in their homes during an unprecedented pandemic. Local Primary Health Centres, gram panchayats, and other similar institutions have recognized the services and support provided by the SHGs and federations. As the state of Karnataka has been recognized for its innovative and effective public engagement in combating COVID-19, a share of the credit must go to the unlikely women leaders across the state who worked tirelessly to make their villages safer.

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