CHAD

The Economic Benefits of a Post-COVID-19 Gender-Equitable Society

October 2020

WORLD BANK GROUP

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ABBREVIATIONS AND ACRONYMS

AIDS	Acquired Immunodeficiency Syndrome
BaU	Business as Usual
BRAC	Bangladesh Rural Advancement Committee
CCT	Conditional Cash Transfer
CEDAW	Convention on the Elimination of All Forms of Discrimination Against Women
CEMAC	Central African Economic and Monetary Community (*Communauté Économique et Monétaire d'Afrique Centrale*)
CEP	Community Empowerment Program
CFAF	CFA Franc
CGE	Computable General Equilibrium
CONFENEM	Conference of Ministers of Education
COVID-19	Coronavirus Disease (2019)
CPF	Country Partnership Framework
DHS	Demographic and Health Survey
DHS	Demographic and Health Survey

EPAG	Economic Empowerment of Adolescent Girls
FAO	Food and Agriculture Organization
FGME	Female Genital Mutilation and Excision
GBV	Gender-Based Violence
GDP	Gross Domestic Product
GFS	Government Financial Statistics
GRM	Grievance Redress Mechanism
HCI	Human Capital Index
HDI	Human Development Index
HIV Virus	Human Immunodeficiency
IGA	Income-Generating Activity
ILO	International Labor Organization
INSEED	National Institute of Statistics and Economic and Demographic Studies (*Institut National de la Statistique et des Études Économiques et Démographiques*)
IPV	Intimate Partner Violence
LFP	Labor Force Participation
LMIC	Low- and Middle-Income Country

M&E	Monitoring and Evaluation	SENAFET	National Chadian Women's Week (*Semaine Nationale de la Femme Tchadienne*)
MANAGE	Mitigation, Adaptation, and New Technologies Applied General Equilibrium	SIGI	Social Institutions and Gender Index
MCT	Math Cognitive Tutor	SRH	Sexual and Reproductive Health
MPO	Macro-Poverty Outlook		
NGO	Non-Government Organization	SSA	Sub-Saharan Africa
MPO	Macro Poverty Outlook	SUT	Supply and Use Table
OECD	Organization for Economic Cooperation and Development	SWEDD	Sahel Women's Empowerment and Demographic Dividend
		TFP	Total Factor Productivity
OROA Achim	Ouadi Rime and Ouadi	TIEA	Table of Integrated Economic Accounts
PARCA	Refugees and Host Communities Support Project (*Projet d'Appui aux Réfugiés et aux Communautés d'Accueil*)	UCT	Unconditional Cash Transfer
		UNDESA	United Nations Department of Economic and Social Affairs
		UNDP	United Nations Development Program
PASEC	Analytical Program of CONFENEM Educational Systems	UNFPA	United Nations Population Fund
PND	National Development Plan (*Plan National de Développement*)	UNHCR	United Nations High Commissioner for Human Rights
PNG	National Gender Program (*Plan National sur le Genre*)	UNICEF	United Nations Children's Fund
PROPAD	Climate Resilience Agriculture and Productivity Enhancement Project (*Projet de Renforcement de la Productivité Agricole et Résilience au Climat*)	USD	United States Dollar
		WAEMU	West African Economic and Monetary Union
		WDI	World Development Indicator
		WEDP	Women Entrepreneurship Development Project
SAM	Social Accounting Matrix		
SDG	Sustainable Development Goal	WHO	World Health Organization

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EXECUTIVE SUMMARY

Abstract

This report examines the extent of gender gaps and their economic impact in Chad. It proposes policies for improving gender equality, taking into account the challenges posed by COVID-19. Although the Government of Chad has taken actions designed to boost gender equality, significant challenges persist. Child marriage is widespread among girls, reducing girls' education and resulting in one of the highest rates of early childbearing worldwide. Girls reaching adulthood have, on average, lower literacy, education levels, wages, and agricultural productivity compared to men. Meanwhile, the COVID-19 pandemic threatens to exacerbate gender gaps both in adolescence and in adulthood. According to the results of estimations from a Computable General Equilibrium (CGE) model, reducing gender inequality could potentially increase per capita GDP by up to 13.5 percent by 2050 (i.e., a real rate of return to investment of 9 percent per year) compared to baseline levels. To boost gender equality, the Government should focus on reforms intended to: i) enhance the productivity for adult women; ii) increase learning outcomes for girls; and iii) reduce the prevalence of child marriage and early childbearing.

Gender equality matters in its own right and is a key ingredient of economic development. The 2012 World Development Report presents four main supporting arguments. First, millions of women continue to experience discrimination around the world, which is acknowledged in the form of having gender equality as one of the Sustainable Development Goals (SDG). Second, gender inequalities can have large impacts on productivity due to potential labor misallocation and underinvestment in human capital because gender-differentiated access to education, economic opportunities, and productive assets means that women cannot contribute their full potential to society. Third, a gender-inclusive society will secure the future prosperity of the next generation through its influence on children's development outcomes. Fourth, when women and men face an even playing field (i.e.,

equal opportunities to be socially and politically active or equal control over household decisions and assets), the institutions and policy choices that develop are more likely to be more representative of the broader society, leading to better development outcomes for all.

The report documents patterns of gender inequality, assesses the economic impacts of those patterns, and proposes policy options for the Government to achieve gender equality. The report is timely given the World Bank's renewed emphasis on gender issues and investments in human capital as well as the importance of this theme in the Country Partnership Framework (CPF) for Chad. To analyze patterns of gender inequality, the study follows a life cycle approach, looking first at gender inequality for adolescent girls, then for adult women. It considers gender inequalities in: i) educational attainment;

ii) child marriage, early childbearing, and female genital mutilation and excision (FGME); iii) agricultural productivity; iv) entrepreneurship; and v) wages in formal employment. In addition, it considers ways in which the COVID-19 pandemic could exacerbate gender gaps. Finally, the report uses a CGE model to estimate the economic benefits of gender equality.

Patterns of Gender Inequality Start to be Severe in Adolescence as Girls Learn Less in School, Drop Out Early to Marry, and have Children at a Young Age

While gender gaps in school attendance are closing, Chadian girls still have lower educational levels and poorer learning outcomes than boys. As Table ES.1 illustrates, Chad's overall education levels are much lower than the Sub-Saharan African (SSA) average. Women on average have 1.3 years of education, little more than a third of the level for men at 3.6 years. Moreover, these averages are much lower than the SSA average. Overall mean years of schooling in Chad is 2.4, less than half the SSA average of 5.7 years. The Human Capital Index (HCI) for Chad estimates that a girl starting school at the age of 4 can expect to complete 6.2 years of school while a boy will complete 7.7 years.[1]

Child marriage, early childbearing, and female genital mutilation and excision (FGME) are acute in Chad, compared to its regional peers. About 67 percent of women were first married before age 18 (30 percent before age 15). This is in contrast with 8 percent of Chadian boys being married before age 18. Among West African countries, only Niger and the Central African Republic have a higher incidence of child marriage (76 percent and 68 percent, respectively). Child marriage is associated with a higher rate of early childbearing and school dropout. About 58 percent of Chadian women

have had a child before age 18. Moreover, 38.4 percent of women aged 15-49 have undergone FGME. There is a strong association between child marriage, early childbearing, and low educational attainment. FGME is culturally linked to marriageability as it serves as a rite of passage from childhood to adulthood, making it difficult to separate from the practice of child marriage. Additionally, FGME is associated with higher maternal mortality.

Gender Gaps in Agricultural Productivity and Entrepreneurship Entail Substantial Economic Losses

Women constitute half of Chad's working population but are less productive and earn less than men. Only 50 percent of women participate in the labor force in contrast to 73 percent of men.[2] Moreover, women are less likely to join the formal labor force and to work for pay, and they do not have access to the same work opportunities as men. Even when they do, they are more likely to work part-time or in the informal sector. Time use constraints for women, including the burden of domestic chores, also play a role in constraining their ability to work. All this leads to substantial gender gaps in earnings and productivity, which in turn decrease women's bargaining power and voice as well as their ability to negotiate their productive work. This report analyzes three issues: i) productivity in agriculture; ii) productivity in formal employment; and iii) entrepreneurship.

a. *Female-managed plots are 62 percent less productive than those managed by men.* Most of the gender gap is due to a difference in endowments, meaning that if men and women had access to the same resources, the gender gap in agricultural productivity would be reduced. The fact that women generally farm smaller plot sizes is associated with the gender

TABLE ES.1: Benchmarking Chad's levels of education with SSA

	Chad	Sub-Saharan Africa
Mean years of schooling		
Female	1.3	4.7
Male	3.6	6.5

Source: UNDP Human Development Report, 2019.

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[1] https://databank.worldbank.org/data/download/hci/HCI_2pager_TCD.pdf.

[2] We define the labor force participation (LFP) rate as the proportion of the working-age population (15-64) that is either working or actively looking for work. Unpaid and domestic care work is not included in this definition due to a lack of available data.

gap in productivity. Women's lower access to farm labor is also correlated with the gender gap in productivity. Having experienced a violent shock such as farmer-livestock conflict or armed conflict or insecurity is correlated with a larger gender gap. Gender segregation in crop choice is also correlated with the gender gap. The more women cultivate millet, sorghum and rice, the lower the gender gap in agricultural productivity.

b. *Women are 9 percent less likely to be in formal employment than men; however, there is no gender gap in wages for those formally employed.* Women in formal employment are much more likely to be literate and to have secondary or tertiary education than women in informal employment. They are also more likely to be single, widowed, or separated. The analysis reveals that women's lower propensity to be in formal employment is linked to the fact that women have lower levels of education. Married women in either monogamous or polygamous unions are also less likely to work in formal employment. However, women in formal employment have similar wages on average to their male counterparts within the same sectors and with similar education levels. Occupational segregation is seen in men being more likely to work in construction, transportation, communication, agriculture, and livestock breeding, while women are more likely to work in education, healthcare, hospitality, and personal services.

c. *Despite accounting for 57 percent of enterprises, female-owned firms make 77 percent less profit than male-owned firms.* Female entrepreneurs in our sample are on average less educated, less likely to be literate, and more likely to be widowed, divorced, or separated. Female entrepreneurs are also much less likely to have access to electricity, running water, machinery, a bank account, or a telephone than male entrepreneurs. Part of the gender gap in enterprise profits is due to sectoral segregation. More women entrepreneurs in sales and repairs of motor vehicles would be associated with a smaller gender gap in profit. However, most of the gender gap in profits comes from differences in returns to factors of production, revealing underlying biases. Female-owned enterprises have lower returns from

having electricity or a phone, being in retail and wholesale trade, or from firm size. Female-owned enterprises also receive a lower return from being located in N'Djamena.

Reducing Chad's Gender Gaps will Create Substantial Economic Benefits

Assessing the economic benefits of gender policies is critical for Chad policymakers. These benefits are estimated using a CGE model. CGE models are used to estimate a broad range of economic benefits of gender equality in several realms such as education, fertility, and agricultural productivity.

Our CGE model estimates the impact on growth of three policies through which gender equality affects the economy relative to a business-as-usual (BaU) scenario. The first scenario considers closing gender gaps in educational attainment, which will have a positive influence on delaying early childbearing along with the potential positive impact of lowering fertility. This should bring about a demographic dividend due to lower population growth, which reduces the dependency ratio and increases saving rates. The second scenario investigates the impact of increasing agricultural productivity among female farmers. Finally, the third scenario looks at the potential impact of COVID-19 on gender gaps. COVID-19 is expected to affect women more than men, given underlying gender inequality. For example, women work more in high-risk sectors (ILO, 2020) and hence are more likely to be affected by the COVID crisis. Restrictions on movement, increased caretaking burdens, and increased gender-based violence will create further burdens for women. These pathways were selected based on the size of gender gaps and data availability.

The results of the CGE model present robust new evidence that advancing gender equality will have positive impacts on economic growth. Per capita GDP growth could increase by 13.5 percent by 2050 relative to the baseline scenario. This is a lower bound estimation for the benefits of closing the gender gaps as it results from closing two most important gaps but does not include what greater gender equality in the broad sense would achieve. These economic gains result in a rate of return to investment of about 9 percent per year

TABLE ES.2: Economic benefits of gender equality on per capita GDP by 2050

	Scenarios			
	1. Reducing Agricultural Productivity Gap	2. Demographic Transition	3. COVID*	4. Combined Scenarios (1 and 2)
% above baseline per capita GDP in 2050	3.5	9.2	−9.0	13.5

Source: Authors' calculations based on CGE estimates.
*COVID figure is for 2020.

that could be generated by closing the gender skill gap and reducing the fertility rate and child dependency, which would increase the household saving rate and close the gender productivity gap in agriculture. Investing in education to close the gender skills gap will increase the number of skilled women participating in the economy, boosting GDP growth. Educating more women will delay the marriage age (e.g., ending child marriage), thus reducing total fertility.[3] The simulation results suggest that persistently high fertility constrains poverty reduction efforts. Similarly, policies to close the gender gap in agricultural productivity will also accelerate growth, benefiting households in rural areas. The largest gains of gender equality are from demographic transition associated with lower fertility (Scenario 2 in Table ES.2 below). Due to limitations in the data, these projected gains are conservative estimates of potential benefits, and thus provide a potential lower bound of the impact of gender policies.

Although cross-country estimates of the economic benefits of gender equality are difficult to compare, the results of the Chadian case are within the range of estimates from comparable countries. The 2019 Niger Gender report used a CGE model and found that the combined impact of various gender policies (education, fertility, labor force participation, agricultural productivity, and urban productivity) will raise GDP by 22 percent and that closing gender gaps in Guinea will raise GDP by 6.8 percent by 2050.

The Impacts of the COVID-19 Pandemic will be Exacerbated for Chadian Women and Deepen Pre-existing Vulnerabilities

The COVID-19 pandemic will have a compound economic impact on women given already existing gender gaps. The decline in wage rates and employment

will worsen the livelihoods of almost all socioeconomic groups. The pandemic is likely to reduce female labor force participation by more than 3 percent in the short term, and inevitably, more women will lose their jobs compared to men.[4] Our findings from CGE simulations suggest that the decline in female labor force participation (LFP) is not uniform across different female labor types. The proportion of women losing work is particularly high in services sectors, where most women are employed in urban areas; moreover, the drop in female LFP is highest in absolute terms among female farmworkers as most women are employed in farm work. Preliminary evidence from the World Bank Enterprise Survey in Chad, which surveyed 377 firms in June and July 2020, demonstrates that the proportion of women as a fraction of all permanent full-time workers has decreased by 6.6 percent, driven by a steep change in medium-sized enterprises.

The COVID-19 pandemic will likely have significant effects on women and health and educational outcomes for several reasons, including resource reallocation, increased unpaid care work, adoption of risky behavior, exposure to the disease through traditional roles, and pre-existing occupational gender segregation. Evidence from past pandemics shows increases in adolescence pregnancy for out-of-school girls, permanent school dropouts of adolescent girls, and rises in maternal mortality as public health systems are strained to address pandemics. The disruption in

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[3] In the case of Chad, for example, Wodon and de la Brière (2018) estimate that ending child marriage could reduce total fertility by 13 percent nationally in Chad, thus reducing population growth.

[4] The pandemic has strongly led women to give up their income-generating activities (initially weak) to take better care of the household.

schooling during the COVID-19 pandemic and unequal access to technology have the potential to exacerbate existing gender gaps in learning outcomes in Chad.

The pandemic will likely put women at greater risk of gender-based violence (GBV), particularly intimate partner violence (IPV). Efforts toward eliminating FGME will be disrupted as a result of the COVID-19 pandemic, and more girls will be subjected to this type of violence. The pandemic may result in an increase in certain types of GBV, particularly IPV, due to several reasons, including reduced availability and access to external help such as safety support services, legal systems, the inability to temporarily escape abusive relationships, and exploiting financial dependence for unknown virus-related healthcare. The pandemic may also expose more girls to FGME as social distancing and lockdowns restrict some of the most effective ways of preventing FGME such as community empowerment programs and discontinuation proclamations, which require group gatherings (UNFPA, 2020).

Closing Gender Gaps Requires Legal Changes and Programs to Influence Social and Cultural Practices

The Government has taken significant steps toward adopting gender-based policies. At the international level, Chad has ratified many international conventions on human rights in general and those promoting equal opportunities for men and women in particular. Chad's Constitution also recognizes the same rights for men and women to access services and resources. With the support of development partners, including the World Bank, the Chadian government has adopted various initiatives to improve girls' access to education such as the Sahel Women's Empowerment and Demographic Dividend (SWEDD) project. The Government has also implemented its National Plan on Gender (2019–2023). However, more needs to be done.

Although the enacting of laws clarifies the Government's position on gender equality, changing social norms limiting women's agency is key. Traditionally, access to land is limited since tradition reserves this right for men. In some regions, a woman must be accompanied by a man when she leaves the

house. The consequences of the lack of opportunities and freedom of action preventing girls and women from realizing their potential are huge, not only for the women and girls themselves but also for their families and society as a whole. Gender discrimination hampers the development and building of social capital, undermines trust between the sexes, distorts relationships within the family, limits social networks, and weakens social capital and society's ability to work toward common goals. The World Development Report on Gender (World Bank, 2012) proposes two kinds of interventions to influence social norms: those promoting greater knowledge about alternatives (to lower the cost of learning about options), and those promoting the coordination of individuals to challenge social norms or collective action.

Improving Learning Outcomes, Keeping Girls in School, and Preventing Teen Pregnancies to Reduce the Gender Gap for Adolescents.

Adopting scripted lesson plans and teaching at the right level to address girls' lower learning outcomes. Scripted lesson plans originate from the idea that direct and explicit teaching scaffolds teachers' ability to effectively teach literacy skills, particularly the key components of reading. Interventions with structured pedagogy in early grades or providing teachers with clear guidance on teaching or scripted lesson plans have been shown to be successful in improving literacy for girls across a variety of measures (Piper, 2009). Another category of interventions that work well for girls (and boys) are those that help teachers to teach children at their current level of learning (e.g., teaching at the right level), either through diagnostic feedback or software (Banerjee et al., 2016; Casas et al., 2014). To expand access to education for all with emphasis on encouraging female participation, more schools need to be built and equipped with the necessary infrastructure.

Empowering adolescent girls requires policies and programs designed to end child marriage, prevent early childbearing, and educate girls. The most effective interventions to delay the age of first marriage and prevent early childbearing usually change incentives for girls to remain in school or go

back to school if they dropped out due to marriage.[5] Chad needs to boost its spending in education. Early education should be free and compulsory. More schools need to be built and equipped with basic infrastructure, including water and sanitation, textbooks, and learning resources. More trained teachers (particularly female teachers) need to be recruited. When schools are located far from villages in rural areas, better transportation services could help retain girls in school. Conditional cash transfer (CCT) programs linked to delaying marriage for girls is also a promising policy alternative.

Expanding skills development to offer an alternative to early family formation and improve the productivity of girls who have dropped out of school. Community-based life skills training programs are particularly promising. These involve groups of girls led by female mentors, who meet regularly over several weeks or months. These groups serve two critical functions: they offer "safe spaces" in which girls are organized and can be reached with a variety of interventions and educational topics, and they build social assets, including friendships, trusting relationships, and self-esteem, which can have a positive influence on girls' livelihoods and health. Community-based life skills interventions tend to target girls as young as 10 to 11, reaching them before the onset of sexual activity and marriage. There have been promising results of these programs in Uganda, Ethiopia, and Zambia in increasing girls' preferred age of marriage and childbearing.[6]

Adopting programs to keep girls in school or enabling them to return if they dropped out or directly delaying marriage. The most effective interventions to bring girls back to school are those aimed at reducing the cost of schooling (Evans and Yan, 2018). A promising policy alternative is conditional cash transfer (CCT) programs. These programs provide money to poor families' conditional on sending children to school or bringing them to health centers on a regular basis. CCTs to incentivize girls' education and promote health, which also support families during shocks, have proved effective in improving school outcomes among girls in many developing countries. These programs have shown successful results in reducing fertility in Nicaragua and Brazil. CCTs appear to be more effective for girls than unconditional cash transfers (UCTs).[7]

Enforcing existing laws prohibiting FGME and early marriage and community-led approaches to change gender norms to reduce its prevalence. The persistence of FGME and child marriage is in large part due to an absence of vigorous action by judicial authorities to ensure their prevention and eradication. Ensuring the proper application of the law, with independent and impartial investigation of every suspected case of FGME and early marriage leading to prosecution for perpetrators and their accomplices, will be key to eradicating these harmful practices. These efforts need to be accompanied with regular dialogue with communities so as to change gender norms. Many of the programs that achieve gender norm transformation in low- and middle-income countries (LMIC) are conducted at community level. These programs help people address existing relations of gender and power in their family and broader social networks.

Improving Adult Women's Economic Opportunities through Better Maternal Healthcare, Skills Development, and Better Access to Markets and Productive Assets

To reduce maternal mortality, the entire healthcare system needs to be functional. Women need folic

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[5] For example, in Southern and Eastern Africa, the likelihood of a married girl attending school is more than 20 times lower than the likelihood for her unmarried peer (Omoeva, Hatch, and Sylla, 2014; Malé and Wodon, 2016).

[6] Chakravarty et al. (2015).

[7] Mexico's initial CCT program (PROGRESA), which provided financial support to poor mothers if their children obtained basic medical care and attended school regularly, increased girls' transition rate from elementary to junior secondary school by 14.8 percentage points and boys' by 6.5 percentage points (Baird et al., 2013). Following the success of PROGRESA, many countries have instituted similar programs, several of which have been subject to randomized evaluations, yielding similar results (Fiszbein et al., 2009). CCT programs have led to decreases in fertility in Nicaragua (Barham, Macours, and Maluccio, 2018) and Brazil (Olson, Clark, and Reynolds, 2019). A meta-analysis shows that CCTs are more effective for girls than unconditional cash transfers (UCT) (Baird et al., 2013).

acid before pregnancy, antenatal visits, identification of potentially dangerous conditions, institutionalized delivery, and a functioning hospital. Women need greater access to and more autonomy with reproductive healthcare.

To improve women's agricultural productivity, they need to have better access to inputs. Part of the gender gap in agricultural productivity is linked to the fact that women have less access to lower levels of labor. A possible solution is to offer women financing and support to hire labor and support to help with childcare. To encourage women to learn about and adopt productivity-enhancing agricultural inputs, such extension should be tailored to women's needs and financing offered to encourage the purchase of inputs. The venues in which women receive and learn how to use these productivity-improving inputs could also be made more gender responsive so as to more thoughtfully meet women's needs and preferences. Gains in agricultural productivity could also be achieved by encouraging women to grow cash crops.

To close gender gaps in agriculture, entrepreneurship, and wage earnings, women's skills need to be improved. A large literature demonstrates how basic literacy and numeracy skills allow people to better operate in the labor market and ultimately access better jobs. To address Chad's strikingly low female literacy rate of 22 percent, well-designed adult literacy programs are a promising policy option. Agricultural extension could be provided to help female farmers boost their productivity. Business training, including an increased focus on socio-emotional skills, may be a promising policy intervention to reduce the gender gap in entrepreneurship.[8] For women to be able to take advantage of higher paying jobs, efforts need to go into improving their human capital accumulation.

To remove impediments to women's employment and entrepreneurship as well as access to various institutions, legislation should be amended. For instance, women cannot choose where to live. Chad applies the 1958 version of the French Civil Code. According to Article 215, "The choice of residence for the family resides with the husband; the woman is obligated to live with him, and he is required to receive her." In addition, women are unable to get a job in the same way as men. Article 223 states that women may exercise professions separate from their husbands so long as their husbands do not object. Moreover, women cannot open bank accounts without their husband's permission. Addressing those societal constraints will require reforming the Civil Code along with interventions to promote behavioral changes in gender roles.

The COVID-19 crisis risks exacerbating already substantial gender gaps. The pandemic is deepening pre-existing inequalities, exposing vulnerabilities in social, political, and economic systems, which in turn amplifying the impacts of the pandemic. Women need to be involved in the response to the crisis and in decision making and women and girls need to be deliberately targeted in all the efforts made to address the pandemic.

Supporting the equality of women and men is a judicious development strategy for Chad. Policy efforts must encompass the several fronts where barriers to gender equality persist, from influencing norms to ensuring equal access to opportunities. To generate change, gender policies need to be ambitious and address barriers that could hinder the implementation of those reforms.

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8   Campos et al. (2017).

TABLE ES.3: Matrix of Policy Recommendations

Recommendations	Gap Addressed and Desired Impact (Factors)
Improving Economic Opportunities for Women	
Improve women's agricultural productivity by: i. Improving women's access to labor through financing for hiring labor ii. Providing training for women to adopt productivity enhancing inputs and cash crops and adapting to potential limitations caused by COVID-19	Women's lower agricultural productivity is linked to their lower skills and lower access to inputs.
Improve women's investment in their human capital by: i. Providing adult literacy programs ii. Providing agricultural extension programs iii. Offering business training, including an increased focus on psychosocial skills, business development, and management iv. Targeting lines of credit to female-owned businesses during the COVID-19 pandemic	Low levels of female literacy and education are linked to lower female agricultural productivity, lower enterprise profits, and a lower likelihood of being in formal employment.
Reduce maternal mortality by: i. Decentralizing the healthcare system to strengthen community involvement with a focus on maternal healthcare ii. Training healthcare workers to provide primary health services at the lowest level iii. Providing greater decision-making autonomy to women in matters of reproductive health. iv. Adopting performance-based financing to motivate community health workers to achieve indicators v. Ensuring that key health services remain available during the public health strain caused by COVID-19	Chad has the highest maternal mortality level in the world.
Improve Learning Outcomes for Girls	
Improve girls' learning outcomes by: i. Adopting scripted learning plans for teachers ii. Teaching at the right level, which consists of dividing students into groups based on learning needs rather than age or grade; dedicating time to basic skills rather than focusing solely on the curriculum; and regularly assessing student performance rather than relying only on end-of-year examinations. iii. Providing school infrastructure, including new schools and access to water, latrines and hygienic facilities or transportation facilities, where needed	Lower levels of learning for girls leading to lower literacy and education levels in adulthood.
Establish Safe Spaces Clubs. These are platforms for convening girls with a trusted adult mentor at a specific time and place. By combining socializing, fun, and access to mentors, the clubs are attractive for girls to attend. Other services can also be delivered from that base. For instance, these clubs: i. Provide life skills and sexual and reproductive health knowledge to promote nutrition, reproductive health behavior; training and outreach on soft skills, and elimination of all forms of GBV, including early marriage. ii. Provide economic opportunities for girls not in school aimed at building skills for income-generation, livelihood interventions, financial literacy, and access to financial services iii. Provide incentives to stay or return to school for girls who have dropped out, such as Conditional Cash Transfers promoting school enrolment and completion Use media campaigns to promote girls' empowerment and education aimed at both genders	High rates of maternal mortality. Early marriage and early childbearing and other forms of systemic gender-based violence against girls. Awareness of the need to change social norms (early childbearing, early marriage, girls' education).
Protect adolescent girls through legal frameworks by: i. Enforcing existing laws to regulate child marriage and FGME ii. Strengthening awareness campaigns and dialogue with communities, customary chiefs, religious leaders, and traditional communicators to eliminate child marriage and FGME	Weak enforcement of legal protection for girls for early child marriage and against violence. Little public support for ending child marriage or FGME.

INTRODUCTION

Gender equality is a key pathway to ensuring lasting poverty reduction and shared prosperity. Gender equality is commonly defined as equal rights, opportunities, and political participation for women and men, boys and girls. Gender equality matters intrinsically because of the role it plays in mediating the opportunities that determine material human wellbeing. The World Development Report (2012) on gender articulates this with reference to Amartya Sen's view of development as a process of expanding freedoms equally for all people. Following this definition of development, gender equality is a core objective *per se* (World Bank, 2012). This view is further evident in the Sustainable Development Goals (SDG), which recognize that gender inequalities are deep-rooted in every society. As a result, SDG 5 states the need to "Achieve gender equality and empower all women and girls." Moreover, the United Nations High Commissioner for Human Rights (UNCHR) has pledged to advance gender equality because millions of women around the world continue to experience discrimination.

Gender equality matters for economic development. Promoting gender equality brings economic benefits for all. Ensuring a gender-inclusive society where access to education and health services, economic opportunities, and agency does not depend on one's gender can enhance growth and make institutions more representative (World Bank, 2012). Limitations to the economic contribution of women have a negative impact on economic output. Output losses

due to gender inequalities result from misallocation and underinvestment of labor. Gender equality is therefore instrumental for development by enhancing economic efficiency (World Bank, 2012). Although economic development alone can play a major role in boosting equality between men and women, it will not be enough by itself to reduce gender inequality (Duflo, 2012). As illustrated in Figure 1.1 taken from the World Development Report on Gender Equality (World Bank, 2012), household decision-making, markets, and both formal and informal institutions combine and interact to determine gender-related outcomes.

Identifying the main gender gaps a country faces across different domains better informs policy design. To that end, this report seeks to identify areas in which progress has been achieved in increasing opportunities and outcomes for women and men in Chad and where further policy action is required. It focuses on two areas that are critical for gender-equal access to opportunities: i) endowments, such as health and education; and ii) economic opportunities, such as access to labor, land, and financial markets. The report draws on a recent household survey and aims to provide an overview of the prevailing gender gaps along with recommendations for closing those gaps, covering a wide range of outcomes. It thus seeks to serve as a guiding document for policy action and dialogue, further research, and public discussion.

Chad is a fragile, oil-exporting, low-income country with a real per capita GDP of USD 734 in 2018. Chad has experienced more frequent and severe

FIGURE 1.1: Gender outcomes result from interactions between households, markets, and institutions
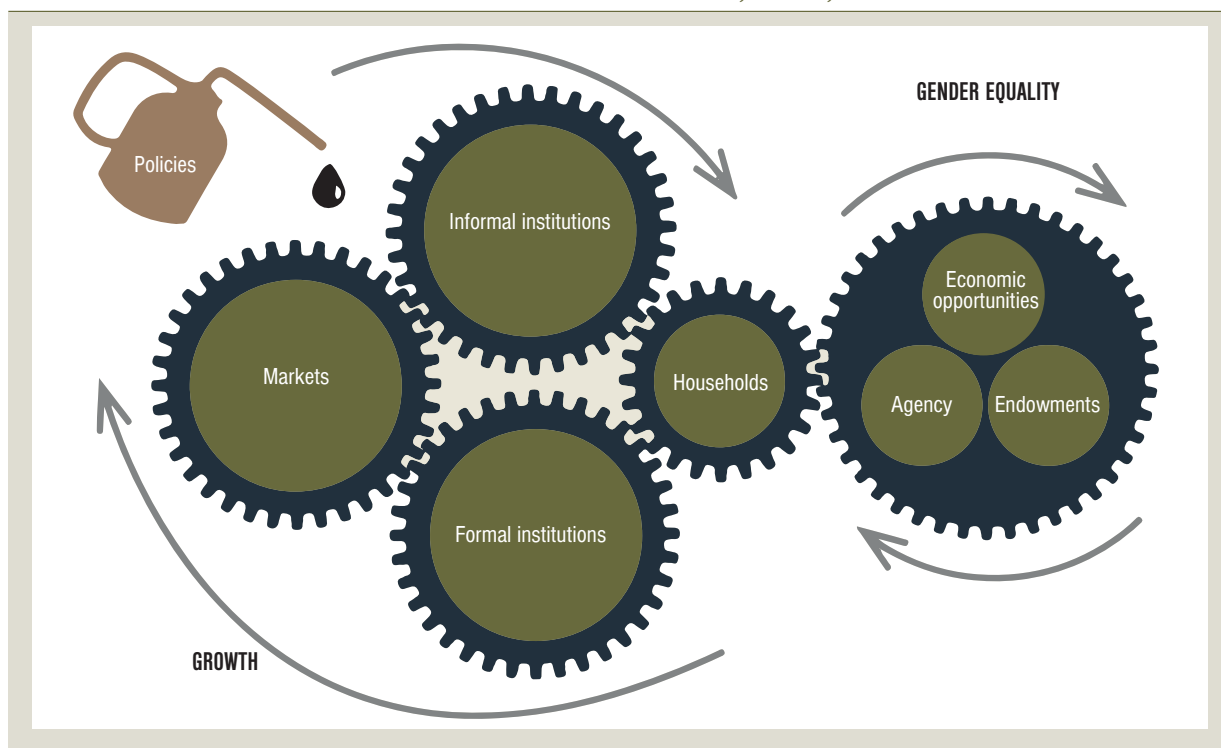
Source: World Bank (2012).

conflicts than any other country in the Central African Economic and Monetary Community (CEMAC)[9] region. Conflicts and violence have characterized 61 percent of the country's post-independence years, or more than four times the regional average. Chad is also affected by conflicts in neighboring countries (Sudan, Cameroon, Libya, and Nigeria) and currently hosts more than 450,000 refugees. Moreover, since 2005, oil has been the primary source of export earnings, accounting for over 90 percent of total exports. This dependence on the oil sector exposes the country to the fiscal and balance of payment shocks stemming from oil price volatility.

Chad ranks poorly on many social indicators, and the situation is even worse for women. Chad is ranked 186th out of 187 countries on the Human Development Index (HDI 2016). The country has a primary school completion rate well below the SSA average (38 percent compared to 76 percent) and child, infant, and maternal mortality ratios among the highest in the world (119 per 1,000, 71 per 1,000, and 1,140 per 100,000, respectively). The Human Capital Index, a

measure of the amount of human capital a child born today can expect to attain by age 18, is 0.29 for girls and 0.3 for boys.

This report examines gender differences in the Chadian economy over the course of the lifecycle as well as their macroeconomic impacts. Using the conceptual framework used in Wodon & de la Brière (2018), the cost of gender inequality (shown in Figure I.2), this report focuses on two main domains of impact for gender inequality: i) educational attainment, child marriage, early childbearing, and FGME for girls and adolescents; and ii) labor, earnings, and productivity for adult women. Moreover, the macroeconomic impacts of gender inequality are examined using a CGE model. The analysis presented in the report relies on primary data from various surveys, including the Harmonized Household Living Standards Survey

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9   CEMAC is made up of six countries: Cameroon, Central African Republic, Chad, Equatorial Guinea, Gabon, and the Republic of Congo.

FIGURE 1.2: Conceptual framework for measuring the cost of gender inequalities
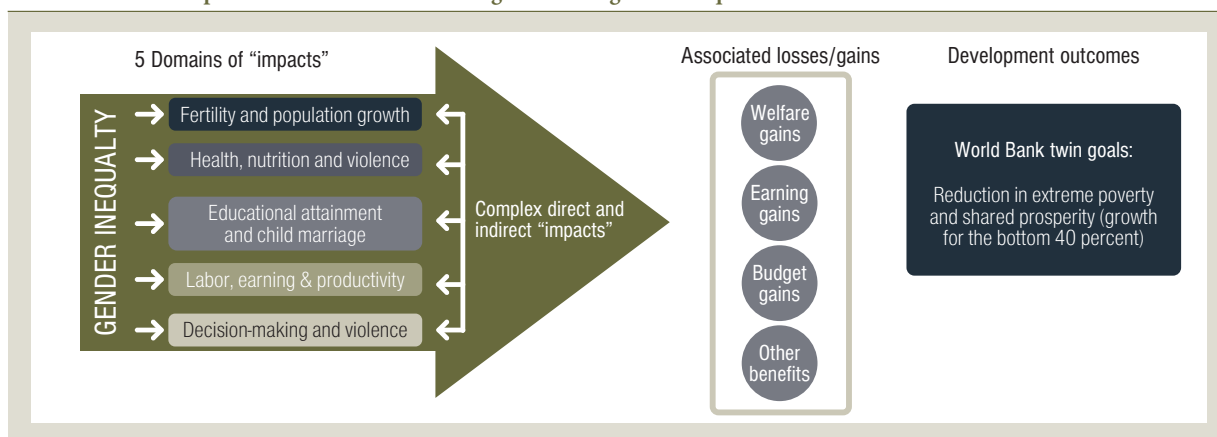
Source: Wodon and de la Brière (2018).

2018/2019 and the 2014/2015 Demographic and Health Survey (DHS). We also used the World Bank Development Indicators and the OECD and UNICEF gender indicators as secondary sources of data.

The Gender Report aligns with the strategic objectives of the National Gender Program (PNG 2019–2023) and strengthens the results of World Bank projects currently on its gender agenda for Chad. The PNG explicitly aims to improve equal access to basic social services, resources (including land), and benefits for men and women. It will ensure systematic integration of gender dimensions in budgeting, implementation, and monitoring of development strategies, policies, and programs at all levels. Moreover, the five-year plan promotes women's empowerment while lowering GBV. In this context, the policy recommendations inform the Government about the bottlenecks faced in achieving these objectives as well as possible policy actions.

In addition, the report provides analytical underpinning to finetune existing World Bank-funded projects and initiate other interventions. The World Bank is currently working with the Government to empower women through the Sahel Women's Empowerment and Demographic Dividend (SWEDD) and to develop a gender action plan under Climate Resilience Agriculture and Productivity Enhancement Project (PROPAD).

The rest of the report is organized as follows. Chapter 2 examines gender gaps in education, rates of child marriage, early childbearing, and FGME. Chapter 3 focuses on labor markets in adulthood and looks at gender gaps in labor market participation, wage earnings, agricultural productivity, and entrepreneurship. Chapter 4 presents the macroeconomic benefits of closing gender gaps in education and productivity using a computable general equilibrium (CGE) model calibrated for the Chadian economy. Chapter 5 presents potential impacts of the COVID-19 pandemic on existing gender gaps along with implications for adolescent girls and adult women. Finally, Chapter 6 describes the actions Chad has taken thus far to achieve gender equality and presents evidence on what programs could be useful in closing gender gaps as well as mitigating the impacts of the COVID-19 pandemic.

GENDER INEQUALITY IN ADOLESCENCE

Investments in human capital have demonstrated large impacts on individuals' capability to benefit from life-long opportunities and to make positive social and economic contributions. Differences between men and women's investments in health and education, especially at an early age, can perpetuate gender gaps in access to opportunity throughout the life cycle. The persistence of unequal opportunities for women entails large costs in the long term, not only for individuals and families but also for societies (World Bank, 2012). These gaps can play a direct role in the intergenerational transmission of gender inequalities and lead to substantial costs for societies. This chapter estimates gender gaps affecting young women in Chad and discusses the factors correlated with these gaps.

Low educational attainment and child marriage are correlated with gender inequality, affecting girls' life trajectories, with macroeconomic consequences. Child marriage is negatively correlated with girls' education as it affects school attendance of adolescent girls, especially in secondary school. Countries with high child marriage rates also tend to have low educational attainment for girls, which in turn leads to reduced lifetime earnings and lower GDP growth (López Calix et al., 2018). Child marriage also contributes to higher fertility as women who marry earlier tend to have children earlier and bear more children over their lifetime. Meanwhile, early childbearing increases the likelihood of dropping out of school and decreases the chances of completing secondary or even primary school.

Gender inequality in Chad becomes severe in adolescence as girls have poorer learning outcomes than boys, are more likely to marry as children, and have their first child before the age of 18. Gender inequality affects young girls since in gender-unequal societies, they often receive less nutrition, fewer opportunities to play, and access less learning than young boys.[10] However, gender inequality becomes especially visible and consequential during adolescence. Thus, girls in Chad continue to fare poorly in terms of educational attainment in comparison to boys. Low educational attainment, high child marriage, and early childbearing are closely-linked phenomena and lead to low skill accumulation. We examine this issue further in this chapter.

Gender Gaps in Education

Chad's primary and secondary school completion rates for both boys and girls are well below the average of Sub-Saharan Africa. This is illustrated in Figure 2.1. Both primary and secondary completion rates are below the bottom 20 percent percentile for SSA countries.

Literacy rates are low for women in comparison to men. The average literacy rate for women is 22 percent and that for men is 36 percent. However, Figure 2.2 shows that the low literacy rates for both men and women have been improving as among

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[10] Plan International (2017).

FIGURE 2.1: Evolution of primary and secondary completion rates
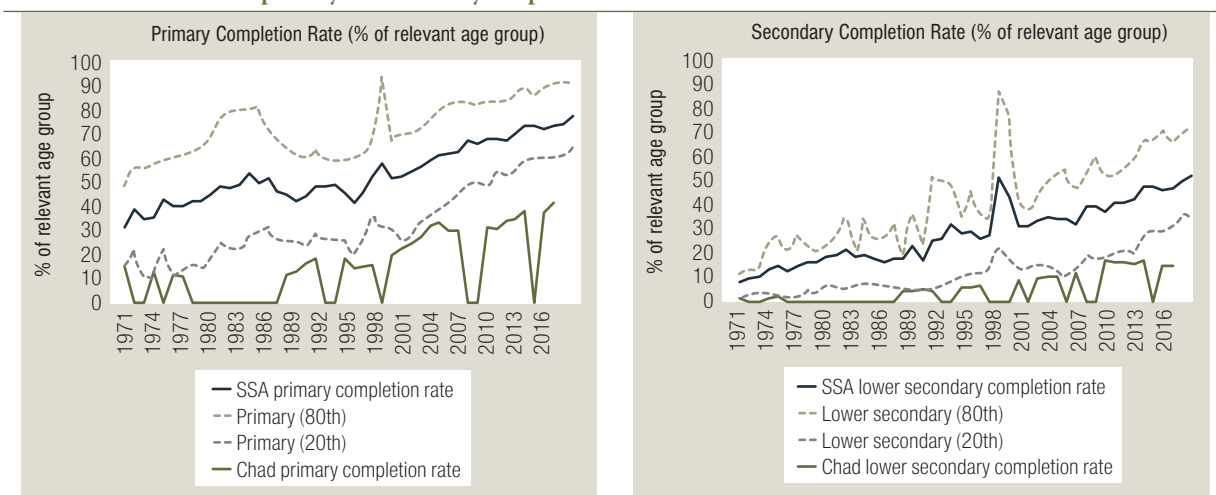
Source: World Bank (2012).

Chadians aged 11–20, boys' literacy is 61 percent and girls' literacy is 45 percent. According to the latest Household Survey (2018–2019), Chadian women have on average 2.7 years of schooling and men have 3.3 years. Figure 2.3 illustrates how educational attainment has been evolving by age cohort. The highest level of education has been increasing per cohort, even though progress has been slower for women.

Chad has narrowed gender gaps in school attendance at all levels. We analyze net school attendance, or the total number of students in the theoretical age group for a given level of education

attending that level at any time during the reference academic year expressed as a percentage of the total population in that age group. The gender gap in net primary attendance is relatively low at 0.4 percentage points. This reflects a narrowing of the historical gender gap in education. The gender gaps for middle and secondary school are similarly small at 0.4 percentage points and 0.3 percentage points, respectively.

Chad has a notable gender gap in learning. Chad is among the lowest-ranking performers in international standardized tests among francophone African countries, and the situation is particularly

FIGURE 2.2: Literacy rates, by age group
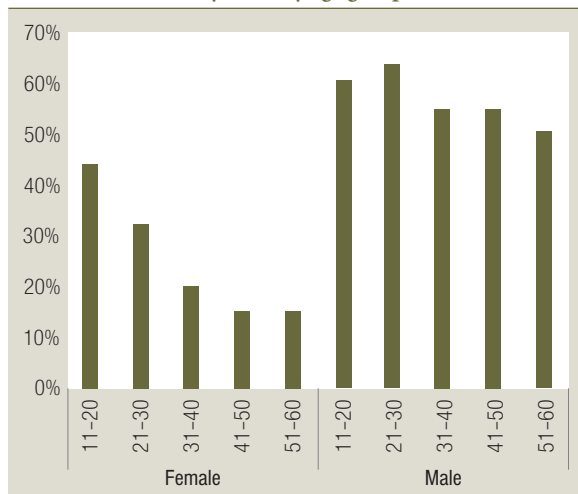
Source: Authors' calculations using Household Survey data.

FIGURE 2.3: Educational attainment, by age group and gender
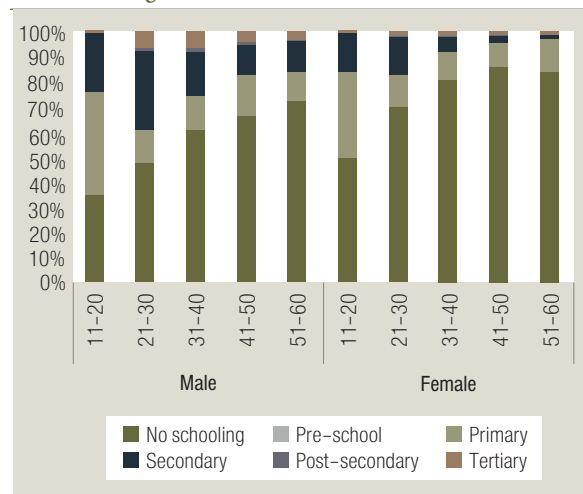
Source: Authors' calculations using Household Survey data.

FIGURE 2.4: Gender gaps in test scores in PASEC countries
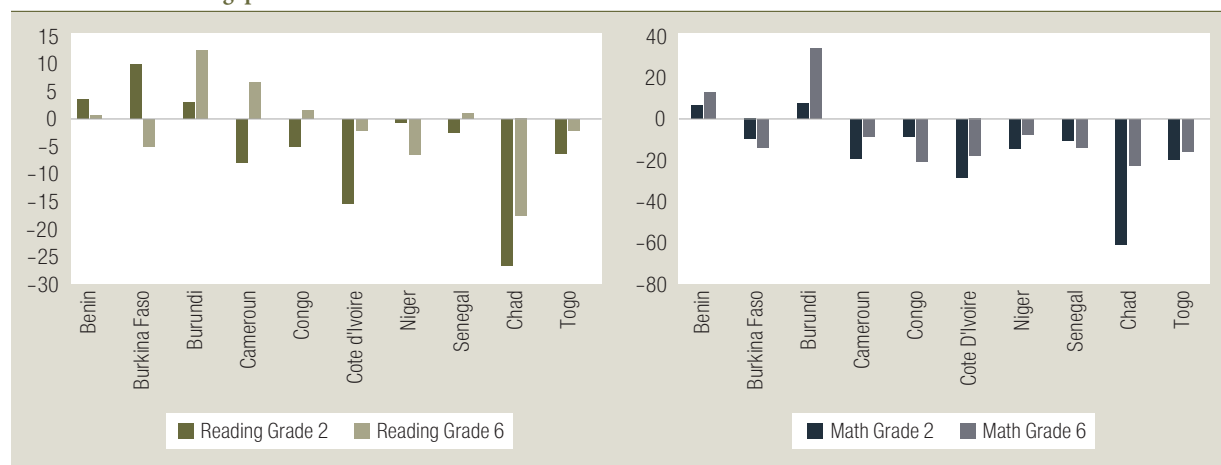
Source: Authors' calculations using World Development Indicators (WDI).

serious for girls. There is growing consensus that quality rather than quantity of education is an important driver of economic wellbeing (Hanushek and Woessmann, 2008). One typical way of measuring quality and actual learning outcomes is to compare outcomes on standardized tests. We use data from the Analytical Program of CONFEMEN Educational Systems (PASEC), which has been administered in various countries in francophone West Africa. PASEC is

designed to assess student abilities in math and reading in French. Figure 2.4 shows that Chad has the largest gender gaps in test scores for reading French and math of all PASEC countries in 2014 in both Grades 2 and 6. We carried out an Oaxaca-Blinder decomposition analysis (See Box 2.1) to identify variables correlated with the gender gap in learning.

The gender gap in test scores in Grade 2 is 25 in reading French and 60 in math, both in favor of

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BOX 2.1: Oaxaca-Blinder Decomposition

The Oaxaca-Blinder decomposition method allows for the breakdown of the gender gap into two main components: the endowment effect, and the structural effect.

The endowment effect refers to the portion of the gender gap that results from differences between males and females in terms of factors of production such as age, family characteristics, rural or urban, and so on. Simply put, it refers to the differences in the quantities or levels of factors influencing education for males compared with females. Most significantly for policy, the portion of the gender gap attributable to the quantity or levels of resources can be reduced by ensuring that females receive the resources they lack relative to males.

The structural effect captures returns on resources. This portion of the gender gap results from differences in what is obtained from a given amount of a factor of production, i.e., the difference in school attendance rates for males and females in large families or in rural areas. Even when males and females have access to the same quantities of resources, they may not achieve the same results. A noticeable difference in returns on resources points toward differences in the treatment of males as compared with females within formal and informal societal institutions. As a result, providing females with more resources will not necessarily reduce this structural effect portion of the gender gap. Instead, policies need to address broader issues of disadvantage (such as gender-based discrimination) faced by females.

boys. Of this, the explained portion due to differences in endowments is –8.46 in reading and –3.25 in math, and both are marginally significant. The unexplained portion due to differences in returns are 23.74 in reading and 52.73 in math, both of which are strongly statistically significant. Gender disparities in test scores are thus mostly driven by a difference in returns to boys than girls as opposed to differences in endowments. The gender gap in test scores is lower when the number of pedagogical resources available in the school is greater but is larger when the student is older. The gender gap in test scores in Grade 6 is 17.40 in reading French and 21.73 in math, both in favor of boys. Similarly, gender disparities in test scores for Grade 6 are mostly driven by a difference in returns to boys than girls. The greater the amount of school infrastructure available, the lower the gender gap in both reading and math scores.

Child Marriage and Early Childbearing

Fully 30 percent of women were married before the age of 15, a figure that climbs to 70 percent by age 18. We use data from the 2014–15 Demographic and Health Survey (DHS) to estimate rates of child marriage and early childbearing. Figure 2.5 shows rates of child marriage by age cohort for Chad and comparator countries. Although the prevalence of child marriage has declined slightly in Chad, rates are still very high and lower than only those in Niger. The woman's level of education appears to be a significant factor correlated with early marriage: the median age of marriage for women who are uneducated is 15.9 years compared to 18.6 among those who have attained secondary school education. In contrast, the rate of child marriage for boys is low as 97 percent of boys between 15–19 are single. UNFPA has found that in the 82 countries they analyzed (including Chad), child marriage rates for boys are very low even in countries where child marriage among girls is relatively high. Moreover, the rates of child marriage appear to be similar in rural and urban areas. In Chad, child marriage rates are highest in Salamat, Chari-Baguirmi, and Guéra regions, as illustrated in Map 2.1.

At the same time, the rate of early childbearing, defined as mothers having their first child before age 18, remains high. According to 2014–15 DHS data, 62 percent of girls had at least one child by the age of 19, with

14.3 percent of them having their first child by age 15. Figure 2.6 shows that Chad has among the highest early childbearing rates in the West Africa region. The rates of early childbearing are higher in rural areas compared to urban ones. Regions with high child marriage rates such as Salamat, Chari-Baguirmi, and Guéra are also among those with the highest child fertility rates, as illustrated in Map 2.2. The child fertility rate is lowest in Wadi Fira, Ennedi, and Borkou regions, which also have comparatively lower child marriage rates.

Female Genital Mutilation and Excision (FGME)

Chad has a significant incidence of FGME. According to DHS 2014–15 data, 38 percent of women aged between 15–49 had undergone FGME. Female genital mutilation and excision refers to all procedures involving partial or total removal of the female external genitalia for non-medical reasons. There is no significant difference between urban and rural areas. However, there is wide regional variation, as illustrated in Map 2.3, with the rates highest in the south-eastern regions of Salamat, Sila, and Guéra (over 90 percent) and lowest in the western regions of Lac, Kanem, and Borkou (less than 3 percent). There is some variation by religion; it is highest among Muslims (62 percent) and lowest among Protestants (19 percent). Almost all FGME is carried out by traditional cutters.

Support for FGME is high in Chad from both women and men, although there is some variation by income level. Three in ten women aged 15–49 believe that FGME is required by their religion. This proportion decreases with the woman's level of education: 36 percent of uneducated women think that FGME is required by religion compared to 18 percent of women with a higher level of education. Nearly 3 in 10 women (29 percent) think that the practice of FGME must continue. This proportion is almost ten times higher among women without education (39 percent) than among women with higher levels of education (4 percent).

Child marriage and FGME have similar underlying causes and consequences. The Population Council (2018) summarizes six qualitative peer-reviewed studies examining the link between child marriage and FGME in six Sub Saharan African

MAP 2.1: Child marriage rates, by region
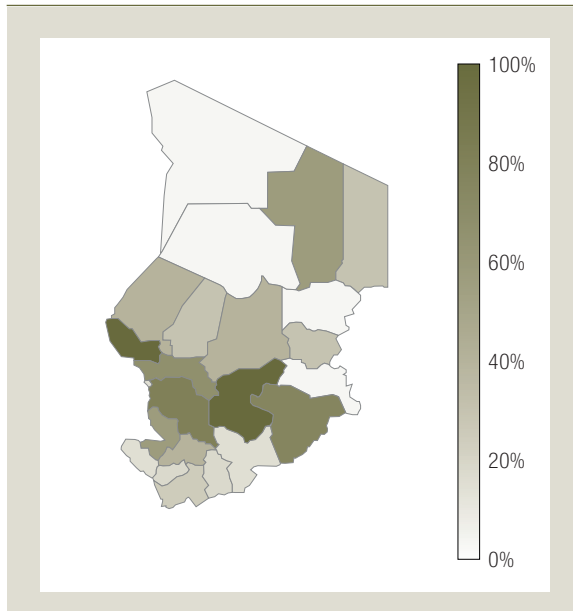
Source: Authors' calculations using DHS data.

MAP 2.2: Early childbearing rates, by region
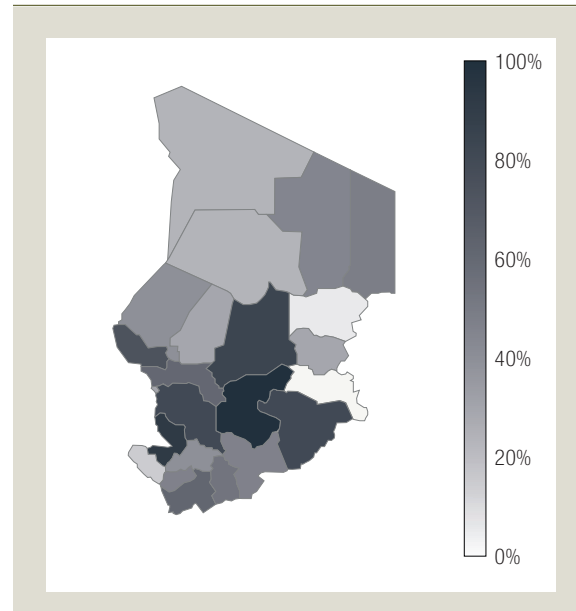
Source: Authors' calculations using DHS data.

MAP 2.3: FGME rates, by region
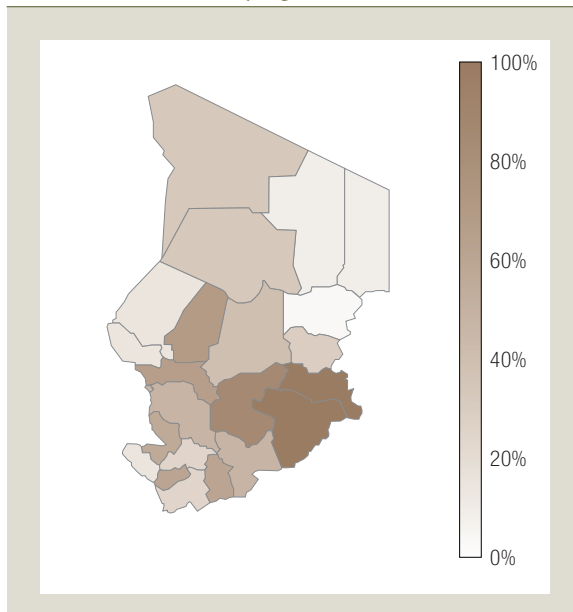
Source: Authors' calculations using DHS data.

countries. They find that all the studies reported an indirect association between the two practices since they both have similar causes and underlying intentions. FGME and early or child marriage are both thought to protect girls from social and economic risks

driven by poverty and lack of economic opportunity for girls in the areas where they are practiced. Parents believe that marriage provides a financially stable future for girls and that circumcised girls are more desirable candidates for marriage. The qualitative research also provides evidence that both practices share a similar social context as both occur in many of the same places and among the same subgroups. Social and cultural norms and beliefs sustain both practices, which tend to be related to controlling women's and girls' sexuality and maintaining traditions and family honor. In addition, FGME, child marriage, and early childbearing often result in similar negative consequences, including the potential for maternal and newborn deaths, birth complications, stigmatization or social isolation, and domestic or intimate partner violence (IPV).

The persistence of FGME is due in large part to a culture of impunity. The Constitution of Chad (1996) does not expressly refer to harmful practices or FGME, but Article 14 guarantees equality "without distinction of origin, race, gender, religion, political opinions, or social position." It also places a duty on the State to eliminate all forms of discrimination against women and to ensure the protection of their rights in all domains of private and public life. Article 17 addresses an individual's right to life and personal integrity, and

FIGURE 2.5: Child marriage by age group, latest DHS

Source: Authors' calculations using World Development Indicators (WDI).

FIGURE 2.6: Early childbearing for women aged 20–24 in West Africa (%)
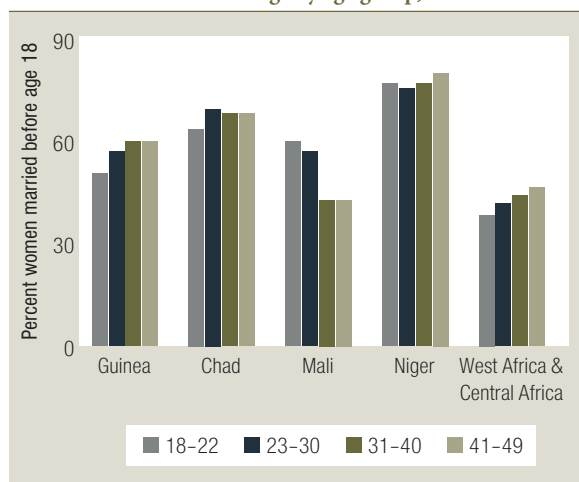
Source: Authors' calculations using World Development Indicators (WDI).

Article 18 prohibits cruelty, degrading and humiliating treatment, and torture. The main law relating to FGME in Chad is Law 006/PR/2002, the Reproductive Health Law passed in March 2002. The 28 Too Many (2018) report shows that it has not been possible to find any recent cases where the laws against FGME have been applied. The UN Country Report on Human Rights Practices for 2017 states that no cases were prosecuted by the authorities during the previous year.

Conclusion

Gender inequality in adolescence in Chad remains pervasive. This inequality is present in the three closely related dimensions of child marriage and early childbearing, FGME, and low educational attainment for girls. Child marriage and early childbearing can be both the cause and consequence of poor educational attainment. By serving as a rite of initiation, FGME is linked to child marriage. These mutual relationships are the reason why incentives for girls to remain in school

or go back to school if they dropped out coupled with effective application of the laws against FGME and child marriage along with awareness campaigns and dialogue with communities appear to be among the most effective interventions for delaying the age of first marriage and prevent early childbearing.[11] The onset of the COVID-19 pandemic is also likely to have an adverse impact on adolescent girls in Chad, with potential disruptions to girls' educational outcomes and increased likelihood of engaging in risky behavior in terms of sexual and reproductive health. Chapter 5 explores these issues in more detail, and Chapter 6 details programs and policy options that could improve learning outcomes for girls and reduce child marriage and early childbearing so as to reduce gender inequality in Chad and mitigate the impacts of the COVID-19 pandemic.

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[11] For example, the SWEDD project is providing scholarships for girl's education.

GENDER INEQUALITY IN ADULTHOOD

Women constitute 45.8 percent of Chad's working population. This chapter examines gender gaps in agriculture, entrepreneurship, and earnings using national household survey data from the Harmonized Household Living Standards Survey 2018–19 collected by the National Institute of Statistics and Economic and Demographic Studies (INSEED). For each area, we first compute simple differences in outcomes between men and women. We then consider a broad range of explanatory variables and report how the gender gaps change when comparing men and women that are similar along these dimensions. We then conduct an additional analysis to pinpoint the most important constraints contributing to the gender gap. We also include an analysis on the maternal mortality rate using the Demographic & Health Survey 2014–15 (DHS).

Labor Market Characteristics

The female labor force participation rate[12] in Chad is 49 percent, 13 percentage points lower than the Sub-Saharan Africa regional average. Female labor force participation is also lower than the male labor force participation rate of 73 percent. To assess the contribution of different factors to the gender gap in labor force participation, we decompose the gender gap using an Oaxaca-Blinder decomposition. The explained portion due to differences in endowments is 1.3 percentage points. This means that part of the gender gap in labor force participation is attributable to the fact that women do not have the same access to resources as men; for example, women have less education on average.

The unexplained portion due to differences in returns is 5.3 percentage points. This reflects the fact that even if men and women had the same access to resources, the gender gap in labor force participation would still be high. This reflects social norms that disadvantage female participation. Among the structural factors, we see that women in higher income deciles, women who are married in both monogamous and polygamous unions, and women living in rural areas are much less likely to work. There are also significant regional differences in labor force participation.

Agriculture is the main employer in Chad, employing 69 percent of the population. Women are mainly concentrated in agriculture (73 percent), commerce (12 percent), and services (5 percent) whereas men are also concentrated in agriculture (65 percent), services (13 percent) and commerce (11 percent). This is illustrated in Figure 3.3. The unemployment rate for women (0.4 percent) is lower than that of men (1.1 percent). Unemployment is a more rural than urban phenomenon, as shown in Figure 3.4. The analysis in the rest of the chapter focuses on gender inequalities in agriculture, formal business performance, and wage employment due to their importance as a source of income for Chadian women.

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[12] The labor force participation (LFP) rate is defined as the percentage of the female population aged 16+ that is working or actively looking for employment.

FIGURE 3.1: Ratio of female-male labor force participation rate by log per capita GDP, 2018
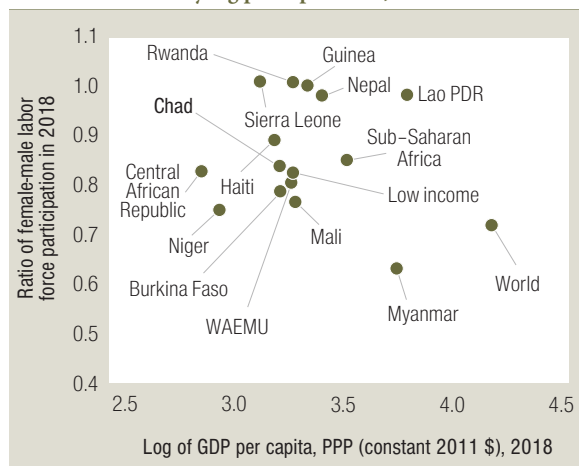
Source: Authors' calculations using World Development Indicators and Harmonized Household Survey.

FIGURE 3.2: Female labor force participation rate (% of female population aged 15–64), 2019

Source: Authors' calculations using World Development Indicators and Harmonized Household Survey.

Gender Gaps in Agricultural Productivity

Agriculture is a key sector of the Chadian economy, accounting for 45 percent of GDP in 2018 and generating 69 percent of total employment. Gender gaps in agriculture production are substantial. Table 3.1 compares plots managed by men and women and reveals substantial differences. Men manage more and larger plots than women. Men also use more farming inputs such as labor, improved seeds, and fertilizer, while women are more likely to practice intercropping and irrigation.

The unconditional gap in agricultural productivity between male- and female-managed plots is 77 percent. This gap falls to 62 percent

after controlling for various farmer and plot level characteristics. To assess the contribution of different factors to the gender gap in productivity, we decomposed the gap using the Oaxaca-Blinder decomposition technique. Most of the gender gap is due to a difference in endowments, meaning that if men and women had access to the same resources, the gender gap in agricultural productivity would be reduced. The fact that women generally farm smaller plot sizes and have lower access to farm labor is correlated with the gender gap in productivity. Having experienced a violent shock such as farmer-livestock conflict or armed conflict or insecurity is also correlated with a larger gender gap. Gender segregation in crop choice is similarly correlated with the gender gap; the more women cultivate millet, sorghum and rice, the lower the gender gap in agricultural productivity.

FIGURE 3.3: Employment in selected sectors, by gender
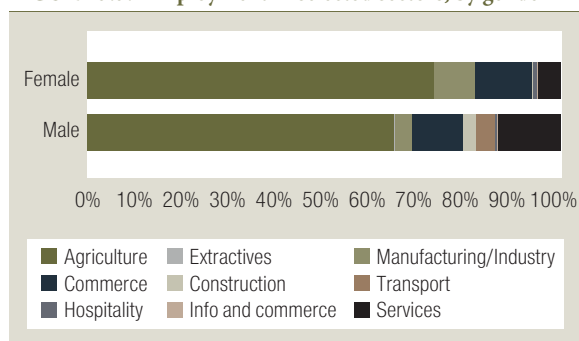
Source: Authors' calculations using World Development Indicators and Harmonized Household Survey.

FIGURE 3.4: Unemployment rate, by gender and region type
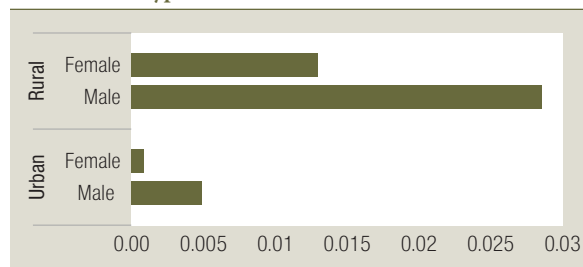
Source: Authors' calculations using World Development Indicators and Harmonized Household Survey.

TABLE 3.1: Characteristics of households working in agriculture, by gender of plot manager

Variable	Male Manager	Female Manager	Difference (1)-(2)
Age	40.535	39.625	0.910**
Literate	0.488	0.155	0.334***
Primary education	0.200	0.133	0.067***
Secondary education	0.094	0.039	0.055***
Tertiary education	0.091	0.016	0.075***
Plot characteristics			
Number of plots	2.381	1.850	0.531***
Total plot size (in ha)	2.865	1.567	1.298***
Plot occupation: % of plots owned	0.872	0.798	0.074***
Average time to walk to plot in hours	0.743	0.696	0.047**
Input Use			
Total hired farm labor days	24.476	17.139	7.337***
Total farm days (both hired and family)	164.102	103.900	60.202***
Share of plots using irrigation	0.021	0.028	-0.007*
Intercropping (% of plots)	0.151	0.176	-0.026***
Plots using improved seeds (% of total)	0.040	0.020	0.020***
Plots using organic fertilizer (% of total)	0.093	0.079	0.013*
Plots using inorganic fertilizer (% of total)	0.035	0.016	0.020***
Plots using pesticide/herbicide/fungicide (% of total)	0.066	0.061	0.005
Value of farm tools and equipment (CFAF ,000)	15.516	6.908	8.608***
Yields			
Value of production per ha (CFAF ,000/ha)	119,816.183	79,954.141	39,862.042***

Note: The value displayed for t-tests are the differences in the means across the groups.
***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

Gender Gaps in Livestock

There is gender inequality in ownership of livestock, with men being more likely to own any type of animal. Table 3.2 compares the number of animals owned by individuals in our data and shows that across animal type, men are significantly more likely to be reported as the owner of the asset. The proportion of animals owned also varies by gender: men have cows, goats, chicken, and sheep whereas women's livestock portfolio mostly consists of goats and chicken as illustrated in Table 3.2.

Women earn 18 percent lower profits from livestock than men. The Oaxaca-Blinder decomposition reveals that most of the difference is linked to a difference in endowments, meaning that if men and women had access to the same resources, the gender gap would be smaller. Specifically, inequalities in the number of cattle, sheep, goats, horses, and camels are linked to a higher gender gap in livestock profits.

Gender Gaps in Enterprise Performance

Female entrepreneurs own 57 percent of the enterprises in our data, are low skilled, and have limited resources. Wage job opportunities are limited in Africa. This drives men and women who might not otherwise be inclined to start a business to become entrepreneurs. Table 3.3 describes the characteristics of entrepreneurs in our data. The average female

TABLE 3.2: Livestock ownership, by gender

Livestock	Number Owned by Men	Number Owned by Women	Difference
	Mean	**Mean**	**(1)–(2)**
Total number of animals	1.228	0.733	0.494***
Cattle	0.207	0.049	0.158***
Sheep	0.233	0.131	0.102***
Goats	0.291	0.199	0.091***
Camels	0.057	0.022	0.035**
Donkeys	0.009	0.002	0.008***
Pigs	0.015	0.02	-0.005
Rabbits	0.001	0	0.001
Chicken	0.335	0.275	0.060**
Guinea fowl	0.036	0.004	0.032***
Other poultry	0.03	0.014	0.016**

Note: The value displayed for t-tests are differences in means across groups.
***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

entrepreneur is 37 years old. Female entrepreneurs are only 30 percent likely to be literate in contrast to 59 percent of male entrepreneurs. Female entrepreneurs have lower levels of education on average: 65 percent have no formal education, and only 4.2 percent have tertiary education. Female entrepreneurs are more likely to be widowed, divorced, or separated, namely 29 percent of female entrepreneurs in contrast to only 3.7 percent of men. Female entrepreneurs also are much less likely to have access to electricity, running water,

machinery, or a telephone than male entrepreneurs. Taken together, female entrepreneurs appear to be less educated and with fewer resources on average.

Female owned enterprises make 77 percent less profit than male owned businesses. The Oaxaca decomposition reveals that most of the gender gap in profits comes from the unexplained component, revealing underlying biases. There is some sectoral segregation; the presence of women in sales and repairs of motor vehicles is associated with a smaller gender

FIGURE 3.5: Livestock ownership, by gender
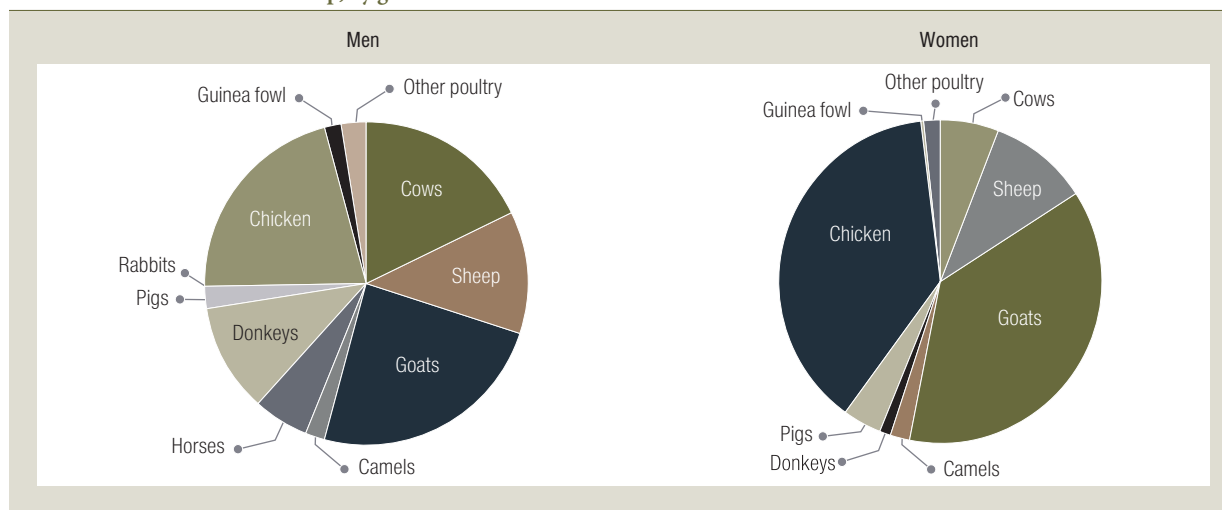
Source: Authors' calculations using Harmonized Household Survey.

TABLE 3.3: Enterprise characteristics, by gender of owner

Variable	Male Owner	Female Owner	Difference (1)–(2)
Age in years	38.35	36.56	1.787***
Literate	59%	30%	29.3%***
No formal education	61%	65%	−4.3%***
Primary education	17%	20%	3.5%***
Secondary education	9%	10%	−1%
Tertiary education	11%	4%	6.6%***
Single (never married)	10%	4%	6%***
Married monogamous	72%	51%	20.8%***
Married polygamous	14%	15%	−1%
Free union/widowed/divorced/separated	4%	29%	−25.7%***
Enterprise characteristics			
Enterprise has access to electricity	33%	7%	26.3%***
Enterprise has access to water	5%	1%	3%
Enterprise has access to a telephone	53%	20%	32.9%***
Enterprise has access to tax ID	2%	0%	1.8%***
Enterprise had difficulty accessing credit in the past year	29%	31%	−2%
Enterprise has machines	12%	3%	8.5%***
Enterprise owner has a bank account	4%	2%	2.5%***

Note: The value displayed for t-tests are differences in means across groups.
***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

gap in profit. In the unexplained component, women receive lower returns from being in a monogamous marriage, in a larger household, or being literate. Female-owned enterprises also have lower returns from having electricity, a phone, being in retail or wholesale trade, or from firm size. Female-owned enterprises also receive a lower return from being located in N'Djamena. Since most of the gender gap in profits is associated with women receiving a lower return from the same resources, this is indicative of underlying discrimination.

Gender Gaps in Earnings in Formal Employment

Formal employment is low, with only 8.6 percent of our sample report receiving wages from an employer. Women are 9 percent less likely to report being in formal employment than men. Table 3.4 compares

women in informal and formal employment. Among the notable differences is the fact that women in formal employment are more likely to be single, widowed, or separated. They are also much more likely to be literate and to have secondary or tertiary education. This is confirmed by the Oaxaca-Blinder decomposition. The analysis reveals that women's lower propensity to be in formal employment is linked to the fact that they have lower levels of education. In addition, women in the highest income decile are less likely to work, similar to those in N'Djamena and Ennedi Ouest. Married women in either monogamous or polygamous unions are also less likely to work in formal employment.

After controlling for sector, education, and marital status, there is no significant gender gap in earnings. The United Nations SDG 8.5, which sets out the aim of achieving "equal pay for work of equal value" by 2030, proposes as a main indicator comparing "average hourly earnings of female and

TABLE 3.4: Characteristics of women in informal and formal employment

Variable	Informal Employment	Formal Employment	Difference
Rural Area	18%	65%	−46.3%***
Age in years	33.548	35.997	−2.449**
Single (never married)	10%	17%	−6.6%**
Married monogamous	52%	44%	8.3%*
Married polygamous	16%	6%	10.7%***
Widowed/divorced/separated	22%	34%	−12.3%***
Literate	24%	69%	−45.1%***
No formal education	75%	42%	33.5%***
Primary education	16%	6%	10.3%***
Secondary education	6%	10%	−4%*
Tertiary education	3%	21%	−18.5%***

Note: The value displayed for t-tests are differences in means across groups.
***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

male employees" (Indicator 8.5.1). Table 3.5 compares male and female workers in formal employment. On average, women appear to earn CFAF 362 more per hour. However, women work 265.8 fewer hours a year, which is why they earn on average CFAF 227,000 less per year than do men. Occupational segregation with men is also more likely in construction, transportation and communication, agriculture, and livestock, while women are more likely to work in education, healthcare, and personal services. Women in formal employment are more likely to be single or widowed or separated than men. Women in formal employment are also more educated on average than their male counterparts. They are more likely to have secondary or tertiary education, whereas men are more likely to have primary education.

Maternal Mortality, Contraceptive Use, and Gender-Based Violence

Chad has the highest maternal mortality rate in the world. The maternal mortality rate is defined as the number of maternal deaths due to birth or pregnancy-related causes per 100,000 live births. In 2017, Chad's maternal mortality rate was 1,140.[13] Approximately 34 percent of all female deaths in Chad are maternal deaths. As shown in Figure 3.6, Chad has the highest maternal mortality rates among all West African

countries, with little change between 2010 and 2017. The main determinants of high mortality rates are poor obstetric health services, high fertility rate, high rate of FGME, and early childbearing. Research from the WHO suggests that women who have undergone FGME are significantly more likely to have adverse maternal outcomes and that the risk is greater with more extensive FGM (Banks et al., 2006). There is also regional variation in maternal mortality rates, as shown in Map 3.1, with the most severe cases seen in Lac and Logone Orientale.

Chadian women face significant rates of Gender Based Violence (GBV). The 2014–2015 DHS asked women and men aged 15–49 years if they thought it was justified for a man to beat his wife or partner for the following reasons: if the woman burns the food, if she argues with him, if she goes out without telling him, if she neglects children, or refuses to have sex with him. Almost three-quarters (74 percent) of women and 51 percent of men consider it justifiable for a man to beat his wife or partner for at least one of the five reasons cited. The reason most frequently cited by women and men is if the woman neglects the children. Almost 3 in 10 women (29 percent) reported experiencing physical violence at some time in their lives since the age of 15,

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[13] This is the estimate provided by WHO/WDI as of 2017; the DHS 2014–2015 figure is 860.

TABLE 3.5: Characteristics of workers in formal employment, by gender

| Variable	Men	Women	Difference
Total annual wages in CFAF ,000	1,274.30	1,046.94	227.352**
Wage per hour in CFAF ,000	1,319	1,680	−362*
Number of annual working hours	1,653.21	1,387.42	265.8***
Rural areas	57%	65%	−0.080**
Age in years	36.274	35.997	0.277
Marital status			
Single (never married)	16%	17%	−1%
Married monogamous	69%	44%	25.1%***
Married polygamous	12%	6%	6.8%***
Free union/widowed/divorced/separated	3%	34%	−31%***
Literate	74%	69%	5%
No formal education	46%	42%	4%
Primary education	12%	6%	6.6%***
Secondary education	7%	10%	−3.3%*
Tertiary education	19%	21%	−2%
Sector			
Agriculture	22%	15%	7%**
Livestock/Fishing	3%	0%	2.7%**
Extractive industry	1%	0%	1%
Other industry	5%	5%	−1%
Construction	8%	1%	7.3%***
Commerce	6%	4%	2%
Restaurant/Hotel	2%	4%	−1.7%*
Transportation and communications	8%	2%	5.5%***
Education/Healthcare	17%	33%	−15.8%***
Personal services	6%	14%	−7.8%***
Other services	24%	23%	2%

Note: The value displayed for t-tests are differences in means across groups.
***, **, and * indicate significance at the 1, 5, and 10 percent critical level.

and 15 percent report having suffered acts of physical violence in the preceding 12 months. Physical violence is lowest in Hadjer-Lamis region (3 percent) and highest in Tandjilé region (31 percent). Twelve percent of women have experienced sexual violence at some time, and 6 percent experienced it in the past 12 months. The proportion of women who have experienced sexual violence in the preceding 12 months varies by region, from < 1 percent in Guéra region to 13 percent in Mayo Kebbi Ouest region. Moreover, 7 percent of women report having experienced physical violence while they were pregnant. Almost 3 out of 10 partnered women (29 percent) report having experienced marital violence (physical or sexual) from their husband or partner, with reports highest in Tandjilé region (57 percent). Regional variation in all types of GBV are shown in Map 3.2.

MAP 3.1: Maternal mortality rates, by region
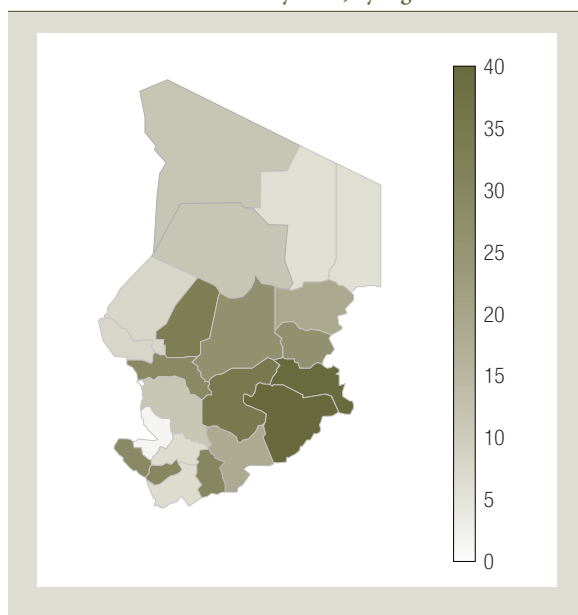
FIGURE 3.6: Maternal mortality rates in selected
Sub-Saharan African countries, 2000–2017
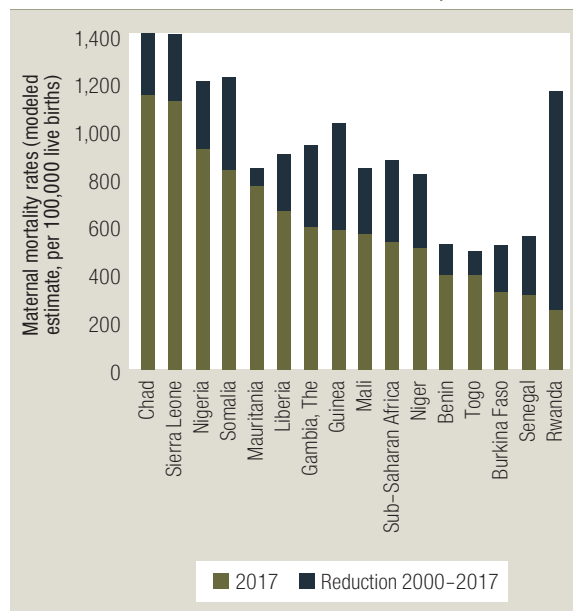
Source: World Development Indicators, 2020.

Conclusion

The gender gap in productivity in Chad is large. The report documents stark gender gaps in agricultural productivity and entrepreneurship incomes when

MAP 3.2: Percentage of women age 15–49 who have suffered physical, sexual, or emotional violence at the hands of their husband or partner, by region
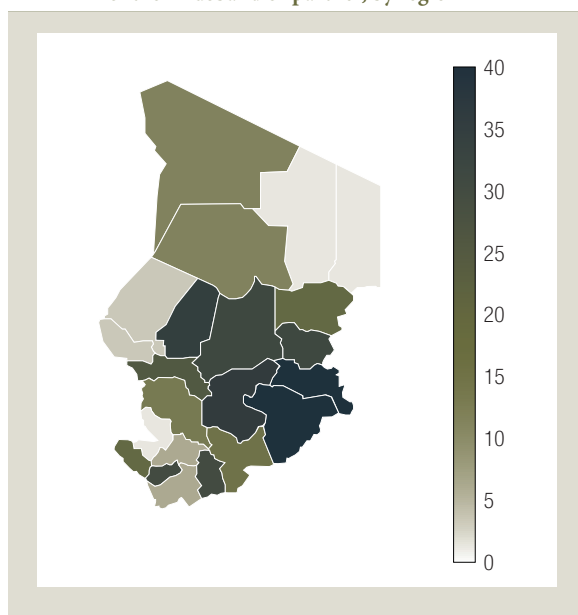
Source: Author's Calculations using DHS data.

considering individual sources of income. Women are significantly less likely to work in formal employment, though those who do earn as much as their male counterparts. The computed gender gaps are larger when compared to other sub-Saharan African countries. For agricultural productivity, O'Sullivan, Rao, Banerjee, Gulati, & Vinez (2014) show that national gender gaps in Ethiopia, Malawi, Nigeria, Tanzania, and Uganda are lower than in Chad, ranging from 23 to 33 percent. In a meta-analysis of gender gaps in entrepreneurship profits from Sub-Saharan Africa, Campos, & Gassier (2017) found that gender gaps ranged from 1 percent in Benin to 73 percent in the manufacturing census in Ghana, with an average gap of 24 percent. To the best of our knowledge, no such systematic work has been conducted recently for wage earnings in sub-Saharan Africa. However, Appleton, Hoddinott, & Krishnan (1999) found wage gaps of 3 percent in Côte d'Ivoire, 25 percent in Ethiopia, and 33 percent in Uganda.

The maternal mortality rate in Chad is the highest in the world at 1,140 per 100,000 births in 2017.[14] The maternal mortality ratio in developing countries was estimated at 239 per 100,000 live births

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[14]   Latest available estimates.

in 2015, compared to 12 per 100,000 in developed countries.[15] The first target of SDG 3 is to reduce the global maternal mortality ratio to below 70 per 100,000 live births by 2030 and that no country should have a maternal mortality ratio greater than twice the world average of 140 deaths per 100,000 live births. This high rate is clearly linked to broader healthcare system failures in Chad, which need to be addressed. Women also face significant rates of GBV.

Women are not worse farmers, entrepreneurs, or workers than men despite lower earnings and productivity. Gender differences in labor productivity are primarily the result of differences in the choices of economic activities between men and women, different endowments and different returns from these endowments due to underlying social and economic constraints as noted in the 2012 World Development Report. Factors holding back women include inadequate access to labor and other productive inputs such as

fertilizer and land, occupational segregation, and lower levels of education. It's crucial with the context of the current pandemic to ensure that the already large gender gaps are not exacerbated: the effects of COVID-19 are likely to be heightened for adult women in Chad, who are more vulnerable to economic shocks than men. Chapter 5 examines likely gender-differentiated impacts of COVID-19 for women farmers, women-owned firms, and in maternal mortality in further detail. Chapter 6 discusses programs and policy options that could improve opportunities with a focus on increasing women's investment in their human capital and encouraging occupational crossover for women in self- or wage employment as well as lessening the economic ramifications of the COVID-19 pandemic for women's economic opportunities.

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[15] World Health Organization (2015).

MACROECONOMIC BENEFITS OF GENDER EQUALITY IN CHAD

Gender equality is a crucial ingredient for growth, requiring targeted policies. Gender inequality in Chad starts early and has economic impacts that go beyond individuals and households and that manifest themselves at the macroeconomic level. For example, gender equality in education can have significant implications for growth due to potential improvements in labor allocation and productivity. Limiting female autonomy through early marriage helps explain the high adolescent fertility rate and the pervasiveness of gender inequalities in education and labor market outcomes.

This chapter first estimates the impact of closing gender gaps with gender-inclusive policies on Chad's GDP. The analysis of gender gaps in the previous sections reveals that the most critical gaps to be addressed are in agricultural productivity and labor force participation. The productivity of plots operated by women is 59 percent lower than that of plots operated by men. The main drivers of this gap are the fact that women farm smaller plots and have less access to farm labor. These differences translate into lower female labor productivity in agricultural production activities. Women also do not cultivate the same crops as men. Since more women work in agriculture than men, addressing this gap is crucial for rural livelihoods as well as for ensuring food safety and security.

In Chapter 5, we also estimate the impact of COVID-19 on gender gaps in detail. The effect of the COVID-19 pandemic on women will be disproportionately higher given the deficiencies in gender equality highlighted in the previous chapters.

Women are over-represented in high-risk sectors such as retail and trade (ILO, 2020). Agriculture, where most Chadian women are employed, is a low-risk sector. However, COVID-19-related restrictions on movement, increased caretaking burdens, increased GBV, and other impacts will hamper women's ability to cultivate the land and engage in other agriculture activities.[16]

The results of the CGE model present robust new evidence that advancing gender equality in Chad will have positive impacts on economic growth. This can increase GDP growth by up to 3.9 percent and per capita GDP growth up to 13 percent. Agricultural policies could even contribute more to GDP growth while performing worse in terms of increasing per capita GDP. Investing in education and health to increase women's enrolment in labor markets and to keep them longer in school would start a demographic transition that could increase per capita GDP significantly.

In what follows, we first describe the data sources and the model used for the analysis. We then present a detailed description of the simulations, followed by an analysis of the simulation results. Finally, we conclude with the main policy messages derived from the results.

Model and Data

The CGE model used for this analysis is a modified version of the MANAGE (Mitigation, Adaptation,

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[16] https://blogs.worldbank.org/developmenttalk/covid-19-pivotal-moment-support-women-farmers.

and New Technologies Applied General Equilibrium) model.[17] The MANAGE model is a recursive, dynamic, single-country competitive CGE model built in-house in the World Bank to analyze various policy questions. The model is based on neoclassical theories of the firm and household behavior. It assumes that firms are profit maximizers and households are utility maximizers. It has some advanced features such as: i) vintage capital, which allows more realistic modeling of capital markets; ii) a detailed production structure to capture substitution and complementarities of different factors of production and energy; iii) a refined demand module to allow for using different demand systems; and iv) multi-output production. Labor or population growth is exogenous in the model,[18] meaning that it is not a result of model simulations. Capital accumulation derives from savings and investment decisions.

The elasticity of female labor force participation (LFP) with respect to health spending, education spending, and social norm index is estimated econometrically. (The details of the estimation can be found in Appendix B.) We also introduce non-labor force participants into the model as the difference between the total population at the 15–64 age cohort and the sum of labor supply to ensure that increases in the labor supply do not exceed the total number of people available to join the labor force.

The relationship between saving rates and dependency rates is explicitly introduced into the model, as suggested by demographic dividend literature. Bloom, Canning, and Sevilla (2003) propose that the age-structure of a population is very important in determining the economic growth impacts of demographic transition. A country can benefit from slowing population growth (i.e., lower birth rates) if the population in the working-age group is higher than the population of dependents.[19] In Chad, the ratio is close to 1, but an overwhelming 95 percent of dependents are below age 14. This means that the old dependency ratio is low, and a decline in birth rates is likely to reduce the young dependency rate quickly, thus creating an incentive to increase household saving more and boost economic growth. To account for such impacts, we assume that savings rates are a function of the old and young dependency ratio. (The full formulation is provided in Appendix B.)

The rest of the model follows the standard model template, as documented in van der Mensbrugghe (2017). In the model, GDP is assumed to grow according to observed rates until 2019, then according to the Macro Poverty Outlook (MPO) projections until 2022, and after that by 2.1 percent, which is the historical average GDP growth for Chad. All other exogenous variables are assumed to grow at the same rate as GDP. The selection of closure rules follows a neoclassical rule, where savings are driven by investment. Government accounts are closed by fixing the share of real government savings in GDP to the baseline values. The rest-of-the-world accounts are closed by assuming a fixed exchange rate, where foreign savings adjust to balance the trade deficit.

The model is calibrated using an engendered 2017 social accounting matrix[20] (SAM) developed for this study[21] and data from the 2018 household survey (the most recent available). The 2017 SAM combines information from the input-output table, government finances, balance of payments, trade, and microdata (household, labor, agriculture, industrial, and other surveys) to give a snapshot of flows between economic agents in a given (base) year. The 2017 SAM is updated from the previously available 2016 SAM using the 2017 Supply and Use Table (SUT), the Government Financial Statistics (GFS) table, and the latest available 2010 Table of Integrated Economic Accounts (TIEA). The household and labor accounts

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[17] The model document is available upon request.

[18] The model tracks the population by age over the whole simulation period based on birth and death rates. This in turn is linked to labor force and household size growth. Birth and death rates are exogenously calibrated to the population data. In the scenarios, expected change in birth rates is introduced exogenously based on the female labor force participation.

[19] https://www.unfpa.org/demographic-dividend.

[20] One caveat is that CGE models use SAMs as a base for calibration, and most SAMs, such as the one used in this study, do not account for unpaid domestic work and care labor in the reproductive economy since they are not covered by a system of national accounts and also due to lack of data.

[21] The SAM is available upon request.

in the SAM are disaggregated using the Harmonized Household Living Standards Survey 2017/2018 to better keep track of distributional and labor market impacts of weak gender inclusion. Households are disaggregated by rural and urban quintiles (10 categories). Labor accounts are disaggregated for each economic sector into eight types by gender, salaried and non-salaried payment, and farm and non-farm work. (Some descriptive statistics from the SAM are given in Appendix D.)

A novelty about the engendered SAM used for this study is the treatment of women in agriculture, for which we split agricultural activities according to the gender of the owner of agricultural plots.[22] The national accounts for Chad consist of food crops, cash crops, and livestock, fishing, and forestry. In most studies in the literature, women are only included as labor, and their ownership of farms is generally ignored. However, findings from the Household Survey suggest that female-owned farms have a very different cost structure than those owned by men. Usually, female-owned farms are less input- and capital-intensive and rely more on labor. To capture this gap, we split the agricultural activities between male and female-owned.

Simulations and Results

Business-as-Usual Scenario

The business as usual (BaU) scenario assumes that the economy will grow in a projected path given the economic structure observed in the initial year (i.e., 2017) and without any policy changes. It assumes that economic growth will be equal to the no-COVID Macro-Poverty Outlook (MPO)[23] forecast of the World Bank (2019) until 2022. The growth rate then follows a steady path where per capita GDP growth steadily increases as population growth slows down (See Figure D.1 in Appendix D). We calibrate the model by adjusting TFP growth. Further, following Britz and Roson (2018), we differentiate TFP growth in agriculture, manufacturing, and services. We assume that TFP in the manufacturing sector will grow faster than in agriculture, while service sectors would lag (Figure D.2 in Appendix D). Consequently, agriculture

will decline to 17 percent of GDP in 2050 compared to 25 percent in 2020, while the share of manufacturing will increase from 27 percent to 45 percent. Meanwhile, services will remain at around 37 percent throughout the simulation period (See Figure D.3 in Appendix D).

The BaU scenario assumes that growth in the main economic indicators will follow GDP growth consistently.[24] Savings are determined by investment; real government savings adjust to balance the government budget, while the share of government spending and investment are fixed as a proportion of GDP. Foreign savings evolve as a constant share of GDP, and the exchange rate is fixed. Population growth is calibrated to replicate population projections in the United Nations Department of Economic and Social Affairs (UNDESA, 2020).

In the absence of policy interventions, employment increases at a steady pace, but the labor force participation (LFP) rate declines slightly for women and by 4.5 percentage points for men by 2050 (Figure 4.2). This LFP decline means that the increase in population is higher than the increase in employment. The underlying reason for this is the substitution of capital for labor as total factor productivity (TFP) increases and benefits both labor and capital productivity. Since TFP growth is higher in the manufacturing sector, which employs more

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[22] Splitting agriculture into female- and male-owned means putting all female-owned plots under one activity and all male-owned plots under another. Thus female-owned farms correspond to all female-owned plots. The link to household income is therefore through factor ownership. When female-owned agricultural production increases, the households that own relatively more of the factors used in those farms (e.g., female labor) receive a higher income. This would reduce the gap within the household to the extent that women can manage their income independently.

[23] World Bank (2019) projects 4.5 and 5.2 percent GDP growth, respectively, in Chad for 2020 and 2021.

[24] The impact of COVID-19 is not introduced into the baseline as the policy scenarios focus on the long term while COVID-19 effects are likely to be limited to the short term, thus requiring a more constrained model setup, where economic agents cannot adjust as easily as in the short term.

FIGURE 4.1: Labor supply, by gender

Source: CGE model results.

FIGURE 4.2: Labor force participation rates (male and female)
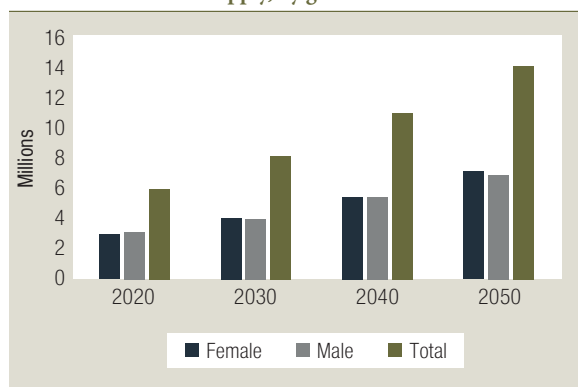
Source: CGE model results.

male labor than female, LFP decline in male labor is steeper. However, since most women are employed in agriculture, their LFP is not affected significantly and even improves slightly after 2035 as labor force growth slows down.

Closing the Agricultural Productivity Gap

This scenario assumes that the productivity gap in male- and female-owned farms is closed. This is achieved by a 15 percent increase in the TFP of female-owned agricultural activities (crop production, livestock, fishing and forestry), which results in an approximately 30 percent increase in the value of production per hectare. New links for the participation of women in the labor market are also activated to make the scenario comparable with the demographic transition scenarios, using the long-term setting for the model and the same closure rules as the BaU scenario.

We assume that closing half of the gap in agricultural productivity will require a 10 percent increase in total government investment. The assumption relies on the estimated elasticity of agricultural productivity with respect to agricultural investment. Since the evidence on the elasticity of labor productivity to government investments in agriculture is scarce at the global level and does not exist for Chad, we estimated it using FAO data[25] as well as a panel data model. Estimation results suggest that closing half the gap in agricultural productivity (i.e., 15 percent) will imply a 10 percent increase in government investment. (See Appendix C for details of the calculation).

We also assume that the TFP of all three female-owned agricultural activities (i.e., crop production, livestock production, and fishing and forestry production) will increase by 15 percent. The source of the increase in TFP[26] is better access to capital (e.g., machinery, irrigation channels, storage facilities, etc.) by women thanks to government investments. Since these investments are likely to take time and, also, because increasing government investment once by 10 percent would not be feasible, we assume that the increase would occur gradually until 2030, over ten years. Since investments are increasing steadily, we presume the TFP increase would also be gradual. An important caveat about the scenarios is that although these investments are likely to produce spill-over effects on other agricultural- and even non-agricultural activities, we ignore these effects to focus the analysis on the agricultural productivity gap.

Closing the agricultural productivity gap will increase GDP by 1.3 percent in 2030 and up to 3.8 percent in 2050 compared to the baseline levels (Table 4.1). Private consumption and government savings are the main drivers of the GDP increase. The former is a direct result of improving incomes while the latter is assumed in the scenario. However, GDP growth continues to increase even after 2030, when

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[25] http://www.fao.org/faostat/en.

[26] Closing the TFP gap implies closing the productivity gap in all factors of production: labor, capital, and land.

TABLE 4.1: Macroeconomic effects, percentage change from baseline

	2020	2030	2040	2050
National accounts				
Per capita GDP	0.1	1.3	2.4	3.8
GDP at constant prices	0.1	1.3	2.4	3.8
Private consumption	0.1	1.4	2.7	4.2
Public consumption	−0.2	−3.7	5.9	14.7
Investment	0.3	2.6	0.5	−0.8
Public investment	0.9	10.0	−10.4	−26.5
Private investment	0.2	1.4	2.3	3.5
Exports	0.0	−0.3	−1.9	−3.2
Imports	0.0	−0.1	−1.5	−2.7
Balance of payments				
Current account balance	0.0	1.2	2.2	3.2
Balance on goods and services	0.0	0.4	0.9	1.5
Labor and demographics				
Employment	0.0	0.3	0.4	0.3
Population	0.0	0.0	0.0	0.0

Source: CGE model results.

the increase in government spending is removed. After 2030 government consumption and private investment leads economic growth. Note that the former benefits to women's LFP through education and health spending increases while the latter improves capital availability.

The increase in agricultural production continues beyond the investment period and reaches 16.4 percent above the baseline level in 2050. Female-owned farms double their production while men-owned farms are hurt by the competition this increase would bring. Most of the increase in agricultural output comes from food crops and livestock production, while manufacturing production declines steadily by up to 3.8 percent by 2050 (Table 4.2). Oil production is one of the most significant contributors to the decline in manufacturing. The driver of this decline is declining manufacturing (and oil) exports. Increasing agricultural production results in domestic prices declining and exports more than doubling. This creates a Dutch disease effect on manufacturing by limiting manufacturing exports. Moreover, the abundance of foreign exchange thanks to agricultural exports makes importing cheaper manufacturing

goods more attractive during the government investment increase period. Consequently, increasing the productivity gap does not cause an increase in economic diversification. Once government investment stops, service imports start to increase as investment demand declines, and imports are mostly determined by consumption.

Female labor supply increases by more than 3 percent compared to the baseline by 2050 as a result of increasing productivity in female-owned agricultural activities (Figure 4.3). This is reflected as an increase in female LFP, which suggests that improving the productivity of female-owned farms also helps with closing the gap in LFP through a 2.7 percentage point increase. However, note that the growth is mostly led by unpaid family farm workers rather than paid farm workers (See Figure D.4 in Appendix D). This implies that most female-owned farms rely on family labor rather than hiring, and thus the real impact on employment is questionable.

Closing the productivity gap between female- and male-owned farms through government investments boosts agricultural production, reduces

TABLE 4.2: Effects of closing the agricultural productivity gap on sectors, percentage change from baseline

	2020	2035	2050
Production			
Agriculture	0.5	8.2	16.4
Food crops	0.4	7.5	16.4
Cash crops	0.2	3.8	3.7
Livestock	0.7	9.2	17.4
Male-owned	−0.8	−15.4	−28.3
Female-owned	3.1	54.0	103.0
Manufacturing	−0.2	−2.4	−3.8
Oil	−0.9	−8.8	−12.3
Services	0.0	1.2	4.4
Exports			
Agriculture	2.0	32.2	109.1
Manufacturing	−1.0	−9.5	−12.8
Oil	−1.0	−9.6	−13.0
Services	−0.3	−0.5	3.7
Imports			
Agriculture	−0.7	−9.6	−26.4
Manufacturing	0.1	1.0	−0.1
Services	−0.3	−3.6	−5.5
Total supply (production + imports)			
Agriculture	0.2	2.8	5.7
Manufacturing	0.1	1.4	1.9
Services	0.0	0.3	2.1
Wages			
Female	0.4	5.6	9.9
Male	−0.3	−1.7	1.8

Source: CGE model results.

food prices, and improves household welfare throughout the country. It also helps address some other gaps, such as LFP, employment, and wages.[27] It helps attract more women to contribute to agricultural production and changes the pattern of agricultural output by making women a more prominent agent in agricultural markets. It also helps increase the production of the services sector thanks to cheaper agricultural intermediate inputs. Last, it is a progressive policy through which the most impoverished urban and rural households benefit most.

These findings come with a vital caveat related to the income of unpaid family labor. The benefits of closing the productivity gap in agriculture for women

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[27] Note that wages for unpaid family work is not a real labor income for individuals but is part of the household income. It is the equivalent of the amount that would have been paid to someone outside the household to do the work done by household members. This means that an increase in unpaid family labor wages implies that a larger part of the agricultural income stays within the household.

FIGURE 4.3: Labor supply by gender, percentage change from baseline
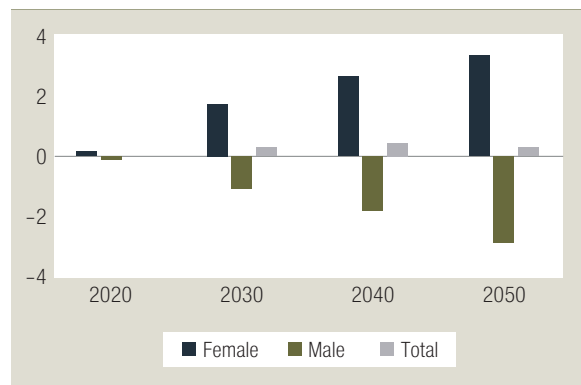
Source: CGE model results.

FIGURE 4.4: Female labor force participation, agriculture scenarios vs BaU
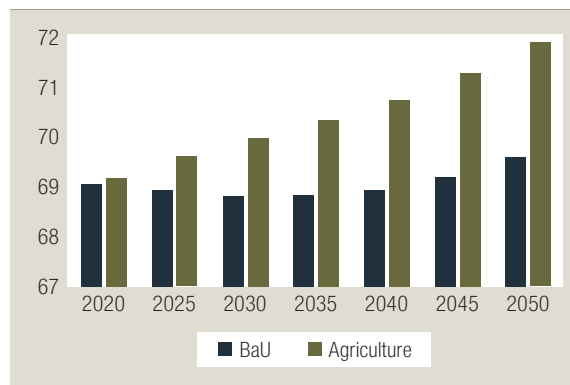
Source: CGE model results.

are generally limited to farmworkers, who are mostly unpaid family members. The income of unpaid family labor is not an individual income but the opportunity cost of the work of household members. Thus, we should be careful not to derive any conclusion about the financial situation of women within the household based on these results. An increase in their labor income does not imply that their share of household income or their influence on spending decisions will increase.

Demographic Transition

In this scenario, increasing public and private spending on health and education starts a demographic transition. Chad has a high birth rate and early childbearing. Critical enablers of high birth rate and early childbearing are low school enrollment, working as unpaid family labor, and not participating in the labor market. Poor educational outcomes for women also prevent them from developing skills required for better jobs and forces them to stay as unpaid family labor or work in low-paying or informal employment. Further, high birth rates imply higher young dependency rates, which eventually causes households to save less as they need to spend most of the household income on taking care of the children. This creates a poverty trap in which new generations of women are also precluded from the education system as well as labor markets.

The scenario assumes that the Government of Chad can break this cycle by increasing spending

on education and health services so as to improve quality and make it more accessible to women. We simulate such a policy by introducing a government subsidy for education and health sectors, which makes these less costly for households and the Government. As a result, private and public demand for health and education services is boosted. Then the newly introduced mechanisms in the model start to increase labor force supply for paid female labor, implying that women join the labor market as paid workers.

The average birth rate starts to decline as more women join the labor force or stay longer in school. The reduction in birth rate is proportional to the number of women entering the labor force. We assume that working women will have half the birth rate on average of women not participating in the labor force or working as unpaid family labor. The new average birth rate is then calculated as a weighted sum. These assumptions reduce birth rates by 0.8 percentage points in 2020. The reduction continues throughout the simulation period, despite slowing down to 0.6 percentage points in 2050, as shown in Figure 4.5.

Declining birth rates cause the child population to decrease over time and increase the saving rates for all household types. However, this effect does not continue indefinitely as the reduction in birth rates also starts to reduce the working-age population (Figure 4.6). The total population declines by 10 percent by 2050, and the drop is in large part due to fewer children. As a result, the young dependency ratio starts declining up to 10 percent by 2050 while the old dependency ratio

FIGURE 4.5: Birth rates
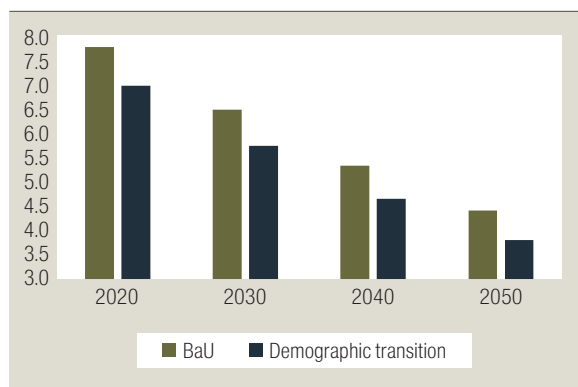
Source: CGE model results.

FIGURE 4.6: Change in population
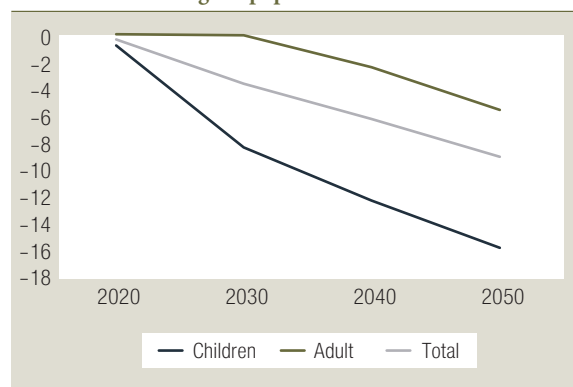
Source: CGE model results.

starts increasing after 2030 and rises by 4 percent. The implication of these changes is an increase in saving rates until 2030 when the old dependency rate is constant, and a decline later as the old dependency rate has a higher impact on saving rates.

The demographic dividend window for Chad lasts until 2045, with non-negative GDP growth rates 1.1 percent higher than the baseline by 2035. The impact of the demographic transition on macroeconomic aggregates is shown in Table 4.3. A reduced fertility rate is the main driver of the high per capita GDP growth; when compared with the results of the agricultural productivity scenario, this suggests that lowering persistently high fertility constraints would significantly help with poverty reduction efforts, as suggested by Beegle and Christiaensen (2019). Private investments are the main engine of growth as savings rates remain higher than the BaU scenario until 2035.

The decline in household demand due to the accelerated decline in population growth is the main contributor to a drop in GDP growth rates after 2035. The second most important contributor to the slowdown in GDP growth is manufacturing exports, which decrease as much as 7.2 percent by 2050. The decreasing working-age population is the reason for the decline in exports. Note that the manufacturing sector is the least benefiting sector from the boost in female labor force participation as female employment in manufacturing is low.

Service sector output and exports increase as service activities can take advantage of increasing female labor supply. On the other hand, the increase in agricultural output is insignificant, and exports suffer for most of the simulation periods (Table 4.4). This is due to the shift of female labor from unpaid farm labor to paid labor as a result of the scenario's assumptions. The small increases in agriculture are mostly demand-driven since

FIGURE 4.7: Dependency ratio
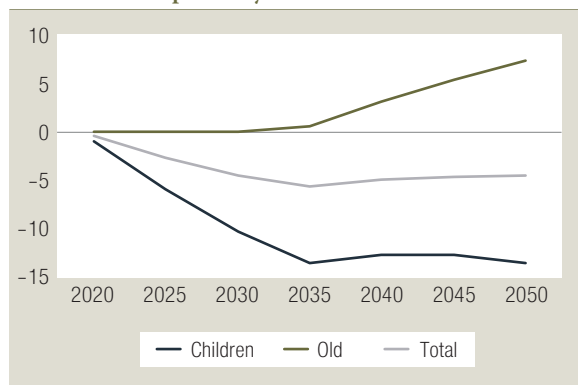
Source: CGE model results.

FIGURE 4.8: Average saving rates
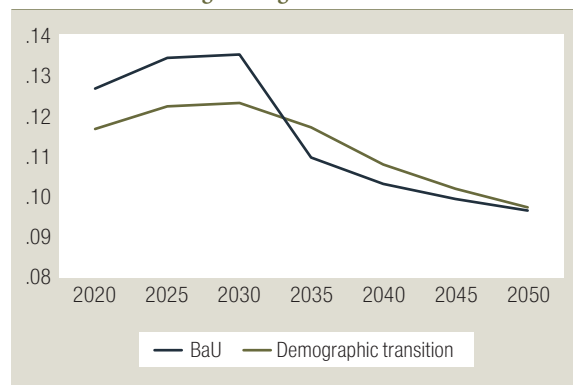
Source: CGE model results.

TABLE 4.3: Macroeconomic effects of demographic transition, percentage change from baseline

	2020	2035	2050
National accounts			
Per capita GDP	0.1	6.0	8.8
GDP at constant prices	−0.3	1.1	−0.2
Private consumption	−0.6	3.7	1.5
Public consumption	5.4	5.6	2.2
Investment	5.9	−1.2	−0.3
Public investment	−0.3	1.1	−0.5
Private investment	7.1	−1.6	−0.2
Foreign investment	0.0	1.1	−0.5
Exports	−5.3	−5.9	−7.2
Imports	1.1	−0.2	−1.8
Balance of payments			
Current account balance	0.0	1.1	−0.5
Balance on goods and services	24.3	31.1	38.8
Labor and demographics			
Employment	0.2	0.3	−4.5
Population	−0.4	−4.9	−9.0

Source: Authors' calculations. CGE model results.

TABLE 4.4: Sectoral impacts of demographic transition (percentage change from baseline)

	2020	2035	2050
Production			
Agriculture	−0.2	0.7	0.2
Food crops	−0.2	0.1	−0.1
Cash crops	−1.0	2.9	−0.4
Livestock	−0.2	1.2	0.7
Male-owned	−0.3	0.7	0.3
Female-owned	−0.2	0.5	0.1
Manufacturing	−2.0	−1.0	−3.3
Oil	−6.1	−5.7	−7.7
Services	0.7	2.9	1.1
Exports			
Agriculture	−1.2	−6.0	1.2
Manufacturing	−7.3	−6.3	−8.1
Oil	−7.3	−6.3	−8.1
Services	−7.0	3.4	2.3
Imports			
Agriculture	−1.3	7.5	0.4
Manufacturing	2.5	0.7	0.1
Services	−1.5	−1.8	−4.1
Wages			
Female	4.9	5.6	10.1
Male	3.4	5.0	9.6

increasing per capita income implies less food demand for most household types. Total supply of commodities is driven by the demand side as well, increasing until 2035 but starting to decline as population growth slows, implying smaller total consumption but a significant increase in per capita consumption given the decline in population. Last, as labor becomes more and more scarce, wage rates for men and women increase steadily. The increase is higher for women, with 51 percent by 2050 compared to 45 percent for male labor.

The increase in female labor force participation, especially before 2035, and the increasing wage rates close the gender gap in incomes and wages significantly. This increases the labor income of all households but more for richer households, which are more likely to be the suppliers of paid female labor. Changes in household welfare vary over time and household type. Poorest rural households, which mostly rely on unpaid family labor, are worse off in the short run while they benefit the most in the long run. The rural rich are slightly better off in the short run but

benefit less in the long run. Urban households follow a similar pattern but see slightly less improvement in welfare in the long run.

Conclusion

Chad's economic benefits from reducing the gender gap are substantial. Relative to a baseline scenario calibrated to be consistent with actual outcomes through 2019, the simulations of three policy scenarios yield plausible results about GDP, sectoral GDP, and household gains until 2050. The combined effect of closing gender gaps in education and agricultural productivity as well as reducing fertility increases per capita GDP growth by up to 13.5 percent by 2050

compared to baseline levels, resulting in a rate of

FIGURE 4.9: Female labor force participation

Source: CGE model results.

policies is progressive, benefitting rural households

FIGURE 4.10: Labor incomes
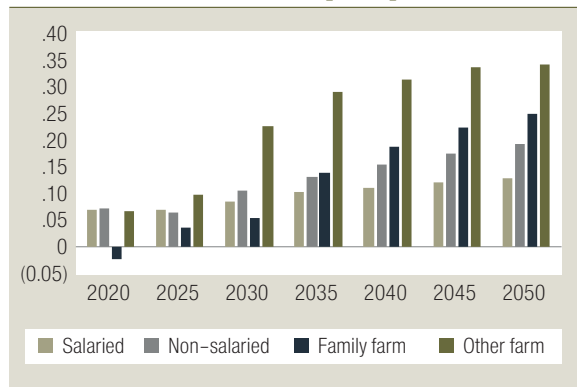
Source: CGE model results.

return to investment of 9 percent per year. The results suggest that persistently high fertility constrains poverty reduction efforts, as suggested by Beegle and Christiaensen (2019). These benefits are lower-bound estimates as they are the result of closing the two most essential gaps but do not include what greater gender inclusion might achieve. The overall impact of the
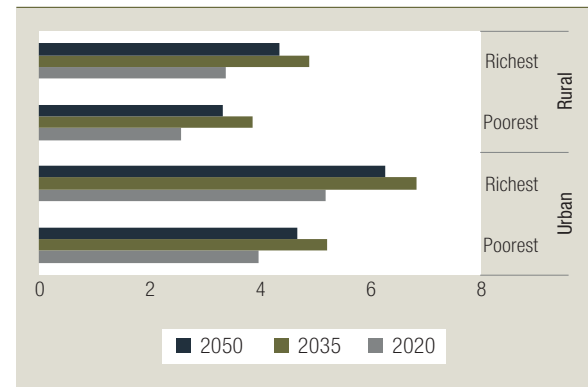
more than urban ones. Closing the productivity gaps in agriculture would perform less well in terms of per capita GDP increase but could contribute significantly to food crop and livestock production. Investing in education and health would start a demographic transition and increase per capita GDP growth significantly.

IMPACT OF COVID-19 ON GENDER EQUALITY AND ECONOMIC OPPORTUNITY

Given underlying gender inequalities and the pre-existing labor structure, the economic, human capital, and social impacts of COVID-19 are expected to affect women more than men. For example, globally, women work more on average in high-risk sectors (ILO, 2020) and are therefore more likely to be affected by the pandemic. Beyond economic impacts, COVID-19 can disproportionately affect the health, education and voice and agency of women through different channels, including increased unpaid care work, reallocation of healthcare resources, and increased gender-based violence during lockdown (UN Women, 2020).

This chapter discusses the possible impact of COVID-19 in Chad in three sections focusing on different outcomes: i) macroeconomic, sectoral, and labor market impacts; ii) health and educational outcomes (endowments); and iii) gender-based violence (GBV), including FGME. The first section uses the CGE model from Chapter 4 and follows Djiofack et al. (2020) to simulate the possible effects of COVID-19 pandemic on Chad's economy in order to analyze the impacts of the economic and labor markets on women. The two remaining sections revisit the literature on past pandemics as well as current discussions to assess the potential channels and outcomes of such impacts. As part of the analysis on policy options for closing gender gaps in Chad, Chapter 6 highlights possible policy responses to mitigate some of these impacts.

Macroeconomic, Sectoral, and Labor Market Impacts of COVID-19

Calderón et al. (2020) assumes that the main impact of a pandemic consists of the behavioral changes caused by fear of exposure to disease as people avoid interactions with markets to the extent possible. The direct effects of the disease (i.e., morbidity and mortality) are clearly essential but unlikely to have any significant macroeconomic implications. Avoidance of market interaction during the pandemic will affect the economy through decreased labor supply, labor productivity, capital productivity, and a slowdown in the transportation and tourism sectors. Besides, Calderón et al. (2020) assumes a global increase in trade and transportation margins, decreased flow of foreign exchange, and plummeting commodity prices.

As in Calderón et al. (2020) and Thomas et al. (2015), the change in the variables during the 2014–2016 Ebola crisis in Sierra Leone is used to quantify the impact of the pandemic. We control for the effects of commodity price crises during the same period by comparing the changes in the rest of West African countries in the same way and making necessary adjustments to account for commodity price crises. Lastly, we adjust the estimated impacts for Sierra Leone according to the Epidemic Preparedness Index of Chad and Sierra Leone. The shock sizes are given in Table 5.1.

TABLE 5.1: Estimated impact of COVID-19 pandemic on main impact channels

Impact Channel	Shock Size (%)
Labor supply	−2.2
Labor productivity	−6.2
Capital productivity	−2.1
Trade and transportation margins	2.7
Foreign exchange flows	−33.2
Commodity prices	
Oil	−30.0
Minerals	−10.0
Tourism	−25.0

Source: Authors' calculation following Calderón et al. (2020).

The CGE model simulation results suggest that the COVID-19 pandemic will reduce GDP growth by 9 percent (Table 5.2) from the BaU level of 4.5 percent, causing Chad's economy to shrink by 4.5 percent. A reduction in private consumption is the main driver of this loss, although all final demand would be affected significantly as government consumption and investment would decline by 9 percent, private

investment by 5 percent, and exports by more than 12 percent. The reduction in imports would be much higher at 21 percent, reflecting the dependence of Chad on export revenues and foreign exchange flows to be able to import. This significant drop would help reduce the current account deficit by almost one third (Table D.2 in Appendix D). However, the negative impact of the pandemic on macroeconomic balances does not cause a significant long-term impact except for exports and imports, which will also decline in 2021. However, this conclusion relies on the assumption that the pandemic will be under control by the end of 2020 and will not cause harm beyond. The results suggest a V-shaped recovery for Chad, but the impact causes a significant and long-lasting change in the structure of the economy beyond 2021.

The production pattern of the Chadian economy will shift significantly toward agriculture due to COVID-19, with the manufacturing sector recovering only in 2024 and service sectors suffering from production losses until 2025. However, this does not imply an increase in total supply (i.e., imports + domestic production) of food commodities. On the contrary, the total supply of agricultural products

TABLE 5.2: Macroeconomic impacts of COVID-19 (percentage change from baseline)

	2020	2021	2022	2023	2024	2025
National accounts						
GDP at constant prices	−9.0	−0.1	−0.1	−0.1	0.0	0.0
Private consumption	−14.9	−0.3	0.0	0.0	0.0	0.0
Public consumption	−9.0	−0.1	−0.1	−0.1	0.0	0.0
Investment	−5.1	0.3	−0.2	−0.1	−0.1	0.0
Public investment	−9.0	−0.1	−0.1	−0.1	0.0	0.0
Private investment	−4.3	0.4	−0.2	−0.1	−0.1	0.0
Exports	−12.6	−2.2	−0.7	−0.3	−0.1	−0.1
Imports	−21.7	−1.7	−0.5	−0.2	−0.1	−0.1
Balance of payments						
Current account balance	−33.20	0.00	0.00	0.00	0.00	0.00
Balance on goods and services	−10.35	0.00	0.00	0.00	0.00	0.00
Labor market						
Employment	−5.56	−0.04	−0.01	−0.01	−0.01	−0.01
Population	0.00	0.00	0.00	0.00	0.00	0.00

Source: CGE model simulation results.

TABLE 5.3: Sectoral impacts of COVID-19 (percentage change from baseline)

	2020	2021	2022	2023	2024	2025
Production						
Agriculture	1.61	0.99	0.47	0.20	0.05	0.00
Food crops	0.48	0.37	0.21	0.12	0.07	0.04
Cash crops	−25.37	−4.52	−2.87	−1.82	−1.12	−0.64
Livestock, fishing, & forestry	5.09	2.19	1.05	0.44	0.10	−0.01
Male-owned	0.61	0.33	0.00	−0.07	−0.09	−0.02
Female-owned	3.64	2.34	1.43	0.73	0.32	0.03
Manufacturing	−13.22	−1.53	−0.65	−0.31	−0.14	−0.08
Oil	−28.79	−5.08	−1.91	−0.83	−0.32	−0.16
Services	−3.22	−0.28	−0.24	−0.12	−0.08	−0.06
Exports						
Agriculture	25.84	5.51	2.42	1.09	0.36	0.11
Manufacturing	−34.96	−5.92	−2.18	−0.94	−0.36	−0.18
Oil	−35.32	−6.01	−2.21	−0.96	−0.37	−0.18
Services	18.63	−2.58	−0.96	−0.43	−0.21	−0.13
Imports						
Agriculture	−75.55	−0.78	−0.14	−0.16	−0.14	−0.14
Manufacturing	−16.60	−0.70	−0.38	−0.16	−0.09	−0.06
Services	−32.52	−3.69	−0.86	−0.39	−0.17	−0.10
Total supply (production + imports)						
Agriculture	−7.85	0.10	0.08	0.01	−0.02	−0.03
Manufacturing	−9.86	−0.18	−0.18	−0.10	−0.06	−0.05
Services	−8.46	−0.76	−0.32	−0.16	−0.09	−0.06
Wages						
Female	−56.07	0.46	0.08	0.03	−0.01	−0.04
Male	−60.94	−1.49	−0.76	−0.35	−0.17	−0.10

Source: CGE model simulation results.

will decline by 7.85 percent, putting the livelihoods of rural communities and poor urban households in danger since such decline has severe implications for food safety and security (Table 5.3.). The increase in agricultural production would be due to skyrocketing exports and would not be sustained in the long run. Agricultural exports would increase to balance the current account deficit under increasing pressure from foreign exchange flows. The most important sources of disruption to foreign exchange flows would be plummeting commodity exports and declining foreign savings. This would create a reverse Dutch disease for Chad, under which the most crucial sectors of the economy can expand.

Simulation results suggest that aggregate food crop production will increase. The increase would be primarily driven by male-owned farms while the production of female-owned farms would decline. On the other hand, female-owned livestock, fishing, and forestry activity expands almost by 25 percent during the crises, which results in an increase in the total production of livestock, fishing, and forestry

FIGURE 5.1: Change in wage rates (percentage difference from baseline)

Source: CGE model results.

FIGURE 5.2: Change in employment
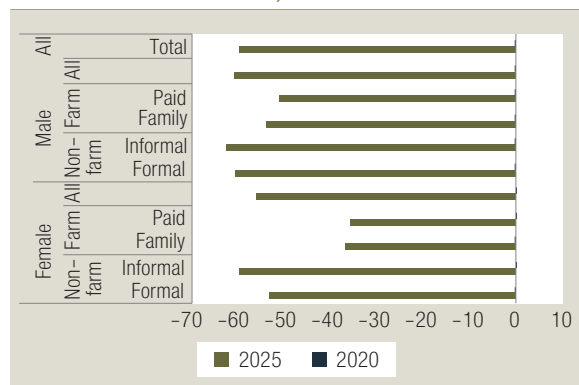
Source: CGE model results.

activities as well as in the production of female-owned agricultural activities.

Capital-intensive cash crop production is likely to suffer a longer-term impact from the COVID-19 pandemic, while food crop and livestock production will increase. The driving force behind this asymmetrical impact between food and cash crops is slowing economic activity in urban areas (e.g., productivity losses and declining export demand), which would result in a significant decline in intermediate demand for cash crops. Food crops and livestock production would increase in response to plummeting imports.

Changes in the composition of agricultural production suggests that female-owned farms can play a key role for food stability during and in the aftermath of the pandemic. As shown in Chapter 3, much of the gender gap in agricultural production is due to a difference in endowments, and women-owned farms use fewer inputs. This may allow women farmers to expand production since they are less affected by higher input prices and the shortage of capital. However, this finding should be taken with the caveat that the model assumes that women can expand their farms as long as market conditions allow them to do so. Given the agency of women in Chad, this may be challenging for most women. During the 2014–16 West Africa Ebola outbreak, which restricted movement, women's agricultural productivity was affected, resulting in women defaulting on less negotiable village loans, further impacting their long-term economic prospects

(Korkoyah and Wreh, 2015). Chapter 6 details policy recommendations for protecting women's agricultural production during the crisis and lessen this difference in endowments.

The COVID-19 pandemic is likely to reduce female labor force participation by more than 3 percent. The CGE model simulations results indicate that the participation rate bounces back to baseline levels in 2021 (Figure 5.3). However, the decline in female LFP is not uniform across different female labor types. The loss is higher in percentage terms for salaried and informal non-farm (i.e., services and manufacturing) female labor. However, in absolute terms (i.e., the level difference in female LFP from the baseline), the drop in the female LFP of farmworkers is higher. Preliminary evidence from a World Bank Enterprise Survey in Chad (World Bank, 2020e) has demonstrated that the proportion of women as a fraction of all permanent full-time workers has decreased by 6.6 percent, driven by a steep change in medium-sized enterprises. Inevitably, more women will lose their jobs compared to men, particularly in services sectors, where most women are employed in urban areas (Figure D.5 in Appendix D).

Further, it is critical to note that formal employment among women is low as only 8.6 percent receive wages from an employer and that women are 9 percent less likely than men to be in formal employment. The challenge of targeting social protection programs and other government services to those working in the informal sector can leave women more vulnerable to shocks.

FIGURE 5.3: FLFP index (2009=1)

Source: CGE model results.

FIGURE 5.4: FLFP level change from BaU
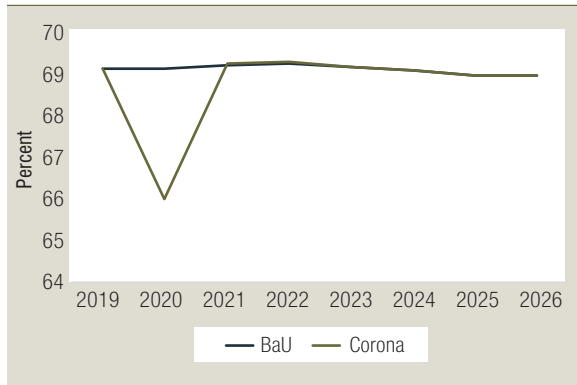
Source: CGE model results.

The impact of the COVID-19 pandemic on labor markets is potentially disastrous. Wage rates may decline by around 60 percent on average, with a 50 to 60 percent decline for women and a 45 to 65 percent decline for men (Figure 5.1). Total employment may fall by more than 6 percent, as shown in Figure 5.1. Consequently, the labor income of households may decline by 63 percent on average, with urban households hit harder. Expansion in female-owned farm production compensates losses in the income of rural households, as shown in Figure 5.3. The decline in earnings of women in urban areas is slightly less than men during the crisis, but note that women may remain below BaU levels until 2025 and possibly beyond. The smaller decline is not surprising given the already existing gaps in earnings, but the more prolonged impact on wages implies widening pay gaps. Female labor in rural areas would be less affected thanks to increased agricultural activity. Note that wages for unpaid family labor are part of the farm income that are not paid to someone outside the home to do the work done by family members. Thus, a smaller decline in unpaid family labor wages implies a more modest reduction in agricultural incomes.

Increased gender inequality in unpaid care work is a critical mainstay of the COVID-19 impact on women. Globally, women spend three times longer on unpaid care and domestic work than do men (UN Women, 2020), and this gap exists even when controlling for labor force participation. Past studies of the Ebola and Zika viruses show that women bear the brunt of care work. A rapid gender analysis conducted

in West Africa including Chad during the initial stages of COVID-19 (CARE, 2020) revealed more family members spending more time at home, more access to formal and informal child and elderly care networks, and absence of domestic workers, especially in urban areas; the gender gap in care work is thus expected to increase significantly. The increase in care and domestic work can potentially decrease the productivity of female workers and entrepreneurs still able to continue working in formal and informal employment while social distancing.

To sum up, the COVID-19 pandemic will have a disproportionately higher negative impact on women. The results suggest that more women than men working in paid jobs might lose their jobs. The situation is potentially dire, especially in services sectors, where most women are employed in urban areas. In rural areas, farms owned by women will be less affected. These results are mainly driven by gender-related dynamics. The significant pay gap and employment rate of women results in a lower contribution to sector value-added. Further, lower productivity compared to men also makes women a less favorable substitute for other factors of production (i.e., male labor or capital). Eventually, women could become easily substitutable with other factors of production during the time of crisis. The advantage of women in agriculture is also mainly due to their low reliance on modern inputs. As imports are squeezed, inputs such as fertilizer and pesticides will become inaccessible. This will have a higher impact on male-owned farms, making women relatively better-off, but

such an effect will not make women farmers better-off compared to the baseline.

Potential Impact of COVID-19 on Girl's and Women's Health and Education

COVID-19 is likely to have significant impacts on girl's and women's health outcomes, especially their unique needs in reproductive health. The shift in public health resources to address the health ramifications of COVID-19 could cause disruptions to key health services for women and girls such as reproductive health services. In similar crises, evidence has shown increases in adolescence pregnancy for out-of-school girls and rises in maternal mortality due to lack of resources for these services. The number of women who died in childbirth in West Africa increased by 70 percent during the Ebola crisis as resources were diverted to Ebola response efforts (Smith, 2019).

Women's roles as home and family caregivers as well as their larger presence in the health sector makes them more exposed to contagion. Compared to men, women's share of representation in front-line health staff roles such as community health workers, nurses, and birth attendants leaves them vulnerable to increased levels of exposure. Across Africa, 65 percent of nurses are female (Boniol et al., 2019). During the Ebola outbreak in Nigeria, nurses and traditional birth attendants were not provided with the same amount of protective gear as were male doctors (Fawole et al., 2016), illustrating the potential for gender-differentiated exposure in the health sector.

Evidence from previous pandemics reveals long-lasting impacts on girls' school enrollment and their adoption of risky behaviors. Rates of child marriage and childbearing among adolescent girls is high in Chad. During the 2014 Ebola epidemic in Sierra Leone (Bandiera et al., 2019b), there is evidence that girls spent an additional 1.3 hours per week with adult men than they did prior to the crisis. For communities that were severely disrupted by the epidemic, girls were also twice as likely to become pregnant compared to girls in less-affected communities, which increased their likelihood of dropping out of school and never returning. The pandemic has the potential to interrupt adolescent

girls at a critical juncture in their life trajectory, further contributing to gender inequality.

Disruption in schooling and in school services during COVID-19 pandemic has the potential to exacerbate gender gaps in learning outcomes. As discussed in Chapter 2, although gaps in school attendance have narrowed, Chad has notable gender gaps in learning outcomes. Increased household chores due to COVID-19 and gender gaps in access to information and technology can disrupt education and learning at home. In fact, digital technologies are emerging as a policy lever to enable children globally to access education services around the globe, accelerating connectivity and promoting online learning for rural areas. World Bank assessments of the Ebola crisis and recovery efforts in Sierra Leone demonstrated that providing educational radio programs during school closures helped link children to education services despite challenges such as poor signal coverage and low levels of access to radios in some areas. In Chad, existing gender inequalities in access to digital resources may hinder girls from accessing these useful resources, though complementary policies to enable access for girls can mitigate the potential for gender-differential access.

Gender-Based Violence

The pandemic will likely put women at greater risk of gender-based violence (GBV), particularly intimate partner violence (IPV). Drawing upon learning from regional (Ebola, Zika) and global pandemics (H1N1, HIV/AIDS) Peterman et al. (2020) discuss at length the direct and indirect linkages between pandemic and GBV, including economic and poverty-related stress, isolation, reduced availability and access to external help such as safety support services and legal systems, inability to temporarily escape abusive relationships, exploiting financial dependence for virus-related healthcare, exposure to exploitation through response efforts, and violence against healthcare workers. Although exposure to certain types of violence such as sexual harassment at work could decrease during COVID-19 and violence by teachers upon girls at school, violence by spouse or other male members of the family is likely to increase. Data on GBV is globally

under-reported and especially so in Chad, where violence in many of its forms is not considered harmful according to traditional practices and customary rules. DHS 2014–15 reports that the proportion of currently or once-partnered women aged 15–49 years experiencing IPV or sexual violence at least once in their lifetime is 28 percent in Chad.

Efforts toward eliminating FGME will be disrupted because of the COVID-19 pandemic, and additional girls will be subjected to this type of violence (UNFPA, 2020). As discussed in Chapter II, prevalence of FGME is high in Chad (38 percent of women). Social distancing and lockdowns restrict some of the most effective ways of preventing FGME such as community empowerment programs and discontinuation proclamations, which required group gatherings (UNFPA 2020). It is uncertain if economic uncertainty or school closures will result in an FGME incidence caseload. UNFPA estimated that one-third

of progress toward ending FGME by 2030 will be overturned globally due to the pandemic, leading to 2 million more FGME cases through disruption in prevention services. Although country-specific estimates are not available, it can be hypothesized that efforts towards FGME reduction will be impacted through similar channels.

While the benefits of gender equality to Chad's economy are clear, the COVID-19 pandemic threatens to exacerbate gender gaps, putting at risk the potential economic growth closing the gaps can bring. Along with ramifications for women's health outcomes, women's agricultural production and labor market outcomes stand to worsen as the pandemic continues to spread globally. Macroeconomic analysis suggests steep impacts on labor markets and female labor force participation. Chapter 6 explores policy recommendations for closing the gender gaps and mitigating the impacts of the pandemic.

POLICY RECOMMENDATIONS

This chapter has two objectives: (i) To suggest policy options for tackling the issue of gender inequality for girls and women; and (ii) To provide illustrations of programs that are making a difference in Sub-Saharan Africa and elsewhere. Relying on a review of the literature and various data sources, the chapter considers policies that could help achieve gender equality. The first section provides an assessment of Chad's efforts in promoting gender equality, while the second section considers programs and policies that could reduce gender gaps for girls and then for women.

Chad's Efforts in Promoting Gender Equality

State of Chad's Legal and Regulatory

Chad has ratified many international conventions on human rights and those promoting equal opportunities for all. In 1979, the Government ratified the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW). It also committed to promoting gender equality (SDG5) under the Sustainable Development Goals. At a regional and sub-regional level, important commitments have been made, including those listed in Table 6.1.

At the national level, Chad remains committed to gender equality, empowerment of women, and prohibition of child marriage. For example, the Labor law (Law 038) prohibits promotion, salary, training and hiring decisions based on gender, age, and nationality.

Professional married women can join a labor union and participate in its leadership without their husband's permission. Moreover, the factors considered in calculating remunerations must be the same for men and women. In addition, the legal minimum age of marriage is 18, and even the consent of a child younger than this age does not justify the marriage. Anyone who violates this law may face 5 to 10 years' imprisonment and a fine of CFAF 500,000 to 5,000,000.

The Ministry of Women, Child protection, and National solidarity has been restructured; however, institutional capacity remains weak. A General Directorate for Women and Gender Equity was created along with three technical directorates in charge of socioeconomic promotion of women, gender equity, and legislation and women's rights. The Ministry also oversees the National Chadian Women's Week (SENAFET), where women empowerment activities are promoted at national and regional levels. However, institutional capacity and coordination remain weak. However, gender focal persons identified to coordinate the Ministry's activities with other ministries and NGOs lack the expertise to deliver.

Budget allocation to the Ministry is the lowest among social sectors. In the last few years, only 2.5 percent of total social spending has been allocated to the Ministry, as shown in Figure 6.1. Since the economy started recovering from the oil price shock in 2017/2018, resource allocation to environment and fisheries have increased by almost 10 percentage points while the Ministry saw a decrease of 1 percentage point (see Figure 6.2). This weak budget support has

TABLE 6.1: Chad's international commitments on gender

Protocol	Commitment
African Platform for Action (1994)	Forge a new ethic for sustainable development based on the equal and active participation of women, men, and young people as agents of change at family, community, national, and international levels.
Beijing Declaration and Platform for Action (1995)	Ensure the full implementation of the human rights of women and of the girl child as an inalienable, integral, and indivisible part of all human rights and fundamental freedoms.
African Charter on Human and Peoples' Rights on the Rights of Women in Africa (2003)	Eliminate every discrimination against women and ensure the protection of the rights of women as stipulated in international declarations and conventions.
Solemn Declaration on Gender Equality in Africa (2004)	Ensure the full and effective participation and representation of women in peace processes, including the prevention, resolution, and management of conflicts and post-conflict reconstruction in Africa as stipulated in UN Resolution 1325 (2000), and appoint women as Special Envoys and Special Representatives of the African Union.
African Union Gender Policy (2008)	Advocate the promotion of a gender responsive environment and practices as well as the enforcement of human rights, gender equality, and women's empowerment commitments made at international, continental, and Member State level.
Women's Empowerment and Development Toward Africa's Agenda 2063 (2015)	Enhance women's access and full inclusion in agriculture and agribusiness both as contributors and beneficiaries. Also enhance women's access to health, participation in governance, conflict prevention and peacebuilding, and access to education, science and technology.

Source: Authors.

limited gender promotion initiatives while delaying the implementation of projects in favor of gender equality.

The National Development Plan (PND 2017–2021) aims to improve the quality of life for women and female adolescents by strengthening access to high-quality health services. The PND will also improve nutrition for women and children while promoting the empowerment of women and young girls. The issue of property rights will undergo substantial reform, which will consider the concerns of the various communities in the country and put an end

to the exclusion of women from access to property and productive assets.

The Government has also taken several policy measures and actions against Gender-Based Violence (GBV). Following the UN's strategy to end violence against women, the Government launched a National Campaign titled United to end Violence against Women and Children in October 2009. The main objective was to prevent and eliminate violence against women in order to establish a true culture of peace within communities and households. The campaign,

FIGURE 6.1: Social sector as percentage of total social budget
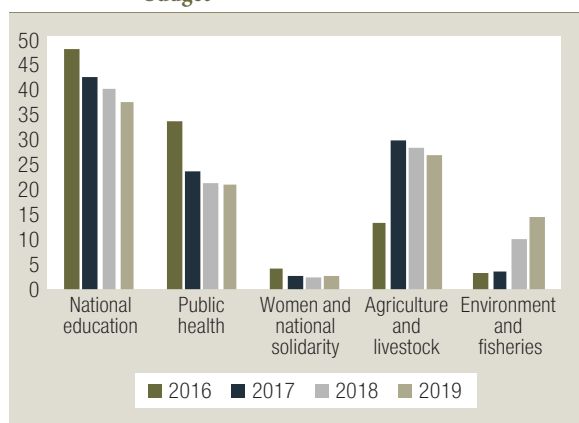
Source: Chad Public Expenditures Study (2019).

FIGURE 6.2: Social sector as percentage of total social budget (2019)
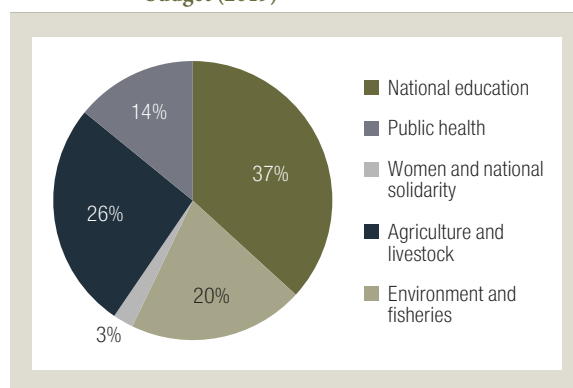
Source: Chad Public Expenditures Study (2019).

which ended in 2015, led to the establishment of a national mechanism to protect women's and children's rights. It also produced a national strategy to combat GBV, which identified the roles of different ministries, religious institutions, development partners, and civil society.

Assessing Chad's Legal Framework for Women's Work

An assessment of laws as they pertain to women's employment, earnings, and other opportunities shows that the legal and regulatory framework works against gender equality in two ways, through: (i) restrictions on women's employment and their access to institutions in Chad; and (ii) the absence of laws against discrimination based on gender. This assessment was conducted for Chad and 180 other countries under the Women, Business, and the Law program at the World Bank. The dataset identifies barriers to women's economic participation and encourages the reform of gender-differentiated laws across seven indicators (see Box 6.1 on the data collection methodology). To understand where laws facilitate or impede women's economic participation, Women, Business and the Law 2018 provides scores for each of seven indicators. These scores are obtained by calculating an unweighted average of scored questions within that indicator and scaling the result from zero to 100.

Scores for Chad show that despite progress toward gender equality over time, legal barriers to women's employment and entrepreneurship persist. Out of a maximum score of 100 for each area, Chad scores an average of 66.25, up 6.25 points from its score of 60 in 2009. This is 3.38 points lower than the average score for Sub-Saharan African (SSA) economies and 29.28 points lower than the average score for high-income OECD economies. Chad is also below the SSA average in six of the seven areas, with the exception being providing incentives to work. However, in practice, such incentives apply typically only to formal sector workers, a minority in Chad, especially for women.

While women can travel outside their homes and countries and apply for passports in the same way as men, they continue to face restrictions in choosing where to live. The Going Places indicator examines constraints on women's agency and freedom of movement. Chad applies the 1958 version of the French Civil Code. According to Article 215, "The choice of residence for the family belongs to the husband; the woman is expected to live with him, and he is required to receive her." When women cannot independently decide where they wish to go, travel, or live, they may face difficulty getting to work or conducting business transactions, which limits their economic participation.

Chad prohibits sexual harassment at work; however, women still cannot obtain employment in the same way as men. In 2017, Chad amended its penal code to prohibit sexual harassment in employment and introduced criminal penalties for such harassment. Protection from discrimination in employment is also in place. However, women are unable to get jobs in the same way as men. Article 223 states that women may exercise professions separate from their husbands so long as their husbands do not object. Such limitations

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BOX 6.1: METHODOLOGY FOR WOMEN, BUSINESS, AND THE LAW DATA

Legal data are collected based on responses from local legal experts including lawyers, judges, academics, and members of civil society organizations working on gender issues. The data and responses are verified against codified sources of national law such as criminal codes, labor laws, and legislation on violence against women, domestic violence, sexual harassment, gender equality, and non-discrimination. The legal data are based on statutory or codified laws and regulations for civil and common law systems as well as on case law, which in common law systems is set by judicial decisions that set binding precedents. To ensure comparability between countries with different and plural legal systems, the data is based on the law applicable to the main business city in the country, and customary and religious law is not accounted for unless it has been codified or upheld by binding case law. In some places, customary law may exist in parallel with formal legal regimes and may differ and sometimes undermine the protections granted by the statutory legal system.

on married women's legal capacity weakens their decision-making power. Requiring permission to work or permitting wives to be fired when the husband decides it is in the family's best interest weakens women's agency and reinforces stereotyped behaviors for women and men. Where such inequalities exist, fewer women work.

The 1996 labor code guarantees equal remuneration for work of equal value and allows women to work the same night hours as men. However, certain jobs are still off-limits for women. The Getting Paid indicator measures laws affecting occupational segregation and the gender wage gap. While the Labor Code guarantees equal pay for equal work, it also allows an advisory committee to the Ministries of Labor and Security to determine the work or industries that are prohibited to women because of risks to "their health, their safety, or their morality." Prohibited sectors and occupations limit the range of jobs that women can hold and can lead to occupational segregation or confinement of women to low-paying industries. In fact, many of the jobs prohibited for women are in highly-paid sectors, such as mining and manufacturing. This has real implications for their earning potential, as we saw in Chapter 3.

Married women are not legally required to obey their husbands and can obtain a judgment of divorce in the same way as married men. However, restrictions persist in terms of their ability to become head of household, address domestic violence, and remarry. The Getting Married indicator assesses legal

constraints related to marriage. Chad receives a score of 40 in this indicator, its lowest among the eight indicators. Chad's laws broadly support women's work after starting a family. The Having Children indicator evaluates laws affecting women's work after starting a family. Chad receives a score of 80 for this indicator, with a positive answer for four out of the five questions covered. Under the Labor Code, women are guaranteed 14 weeks of paid maternity leave, with the government paying 100 percent of benefits. Additionally, fathers are granted one day of paid paternity leave after the birth of a child. Article 112 of the Labor Code also prohibits the dismissal of pregnant workers. Such workplace protections can facilitate women's ability to secure and sustain employment.

While women can legally sign contracts and register businesses in the same way as men, they cannot open bank accounts without their husband's permission. Discrimination in access to credit by creditors based on gender is also not prohibited. The Running a Business indicator analyzes constraints facing women entrepreneurs. Chad receives a score of 50 in this indicator.

While women have equal inheritance rights, women lack equal ownership to immovable property. The Managing Assets indicator analyzes gender differences in property and inheritance laws. Both children and surviving spouses have equal inheritance rights. The law also provides for the valuation of non-monetary contributions. However, women lack equal ownership rights to immovable property, with the law

TABLE 6.2: Chad's Legal Indicators for Women's

Indicator	Chad	Africa	OECD	Global
Accessing institutions: Legal capacity, agency, freedom of movement	75	84	100	88.1
Using property: Legal ability to manage, control, and inherit property	75	74	97	75.66
Getting a job: Restrictions on employment and parental leave policies	50	59	88	63.9
Providing incentives to work: Laws on childcare and personal income tax	40	70	95	78.61
Going to court: Ease and affordability of accessing justice	80	43	85	52.09
Building credit: Access to finance and inclusiveness of credit reporting systems	50	76	95	83.2
Protecting women from violence: Sexual harassment and domestic violence	60	74	99	82.46
Average score: All seven areas equally weighted	100	77	89	73.53

Source: Women, Business, and the Law 2019.

granting unequal administrative authority over assets during marriage. Strong property rights can allow women to leverage assets for economic gain. Often, access to immovable property offers an opportunity for both men and women to own land or housing. In Chad, the use of the 1958 French Civil Code means that husbands are designated as the administrators of property held in community during the marriage. They can sell, alienate, or mortgage such property without the assistance of their wives. Husbands are also responsible for the administration of all of their wives' property. Where women lack access to property because of such policies, this can both decrease their financial security and force them to forfeit necessary collateral to start a business.

Recommendations – Adolescents

Chapter 2 demonstrated that girls have poorer learning outcomes, are more likely to be married as children, and have children early. Our recommendations focus around how best to improve educational attainment and reduce child marriage and early childbearing.

i.   Improving learning outcomes for girls
ii. Reducing child marriage and early childbearing
iii. Enforcing existing laws and encouraging community-led interventions to reduce the prevalence of child marriage and FGME.

Improving Learning Outcomes for Girls

While boys and girls are going to school at equal rates, girls are not learning nearly as much as they should. The returns on education are high. Of all regions of the world, Sub-Saharan Africa sees the highest returns on education, with one additional year of schooling leading to a higher increase in wages than in any other region in the world (Arias, Evans, and Santos 2018). Yet the quality in Chad is low relative to the rest of the world, with many students not exhibiting the desired skills at the end of primary school. Only 20 percent of children who finish primary school have a good foundation in reading and math in the two classroom languages, French and Arabic. Primary education

FIGURE 6.3: Stunting rates, by year and gender
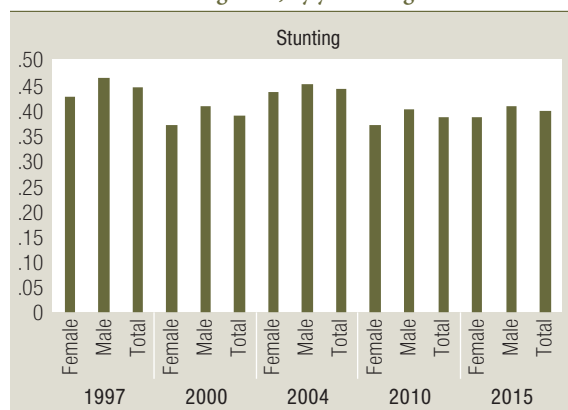
Source: Author's calculations using DHS data.

could be much more productive than it is. Differences in learning outcomes are unlikely to stem from differential investments in early childhood. Figure 6.3 shows stunting rates by year and gender and shows that while high and virtually unchanged since 1997, these are in fact higher for boys than for girls.

There is no single solution for improving learning, but recent research shows pedagogy is paramount. Arias, Evans, and Santos 2018(2018) report that the best improvements to learning come through improved pedagogy. In other words, while better materials and information and communications technology have a role and can be leveraged to improve teacher pedagogy, the best evidence on improving learning has been from the quality of teaching. This is true for evidence specific to Africa as well as for global evidence.

Successful interventions to improve girls' learning outcomes include structured pedagogy in early grades or providing teachers with clear guidance on teaching or even scripted lesson plans. Evans and Yan (2018) studied which interventions have been most effective at improving learning for girls, and give the following studies as examples. Piper (2009) studied an intensive, scripted, reading program designed to improve literacy in Grade 1 in South Africa. The program significantly improved literacy across a variety of measures for girls. In Liberia, Piper and Korda (2010) studied an intervention where reading levels were assessed; teachers were trained on how to continually assess student performance and were

provided frequent school-based pedagogic support, resource materials, and books. In addition, parents and communities were informed of student performance. The study found that while boys outperformed girls at the baseline, with instruction and investment, girls could narrow and even close the gender gap.

Another category of interventions that work well for girls (and boys) are those that help teachers teach children at their current level of learning (e.g., teaching at the right level), either through diagnostic feedback or software. Banerjee et al. (2016) studied an intervention in India in which teachers received support from government resource persons trained by Pratham, an NGO focused on teaching at the right level, and implemented the approach during a dedicated hour. They also tested the delivery of Pratham training in high-intensity, short-burst learning camps for 40 days during school hours, with additional 10-day summer camps. Both models led to gains in language scores. Casas et al. (2014) studied a Math Cognitive Tutor (MCT) targeted at the pre-algebra level. The computer program gives each student a personalized "problem-solving space (account), with just-in-time feedback and detailed tracking of progress. It allows students to sequentially tackle progressively more difficult tasks and tracks students' progress in real time as they answer questions, ask for help, and solve problems. It provides personalized feedback and hints when errors are made at key points. The authors found that math scores improved significantly.

To expand access to education for all with emphasis on encouraging female participation, more schools need to be built and equipped with the necessary infrastructure. The network of basic schools is expanding but remains inadequate. School construction can reduce transport costs in areas with extremely low schooling density, with particularly positive impacts for girls, as recent evidence from Afghanistan (Burde & Linden, 2013) and Burkina Faso (Kazianga et al., 2013) (Sawada et al., 2016) attests. Poor learning conditions and limited physical spaces (especially in rural areas) contribute to inadequate access to education and poor learning outcomes. Data on the availability of textbooks in Chad indicate a significant deficit of reading and math textbooks, especially in the first and last years of primary school,

with Boké, Conakry, and Kindia regions being those where the needs for textbooks were greatest during the 2015–16 school year. The presence of functioning latrines promotes girl's attendance to school, yet approximately a quarter of public primary schools do not have latrines, with large regional disparities. Furthermore, approximately 23 percent of all schools do not have access to water, with rural zones (23 percent rural schools without water) are at a greater disadvantage than urban areas (2 percent of urban schools without water).

Reducing Child Marriage and Early Childbearing

Ending child marriage, preventing early childbearing, and educating girls require specific interventions. Beyond laws, life skills and sexual reproductive health (SRH) knowledge, economic opportunities, and incentives for schooling are all needed.

One category of programs emphasizes the empowerment of girls by providing life skills and reproductive health knowledge. The typical intervention is that of a Safe Space Club for adolescent girls. These clubs are delivery platforms for convening girls with a trusted adult mentor at a specific time and place. The approach was pioneered by BRAC in Bangladesh and the Population Council in Africa and Latin America. The clubs have proved effective when implemented well. By combining socializing, fun, and access to mentors, the clubs are attractive for girls to attend. From there, other services can be delivered. Clubs can be held in a variety of settings, including schools or community centers. Girls meet regularly and can with the help of mentors to discuss a range of issues, including those related to SRH. They learn life skills, including "soft" or socio-emotional skills such as critical thinking and problem solving, communication, and negotiation (for example within the household). One of the objectives is often to boost girls' self-awareness and self-esteem so that they can explore and fulfill their own aspirations. In many cases, Safe Space Clubs are also used to impart "hard" skills, such as basic literacy and numeracy, or basic business skills. The World Bank is already involved in this Agenda in Chad with the SWEDD project and should continue in this direction (See Box 6.2).

BOX 6.2: THE SAHEL WOMEN'S EMPOWERMENT AND DEMOGRAPHIC DIVIDEND (SWEDD, 2015)

SWEDD is a regional project that currently focuses on four provinces in Chad: Lake, Salamat, Hadjer-Lamis, and Kanem. The development objective is to increase women and adolescent girls' empowerment and their access to quality reproductive, child, and maternal health services. It also aims to improve regional knowledge generation and sharing as well as regional capacity and coordination. The project has funded interventions in four key areas:

i. Girls' education: This component has mostly consisted of scholarships, in-kind transfers, and the provision of accommodation. More than 10,000 girls have been reached. In the four project provinces, secondary school enrollment of girls has increased by 16 percent.
ii. Women's economic empowerment: More than 9,000 girls and women have been reached, essentially through income generating activities (IGA), which involves training and the provision of equipment. Successful advocacy was also conducted on land allocation for women, leading to significant increase in land use areas.
iii. Life skills: Through the creation of 360 safe spaces, about 11,000 girls were equipped with life skills as well as basic knowledge on reproductive health.
iv. Reproductive health services: The project has also supported reproductive health service in the four provinces by hiring 45 midwives.

Since May 2020, SWEDD has started a second phase (with an additional budget of USD 45 million) to scale up promising activities in additional provinces.

Source: Authors.

These programs can also help mitigate the potential impacts of COVID-19 on school dropout rates. During the Ebola epidemic in Liberia, an adolescent girls program implemented by the International Rescue Committee boosted the number of girls transitioning from primary to secondary school and had sustained results on educational achievement. Adolescent girls' programs implemented in Sierra Leone before the Ebola epidemic and in South Sudan in conflict-affected areas also helped young women remain in school and avoid unintended pregnancies following the crises. Program curriculum can be adapted to a crisis context: the program in Liberia ensured that mentors leading the programming could disseminate public health information and discuss the Ebola epidemic in group sessions. Mobile delivery modes such as text messaging and virtual mentoring groups can help diffuse information on a range of topics and connect girls to vocational and life-skills trainings even during potential times of confinement.

These programs have helped improve SRH knowledge and behaviors. This includes an increase in girls undergoing HIV testing or counseling, an increase in the use of modern contraception or other methods of family planning, a reduction in the desire to practice FGME for daughters in countries where the practice is prevalent, a reduction in the risk of IPV when the program also reaches out to men, an increase in self-esteem, and gains in specific skills taught during safe space sessions, for example in the areas of financial literacy or basic literacy and numeracy.

At the same time, without additional interventions related to schooling or employment and livelihoods, it is not clear that safe spaces are enough to delay marriage and childbearing (though that may not have been a primary goal of these projects). It is therefore important to consider programs whereby safe spaces have been combined with livelihood opportunities and incentives to remain in school, usually with larger impacts on the age of marriage and childbearing.

The second category of programs combines an emphasis on empowering girls, often through safe spaces, with additional focus on providing livelihood

BOX 6.3: A GENDER PILLAR IN A DEVELOPMENT POLICY OPERATION FOR NIGER

A multi-sectoral USD 350-million Development Policy Operation (DPO) approved in 2020 in Niger drew on analytical work describing gender gaps in Niger and the macroeconomic benefits of closing these gaps. The report titled Economic Benefits of Gender Inclusion delivered in October 2018 revealed that extremely high rates of child marriage (more than 75 percent), low educational attainment for girls, and lack of access to reproductive health services drive Niger's fertility and population growth rates to being the highest in the world.

The report provided the basis for dialogue between the DPO team from the World Bank and the high-level governmental committee in charge of implementing the recommendations of the Bank report on gender. The Committee comprised all public entities involved in gender issues as well as local and international NGOs (CARE, Save the Children) and United Nations agencies (UNICEF, UNFPA, UN Women) involved in the fight against child marriage and for girls' education and access to SRH health.

Following the dialogue with government and other stakeholders, the DPO addressed fertility issues through reforms designed to change deeply-rooted social norms around child marriage. It prompted the Government to take relevant actions, including: i) establishing Child Protection Committees at the national, regional, departmental, municipal, and village levels to promote the discontinuation of child marriage; ii) issuing a Ministerial Order allowing access to family planning assistance to married adolescent girls without parents or husbands' mandatory accompaniment so as to improve their access to health services; and iii) issuing a Joint Ministerial Order allowing adolescent girls to remain enrolled in school in the event of pregnancy or marriage in order, to improve educational attainment.

opportunities. These programs are appropriate for girls who are not in school. For these girls, building skills for income generation may provide an alternative to early marriage and childbearing. Two groups of interventions are distinguished: livelihood interventions, and financial literacy and access to financial services. Impacts on the age of marriage and early childbearing tend to be larger than with life skills or SRH knowledge alone, but not in all cases. Given their focus on economic opportunities, the programs often have some success in increasing earnings, employment, or savings.

Several of the programs also succeed in increasing the use of modern contraceptives and SRH knowledge, which may help delay childbearing. In some cases, the programs also succeed in delaying the age of marriage and reducing teen pregnancies. For example, the BRAC Uganda Empowerment and Livelihoods for Adolescent Girls program: i) increased the likelihood of engaging in IGAs by 32 percent; ii) increased self-reported routine condom use by those sexually active by 50 percent; iii) reduced fertility rates by 26 percent; and iv) reduced reporting of unwanted sex by 76 percent. There were also reductions in teenage pregnancies and child marriage as well as a shift in gender dynamics in the community (Bandiera et al., 2012) and (Buehren et al., 2016). In summary, adding a livelihood dimension to life skills and SRH knowledge programs may help delay marriage and childbearing but not in all cases. The focus on economic opportunities may also help in ensuring girls' regular participation in the programs.

Conditional Cash Transfers (CCTs), which promote education by reducing the opportunity and out-of-pocket cost of schooling, can help delay the age of marriage and childbearing. In a wide array of countries around the world, cash transfers to extremely poor households, sometimes but not always conditional on school enrollment and attendance, have significantly raised educational enrollment or completion. Across more than 20 impact evaluations of cash transfers programs around Africa (from Burkina Faso to Zimbabwe), all but one showed significantly improved outcomes in education (Evans & Popova, 2017). These positive impacts are observed for both unconditional and conditional programs, although evidence from Burkina Faso suggests that the children most vulnerable to dropout—girls overall and boys who are doing less well in school—may benefit from such programs. There is also scope for addressing high rates of child marriage and early childbearing using development policy operations. Box 6.3 describes a recent project in Niger.

BOX 6.4: TOSTAN'S APPROACH TO CHANGE GENDER NORMS AROUND FGME AND CHILD MARRIAGE

In Senegal, efforts to end female genital mutilation and excision (FGME) had long been slowed by the view that it was essential to a girl's marriageability and in the transition from girlhood to adolescence and adulthood.

The Community Empowerment Program (CEP) is a non-formal education program based on the promotion of human rights implemented by the NGO Tostan and UNICEF. The CEP process teaches communities about democracy, human rights, accountability, problem-solving, health and hygiene, and conflict management. The program stimulates collective discussion and decision-making about various issues affecting communities, including through meetings organized between villages and between generations, and through radio programs aired in local languages. As part of this process, communities learn about the harmful effects of FGME.

Along with national legal and policy efforts on FGME, the CEP process has led to the public declaration by a large group of villages that they had agreed to abandon FGME. A public declaration is a strategy aiming to enable the people themselves to renounce a traditional practice without fear of social stigma.

Qualitative and mixed-methods research also provides suggestive evidence that CEP changed the gender norms that had sustained child marriage and FGME in Senegal (Cislaghi, Gillespie, and Mackie 2016; UNICEF, 2008).

Source: Guinea Gender Report 2019.

Enforcing Laws and Promoting Community-Led Interventions to Reduce the Prevalence of Child Marriage and FGME

Chad's current laws on FGME and child marriage should be properly applied, with rigorous investigation of suspected cases leading to the prosecution of perpetrators. In 2015, Chad set the minimum age of marriage at 18 for both boys and girls in line with international and regional standards. In June 2016 the Government adopted a roadmap to end child marriage and FGME (2016-2018). The Constitution of Chad does not expressly refer to harmful practices or FGME, but Article 14 guarantees equality "without distinction of origin, race, gender, religion, political opinions, or social position." The enacting laws clarify the Government's position on the damaging effects of FGME and child marriage and create an enabling environment for advocacy work (Svanemy et al., 2013). Enforcing the laws will be critical to reducing the prevalence of these destructive practices.

Successful programs leading to gender norms transformation in low- and middle-income countries are generally conducted within communities. These programs help people address existing relations of gender and power within their family and broader social networks. There are several programmatic strategies for community-level interventions that transform gender relations. Community-based awareness campaigns such as the Community Empowerment Program described in Box 6.4 are promising policy alternatives. These should be informed by regular dialogue with customary chiefs, religious leaders, and other traditional structures as well as with parents, media, women's organizations, and young people so as to better involve them in the fight against FGME.

Recommendations – Adults

Improving Women's Access to Agricultural Inputs and Enterprise Capital

To improve women farmers' and entrepreneurs' access to labor, women could be offered financing and support to hire labor and support to help with childcare. Labor is a critical input for achieving economic success in both entrepreneurship and agriculture. Women have the option of hiring labor, entering into labor-sharing agreements, enlisting the help of household members, or providing the labor themselves. In practice, this may be difficult due to a variety of constraints, including an inability to pay as much for effective farm workers, or cultural norms that lead men in the household to allocate household

labor to the detriment of female-operated plots and businesses or to hire laborers to work harder for a male supervisor.

A possible solution could be to offer women financing to hire labor. Another would be investment in e-platforms or networks of extension agents designed to help women identify and hire effective labor. Moreover, domestic and childcare responsibilities may limit the time women themselves can dedicate to working in their plots or in their businesses and pursuing economic opportunities in the first place. This is both because of the diminished quantity of time they can dedicate to economic activities and because it restricts the continuity of their participation. A promising alternative may be community-based child-care centers and engaging men in the home as equal partners in domestic responsibilities. Women could also be offered financing or discounts on hiring or purchasing machinery (O'Sullivan, Rao, Banerjee, Gulati, & Vinez, 2014).

To encourage women to learn about and adopt productivity enhancing agricultural inputs, extension activities should be tailored to women's needs and financing offered to encourage the purchase of inputs. Cash vouchers or in-kind transfers may ease the financial constraints women face and help them purchase and use more agricultural inputs. Delivering improved inputs in quantities appropriate to women's often smaller plots and with payment schedules accessible to women could also lead to significant increase in use (Duflo, Kremer, and Robinson 2011). However, care needs to be taken in designing these programs to carefully understand the constraints Chadian women face in accessing inputs. Evidence from Mali suggests that even if fertilizer is provided for free to women farmers, it may not necessarily improve farm profits since it increases spending on other complementary inputs (Beaman et al., 2013). Similarly, low uptake of inputs may not necessarily be related to credit constraints but may reflect low levels of knowledge on how best to use the technologies (Carter, Laajaj, and Yang, 2013).

Provision of inputs can also help alleviate the economic stresses of COVID-19. The Oaxaca-Blinder decomposition has revealed that much of the agricultural productivity gap is linked to a difference in endowments: with access to the same resources, the gender gap would shrink. In this analysis, there is an opportunity to narrow the gender gap during the COVID-19 pandemic through direct provision of inputs. In several countries, providing inputs directly to women farmers has been shown to have positive impacts on measures of their wellbeing. In Côte d'Ivoire, the World Bank's Agriculture Sector Support Project provided oxen directly to household heads, via matching grants of 50 percent of the cost of animals and equipment. Preliminary results show that the households expanded their cultivated land, and women in the household were able to shift their time-use patterns to more self-employment. The World Bank's Gender Innovation Lab found that in Uganda, provision of subsidized crop vines and trainings on a nutrient-dense crop (the orange-fleshed sweet potato) helped boost the number of households that grew and consumed sweet potatoes by 68 percent and 50 percent, respectively.

For women farmers, digital extension services or innovative programing can be a replacement for traditional agricultural extension programs while limiting in-person contact during the COVID-19 pandemic. Video-enabled extension messaging has helped increase women's participation in agricultural decision-making, their adoption of agricultural practices and inputs, and production outcomes for plots managed by women (Lecoutere et al., 2019). In the Niger context, improved access to mobile technology coupled with an educational program demonstrating best technology practices helped households plant a more diverse variety of crops, with particular impacts on women-grown cash crops (Aker and Ksoll, 2016). Preliminary results from Mozambique show that adding modules on psychology-based personal initiative training, which emphasizes perseverance and problem-solving, to traditional extension services leads to increases in women's investment in inputs, adoption of best farming practices, cultivation of cash crops, and creation of off-farm businesses.

The venues in which women receive and learn how to use these productivity-improving inputs could also be made more gender-responsive and more thoughtfully meet women's needs and preferences. How agricultural extension may traditionally be

BOX 6.5: CHAD LOCAL DEVELOPMENT AND ADAPTATION PROJECT (ALBIÄ, 2020)

ALBIÄ aims to improve the management of natural resources and the livelihood of populations in selected climate vulnerable areas in and around the Ouadi Rime and Ouadi Achim (OROA) reserve in Chad. In addition, the project is expected to reduce gender gaps through specific activities based on women's needs. It will give special attention to women by using gender responsive extension approaches and methodologies and provision of increased access to support activities such as rural advisory services, subsidies, and inputs. ALBIÄ will also support labor-saving technologies, allowing free time to women for other productive opportunities. Focus will be placed on women's livelihood opportunities by targeting women with agriculture extension services that will increase income and yield. Lastly, the project will ensure the hiring of female extension workers.

Source: Authors.

subject to a male bias is illustrated in farmer training centers that do not provide separate washing and sleeping accommodations for men and women and do not provide facilities for the care of babies or young children, factors which may prevent women from attending the centers. Second, women's daily workloads may not always allow them to be absent from home for residential training; even attending short courses may cause insuperable problems in arranging substitute care for children or the home. Further still, extension services are often staffed predominantly by men. When in countries such as the Philippines or Mexico, women field staff have been deployed in sufficient numbers and with sufficient resources, they have become effective agents of change among women farmers. Promising extension models tailored to women's needs include farmer field schools with childcare facilities, flexible schedules, and mobile phone applications. In Chad, the ALBIÄ project could serve as a pilot.

Gains in agricultural productivity could also be achieved by encouraging women to grow cash

BOX 6.6: CLIMATE RESILIENCE AGRICULTURE AND PRODUCTIVITY ENHANCEMENT (PROPAD, 2018)

PROPAD aims to promote the adoption of improved technologies leading to increased productivity and to enhance the climate resilience of agricultural production systems in targeted areas. In addition, it will reduce gender disparities by supporting the training of young female agricultural scientists, developing a women empowerment strategy, and providing local extension services corresponding to women's specific needs.

PROPAD Gender Action Plan
A gender action plan has been developed to reduce gender inequalities. The plan targets at least 60,000 households, or 360,000 beneficiaries, of whom 40 percent are women and 50 percent are young people (men and women under 35). PROPAD has made progress in implementing some activities in the action plan, including:

i.   Selection of 17 young scientists for master's degree or PhDs, including eight female scientists;
ii. Support for the analytical study on rural land tenure and agricultural productivity in Chad, where one of the main recommendations is to build policy interventions to formalize and secure access to land and modern inputs for women. The study will serve as a foundational document for drafting the national land code;
iii. Selection of women farmers' associations, which will benefit 52 percent of the 900-crop intensification and diversification sub-projects already identified; and
iv. Women involvement in Grievance Redress Mechanism (GRM) committees, which have seen the participation of 1,831 people (42 percent men and 58 percent women) in setting up the 27 local committees covering the project operating areas. GBV-related activities are also coordinated by a female gender specialist.

crops. Our analysis shows that women are less likely to grow cash crops. Examples from across SSA suggest that women are less likely to manage plots (Gaddis, Lahoti, and Li, 2018) and tend to grow crops with less complicated production techniques and are less likely to grow the main area's cash crop (De Brauw, 2015). Quasi-experimental evidence on the impact of Rwanda's pilot land tenure regularization program, in which married female spouses were registered as co-owners of land by default, shows that the program boosted rural land investment among male-headed households by 10 percentage points and the impact for female-headed households—at 19 percentage points—was nearly twice as large (Ali, Deininger, and Goldstein, 2014). Evidence from Ghana and Uganda also suggests that involving women in female farmer groups may allow women to scale in marketing (Hill and Vigneri, 2014).

For rural or extremely poor beneficiaries, bundled economic inclusion interventions have proved effective at helping to develop sustainable livelihoods, which can be a tool for economic recovery from the COVID-19 pandemic. Providing comprehensive support through life and business skills training, a productive grant, mentoring, and savings groups has enabled women in Zambia to invest and develop IGAs, assert themselves, and escape abusive relationships, according to M&E data and qualitative research of the program. Distributing mobile phones has also proved useful in the Zambian context as these have become critical instruments in sharing information, delivering digital payments, and allowing for remote monitoring in the context of the COVID-19 pandemic. In Niger, evidence from an impact evaluation shows that a bundled economic inclusion package helped households increase their investments and switch their economic activities off-farm, leading to increased incomes. Beneficiaries were more food-secure, had improved mental health, and felt a stronger sense of social worth.

For women-owned firms, policy responses such as lines of credit, enhanced business trainings, and access to caregiving resources can help mitigate the impacts of COVID-19 and provide much-needed liquidity during the economic shock. There has been some success with this approach in the region: the Women Entrepreneurship Development Project

(WEDP) in Ethiopia issued USD 23.3 million in credit lines to women entrepreneurs in its first calendar year, of whom 66 percent were first-time borrowers. Three years later, women who received the credit line increased their profits by 40 percent on average, and repayment rates were high, standing at 99.1 percent. During COVID-19, lines of credit can help women to access the liquidity they need to maintain their business and potentially lead to impacts on profits. Tweaking standard business training models can also be a helpful policy tool in providing women with skills that can boost resilience in the face of economic shocks. In the economic recovery phase, personal initiative training, which teaches women entrepreneurs to be proactive and demonstrate perseverance, may help them bounce back more quickly from the economic ramifications of COVID-19. In Togo, the training increased women entrepreneurs' profits by 40 percent. Depending on mobility restrictions, the training could take place virtually and has the potential to act as a tool to promote investments, decrease risk aversion, and increase worker productivity. Further, as women are more likely to shoulder increased care burdens due to children being out of school or to assist sick relatives, providing access to caregiving resources can help facilitate their engagement in economic activity. Studies in Kenya and Mozambique have found that with access to childcare, women can increase their employment rates.

With the likely increase in unemployment and worsening working conditions, providing safety nets and targeted cash transfers to women who are vulnerable during the crisis will be a critical policy option. Women entrepreneurs are likely to be at a disadvantage when aiming to resume operations after the crisis due to a lack of access to finance and disproportionate engagement in sales of perishable products, such as fruits or vegetables. Cash transfer programs targeted to women-owned businesses or other vulnerable groups are a useful tool in mitigating the impact of the outbreak.

Improving Women's Investment in their Human Capital

Disparities in educational attainment and the skills learned through education are closely linked

BOX 6.7: CONSIDERATIONS IN DESIGNING ADULT LITERACY PROGRAMS

Aker and Sawyer (2019) argue that adult literacy programs should take into consideration the following aspects:

Ensure that teaching material is properly sequenced, from decoding to automaticity to comprehension. While this is not so different from learning in children, adults may need to work harder to re-specialize to a new task (i.e., decoding new information).

Provide more practice to make things stick (Knowland and Thomas, 2014)including their earning potential. In some cases, such as the learning of literacy in developing countries, it can provide an avenue to escape from poverty. In developed countries, job retraining in adulthood contributes to the flexibility of labour markets. For all adults, learning opportunities increase participation in society and family life. However, the popular view is that adults are less able to learn for an intrinsic reason: their brains are less plastic than in childhood. This article reviews what is currently known from neuroscientific research about how brain plasticity changes with age, with a particular focus on the ability to acquire new skills in adulthood. Anchoring their review in the examples of the adult acquisition of literacy and new motor skills, the authors address five specific questions: (1. Given the limits to brain plasticity and the difficulty for adults to re-specialize, exercises and practical applications become all the more relevant for adults. This includes having different aids to assist with decoding and automaticity as well as group discussions to assist with comprehension and evaluation.

Ensure that the curriculum has a specific focus on metacognitive skills, not just decoding. Metacognitive skills are critical for comprehension, yet difficult to teach, and little research has been done on their impact on adult learning.

Recognize the opportunity costs of learning for busy adults. A substantial body of research suggests that drop-out in some countries increases significantly at the age when children can start working. Strategies to address this have included linking social assistance programs with demand for social services such as Conditional Cash Transfers (CCTs) and agriculture extension programs. Similar strategies may be required for adults, although more research is needed. The use of technology also shows promise since, for example by using mobile phones, the learners do not have to be physically present in the classroom. Further still, by linking learning to goals the adult learners may have (such as learning numeracy skills to be able to operate their mobile phones) can lead to further success.

Ensure that teaching pedagogy is specific to adult learners (i.e., andragogy) in preference to a one-size fits all approach to education.

with the gender gaps we observe in agriculture, entrepreneurship, and wage earnings. In this section, we examine programs that could help increase women's skills in these three areas.

A large literature has demonstrated how basic literacy and numeracy skills allow people to better operate in the labor market and, ultimately, access better jobs. The average literacy rate in Chad for women is 22 percent and that for men is 36 percent. Low literacy is associated with lower labor force participation (LFP), lower agricultural yields, and lower agricultural earnings. People with reading literacy earn a premium that varies between 10 and 30 percent, and premiums are at their highest levels in the two African countries in the sample, Ghana and Kenya, possibly because of the

relatively lower number of people with reading literacy (Arias, Evans, and Santos 2018).

While adult literacy programs could be an important tool, care should be taken in their development. Many programs are characterized by low and volatile attendance rates, high drop-out rates, limited skills attainment, and rapid skills depreciation (Aker and Sawyer, 2019). Box 6.7 describes considerations to be taken into account when designing adult literacy programs.

Business training, including an increased focus on psychosocial skills, business development, and management within specific business training programs for women may be a promising policy intervention for reducing the gender gap in

BOX 6.8: REFUGEES AND HOST COMMUNITIES SUPPORT PROJECT (PARCA, 2019)

This project will improve access by refugees and host communities to basic services, livelihoods, and safety nets and strengthen country systems for managing refugees. All project activities will be assessed through a gender lens to ensure that activities do not inadvertently exclude women but instead incentivize their participation. PARCA will also focus on reducing gender-based violence (GBV) by promoting respect and transparency and by encouraging reporting and corrective action. To this end, communication campaigns will be carried out, contractors will be required to follow specific protocols, and appropriate GRM will be put in place. A specific report on gender and GBV will be prepared in the mid-term review, detailing how potential cases of GBV have been handled and how they will be addressed in the future.

In addition, the Results Framework includes mechanisms to monitor the project's gender impact and to facilitate gender disaggregated analysis to monitor the advances in addressing gender-specific vulnerabilities. Issues to be monitored include the strength of women's livelihood activities, promotion of girls' education, protection of women and girls against GBV, and expansion of access to quality reproductive health care and information. A strong communications campaign will help ensure that project activities do not create tensions between and within groups. In addition, the project will ensure that investments are based on objective, transparent, gender-balanced, and social and environmentally sensitive criteria.

Source: Authors.

entrepreneurship. However, these programs need to be customized to fit the needs of Chadian women. The evidence of the efficacy of business training programs targeting small and medium enterprises has been mixed, in particular when training is provided in the absence of startup capital. McKenzie and Woodruff (2013) review several impact evaluations of business training programs mostly targeting small firms and find relatively modest impacts of training on survivorship of existing firms, although they find some evidence that training programs help prospective owners launch new businesses more quickly. They also find that existing firm owners tend to implement some of the practices taught in training, but the magnitude of these improvements is often modest.

There is growing evidence of the importance of psychosocial skills for women entrepreneurs in Africa. An entrepreneurship program for women in South Africa found a positive impact on profits and sales six months after training as well as improved motivation and confidence (Botha, Nieman, and Van Vuuren, 2006). A program in Togo comparing personal initiative training seeking to foster self-starting, future-oriented and persistent behavior with managerial training found positive and significant effects on sales and profits of men and women-led micro enterprises (Campos et al., 2017). McKenzie and Puerto (2017), studied the impact of the

ILO's Gender and Enterprise Together training program for low-income female business owners and found that after three years, trained women were earning 15 percent higher profits and experienced improvements in mental health and subjective wellbeing.

Providing comprehensive support that addresses women's multifaceted vulnerabilities also helps improve impacts. Liberia's Economic Empowerment of Adolescent Girls and Young Women (EPAG) skills training program was designed to alleviate barriers to entering the labor market faced by young women. The program provided six-months training in either job skills targeted to sectors with high demand or business development skills, six-months support for job placement or links to micro-credit depending on the training received, and other training and support such as life skills training, small group learning, a business plan competition, mentorship, savings accounts, childcare, and transportation. The project proved to be a cost-effective intervention for women entering the business skills track (where, based on increased earnings, the cost of the intervention could be recovered within three years) but less so for women entering the jobs skills training (Adoho et al., 2014).

More fundamentally, from childhood on, girls should be encouraged to invest in their human capital. Early family formation limits women's possibilities

for acquiring education, and this in turn limits their opportunities and aspirations. Programs designed to limit early marriage should therefore encourage girls to invest in their education and train the next generation of entrepreneurs and workers.

Reducing Maternal Mortality

To reduce maternal mortality, the entire healthcare system needs to work. Women need folic acid before pregnancy, antenatal visits, identification of potentially dangerous conditions, institutionalized delivery, and a functioning hospital. Only 24 percent of births in Chad are attended by a skilled attendant. In addition, Chad

should provide greater decision-making autonomy to women in matters of reproductive health.

More can be done to ensure that women receive the care they need regardless of where they live. Chad continues to face important challenges in ensuring equitable access to quality health services. The geographic distribution of public health resources does not reflect the needs of the population because despite improvements, transfers to regions fall short in equalizing local resource availability and spending needs. In addition, financial management capacity varies across regions and is especially low in the poorest regions, contributing to the overall inefficiency of the sector. Box 6.9 describes the factors underlying Rwanda's

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BOX 6.9: RWANDA'S SUCCESS IN REDUCING MATERNAL MORTALITY

Rwanda's maternal mortality ratio decreased by 79 percent between 2000 and 2017 and in 2017 stands at 248 deaths per 100,000 live births.[a] Below are some of the factors behind this success story as described in WHO (2015).

Decentralization of the Health Sector
The Rwanda government decentralized the health sector to strengthen community involvement and trained 45,000 community health workers to provide primary health services at the village level. Elected by their community, these workers connect communities to health services, especially in remote areas, and monitor health at the village level. Each village elects three volunteers who are trained by the Ministry of Health: a male and a female in charge of integrated case management of childhood illness and family planning, and a female in charge of maternal and newborn care. They all play a key role in expanding the coverage of family planning, antenatal care, and childhood immunization, and they also provide services for malaria, pneumonia, and diarrheal diseases.

Universal Health Care
Rwanda's community-based health insurance scheme lowers catastrophic out-of-pocket payments and ensures access for vulnerable populations, focusing on maternal and child health services. Community committees are responsible for mobilizing and registering members, collecting fees, and paying health facility bills. Annual premiums are based on wealth categories. Ambulance transport is also covered, thus reducing a significant barrier to emergency care for pregnant women experiencing complications. With specially programmed mobile phones, community health workers can contact health facilities for referrals.

Performance-based Financing System
Rwanda's national performance-based financing system rewards community health workers according to selected indicators, including the proportion of women delivering at health facilities and the percentage of children receiving a full course of basic immunizations.

National Monitoring and Evaluation Framework
All maternal and child health services are integrated under one national monitoring and evaluation framework to improve priority setting, planning, and resource allocation. Rwanda has developed a web-based Health Management Information System to collect data from a variety of sources and has scaled up maternal death reviews as part of efforts to strengthen data collection.

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[a] https://www.who.int/gho/maternal_health/countries/rwa.pdf?ua=1.

success in reducing maternal mortality. This will be even more critical in the context of the COVID-19 pandemic. Ensuring access to adapted protective equipment, hygiene products, and COVID-19 testing for women on the frontline of healthcare will be critical to mitigating women's higher exposure to contagion. Policymakers should also consider making a minimum emergency package of sexual and reproductive health (SRH) services available for women and adolescents.

Conclusion

This study approaches gender inequality from the life cycle angle starting in adolescence and moving to adulthood. Gender inequalities become inequality traps when disadvantages transfer across generations. Inequalities that emerge in adolescence and early adulthood, a particularly critical time when choices are made, determine outcomes regarding skills, health, and economic opportunities that have long-lasting effects on women's lives and societies. This illustrates not only the importance of intervening early but also the ways in which the realms of endowments, economic opportunities, and agency are interrelated.

Education and health are among the most important endowments for achieving human development, and individuals start accumulating them at a young age. Health starts with accessing nutrition in the womb and remains crucial to normal anthropometric and brain development in the under-five. Education starts at an early age and can help lift barriers and obstacles affecting adolescent girls' path in life such as childbearing and early marriage, the main factors accounting for dropouts. Education at an early age is critical to increasing women's voice and participation in societal institutions later in the life cycle, accessing assets and opportunities, or allowing the expression of women's voice within households or more broadly within society.

Other factors are also critical to addressing gender inequality at a later stage of women's life cycle. Asset ownership is one of them. Pervasive and persistent gender differences remain in productivity and earnings across different sectors and jobs all over the world. Many women around the world appear to be caught in a productivity trap. They are not worse

farmers, entrepreneurs, or workers than men; rather, gender differences in labor productivity and earnings are primarily the result of differences in the economic activities of men and women, different endowments, and uneven access to assets (World Bank, 2012) The different patterns of economic activity for women and men also emerge from the ways markets and formal and informal institutions work and how households respond. Illustrative examples include uneven access to financial services, uneven access to land and public services, and segregation and legal barriers in accessing opportunities in high-earning sectors.

What can be done to achieve gender equality, and is there a right sequencing of reforms? The present study points to the main areas that generate the most substantial gains if gender parity is to be achieved: universal education, increase in female skilled labor, and a demographic transition brought about by a later start to child marriage and childbearing as a result of greater female education. The recommendations discussed in this study focus mainly on these. Many options complement each other as they span various sectors ranging from programs to enhance women' entrepreneurial skills, amendment of laws to protect women and girls against discrimination and violence, promoting universal education, and keeping girls in school.

The proposed recommendations are not comprehensive but rather point to a menu of options and potential avenues for Chad in these areas. In addition, they require a complex process if they are to be implemented. Success stories are reported and provide ideas and material for dialogue among relevant stakeholders, even if a successful policy in one country may not necessarily transfer to another. The context determines the extent to which case studies from other countries are relevant or replicable in Chad. Therefore, successful interventions and lessons from other countries must be adapted and attuned to country-specific social circumstances.

In particular, policy design and implementation must be negotiated with key stakeholders taking into account the policy environment. Progress toward gender equality is a shift toward a new equilibrium where women have access to more endowments, economic opportunities, and ways

to exercise agency. Such changes need to be shaped by interactions between households, markets, and formal and informal institutions. Each of these interactions affects markets, formal institutions, and informal institutions in a continuous feedback loop. Policies require trade-offs in allocating resources to competing priorities within given budget constraints and financial and political costs. For instance, improving maternal care and delivery in remote areas may conflict with expanding hospital services for the broader population.

Stakeholders' interests and spheres of influence determine the power dynamics that shape policy reform in relation to trade-offs and costs in the short and long term. Societal actors have a direct hand in shaping the policy and institutional environment by advocating policies, designing interventions, and implementing programs. Individuals can influence government policy through voting and public opinion. Opposition to any given reform may come from societal actors who do not want (or cannot afford) to bear the related costs or prefer a competing agenda. Given multiple and diverging societal actors, coalitions are indispensable for building support and countering resistance from influential interest groups. Because reforms usually create winners and losers, understanding the political realities and tradeoffs that shape the incentives for key stakeholders relative to a program or policy is vital to building coalitions and securing consensus.

Hence, policy change needs to capture the collective aspirations and political will of social actors if it is to open new opportunities. When policy formulation and implementation follow cues from ongoing shifts in markets and social norms, convergence and alignment can fuel sustainable change. But such incremental reforms may not be enough to overcome the path dependence and institutional rigidities that result in persistent gender inequality. Bold government action with transformative reforms can alter social dynamics and move countries and societies to a more equitable equilibrium. In these circumstances, policy implementation and enforcement must follow through to produce sustainable behavioral changes.

The COVID-19 crisis risks exacerbating already substantial gender gaps, and policy responses should be gender-sensitive to avoid making women and girls bear the brunt of the economic impacts. The pandemic is deepening pre-existing inequalities, exposing vulnerabilities in social, political, and economic systems, which in turn amplify the impacts of the pandemic. Women need to be involved in the response to the crisis and in decision-making, and women and girls need to be deliberately targeted in all efforts to address the pandemic. A nuanced, gender-sensitive approach to policy responses that address the health emergency and economic recovery can help mitigate the heightened impact of the COVID-19 crisis on women and girls. Tailoring and expanding safe spaces programming can help adolescent girls, who may face interruptions to their education and increased potential for adoption of risky activities, to move from primary to secondary schooling and build the skills they need to transition to adulthood. For adult women, policies that help them to access the capital they need to sustain their business during the economic downturn and maintain the productivity of their farms will be critical to avoiding a widening of the gender gap in economic opportunities. Gender-sensitive policy responses can help alleviate economic stresses for women across a variety of sectors and help Chad come back stronger from potential economic damage.

Continued effort and enforcement will require champions to sustain the government's investments and ensure strong enforcement mechanisms required for behavioral change. The introduction of transformative change without enabling conditions, such as new legislation and law enforcement, can decouple policy intentions and outcomes, calling into question the sustainability of reform. The risk of reversal—especially if enforcement is relaxed—threatens this new equilibrium. Social norms will take a long-term vision to change and will require perseverance and sustained efforts and attention. Having a champion in the government and among the societal actors is critical.

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APPENDICES

Appendix A: Comparator Countries

The comparators were chosen based on the country's current ranking (i.e., structural peers) and expected trajectory (including aspirational peers, i.e., countries that provide a good example of development for the subject country) in terms of per capita GDP, fragility (based on the 2006 and 2019 Fragile States Index), the 2014 and 2019 Social Institutions and Gender Index (SIGI), population, maternal mortality ratio, and salient political and environmental factors (e.g., Is the country landlocked? Is it facing significant climate-change related hazards? Have there been significant political or security changes in recent years that substantially alter the comparator groups over the period analyzed?). The observation period runs from circa 2005 to the most recent data available (largely circa 2018). Chad is also compared to the West African Monetary Union (WAEMU) average even though Chad is not a member.

Table A1: Chad comparators

- Haiti
- Rwanda
- Yemen
- Burkina Faso
- Niger
- Guinea
- Sierra Leone
- Nepal
- Mali
- Eritrea
- Laos
- Central African Republic
- Myanmar
- Afghanistan
- South Sudan
- Cameroon
- Nigeria
- Libya
- Cameroon

Appendix B: Estimation of Elasticity of Saving Rates with Respect to Old and Young Dependency Rates

We estimate the elasticity of saving rate with respect to old and young dependency rates for Chad by using data from WDI (World Bank, 2020d). The estimations are done using saving rate (as proxied by share of domestic savings in GDP) to old and young dependency ratios over the period 1970–2019. Total number of observations used in the estimation is 33. We estimate the following equation:

$$\ln(s) = \alpha + \varepsilon_v \ln(v_t) + \varepsilon_w \ln(w_t) + \varepsilon_t$$

Where

s : saving rate
v_t : young dependency rate
ω_t : old dependency rate
ε_v : elasticity of saving rate with respect to young dependency rate
ε_w : elasticity of saving rate with respect to young dependency rate

The results are given Table C.1. The results suggest that the elasticity of saving rate with respect to old and young dependency ratios is –6.25 and –6.7, respectively.

To account for such impacts, we assume that saving rates are a function of the old and young dependency ratio with the following formulation:

$$\frac{S_t}{S_0} = 1 + signs(S_{t-1})\left(\frac{v_t}{v_{t-1}}\right)^{\varepsilon_v}\left(\frac{w_t}{w_{t-1}}\right)^{\varepsilon_w}$$

where s_t is saving rate in time t, s_0 is saving rate in the first period, v is the young dependency ratio, ω is the old dependency ratio, ε_v is elasticity of saving rates to young dependency ratio, and ε_w is elasticity of saving rates to old dependency ratio. ε_v and ε_w are estimated econometrically for Chad, and both elasticities are found to be around –6. The details of the estimation are given in Appendix C.

TABLE B.1: Estimation for Elasticity of Saving Rates with Respect to Old and Young Dependency Rates

Source		SS	df	MS		Number of obs.	=	33	
Model		10.60205	2	5.30102502		F(2, 30)	=	7.49	
Residual		21.2279235	30	.70759745		Prob > F	=	0.0023	
Total		31.8299735	32	.994686673		R-squared	=	0.3331	
						Adj R-squared	=	0.2886	
						Root MSE	=	.84119	

ln_nygdstotlzs	Coef.	Std. Err.	T	P>|t|	[95% Conf. Interval]	
ln_sppopdpndol	–6.252021	1.61532	–3.87	0.001	–9.550944	–2.953097
ln_sppopdpndyg	–6.709680	2.400522	–2.80	0.00	–11.6122	–1.80716
_cons	–20.12819	4.677633	–4.30	0.000	–29.68119	–10.57519

Source: Authors' estimation.

Appendix C: Estimation of Elasticity of Agricultural Productivity with Respect to Government Investments

We estimate the elasticity of agricultural productivity with respect to government capital expenditures in the agricultural sector using FAO (2020) data. Agricultural productivity is measured as value of output per capita while government capital expenditures covers agriculture, livestock, fisheries, and forestry. The data cover 100 countries for the years 2001 to 2017. However due to missing values in variables, the estimation is done using 138 observations. We estimate the following model using random effects panel data estimation. The results suggest that a 1 percent increase in government capital expenditure increases agricultural productivity by 0.11 percent.

$$\ln(Y_{it}) = \beta_0 + \beta_1 \ln(G_{it}) + \varepsilon_{it}$$

The estimations results are as follows:

TABLE C.1: Estimation for Elasticity of Agricultural Productivity with Respect to Government Capital Expenditures for Agriculture

Random-effects GLS regression					Number of obs. = 138	
Group variable: country					Number of groups = 23	
R-sq:					Obs. per group:	
within = 0.1798					min = 1	
between = 0.0809					avg = 6.0	
overall = 0.0732					max = 17	
corr(u_i, X) = 0 (assumed)					Wald chi2(1) = 26.29	
					Prob > chi2 = 0.0000	
l_Vad_Pc |	Coef.	Std. Err.	z	P >|z|	[95% Conf. Interval]	
l_Aff_Cp |	.1107321	.0215982	5.13	0.000	.0684004	.1530638
_cons |	8.083874	.3153583	25.63	0.000	7.465783	8.701965
sigma_u |	1.4515807					
sigma_e |	.16735636					
rho |	.98688201	(fraction of variance due to u_i)				

Source: Authors' estimation.

Balcet et al. (2014) report that the share of public spending on agriculture in GDP was 1.3 percent, and 44 percent of this spending consisted of capital expenditures on average for the period 2004–2012. Assuming the same ratios for 2017, this would imply CFAF 51 billion in public investment in agriculture in 2017.

$$6035 \times 0.013 \times 0.44 = 51$$

Since female-owned agricultural activities account for 32 percent of total agricultural activities, we assume that they received CFAF 16.3 billion.

$$51 \times 0.32 = 16.3$$

To close half of the productivity gap (i.e., 15 percent), we would need this investment to increase by CFAF 22.25 billion, or roughly 10 percent of total government investments in the 2017 Social Investment Matrix (SAM).

$$\frac{15}{0.11} \times 16.3 = 22.25$$

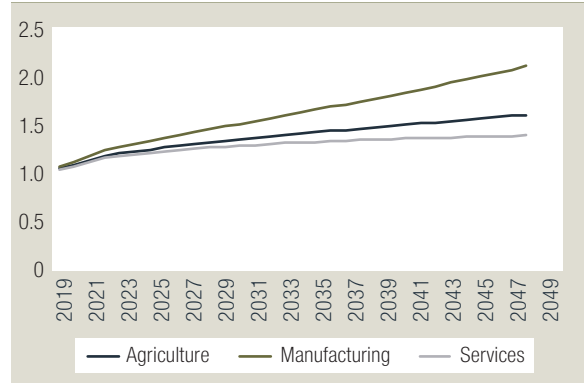$$\frac{212 + 22.25}{212} \times 100 - 100 = 10$$

Appendix D: Additional Figures and Tables for CGE Analysis

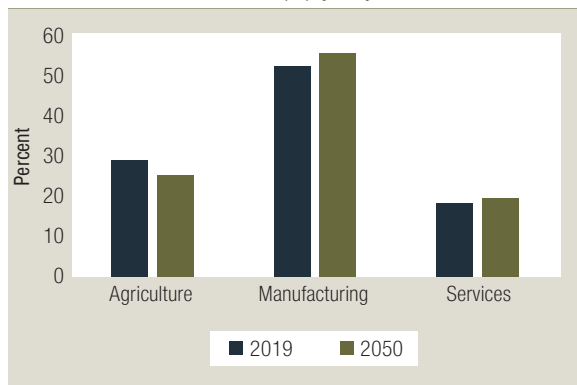**FIGURE D.1: GDP and population growth in BaU scenarios {FA1}**
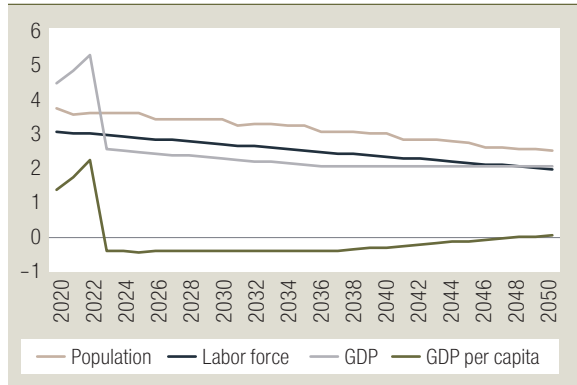
Source: CGE Model Results.

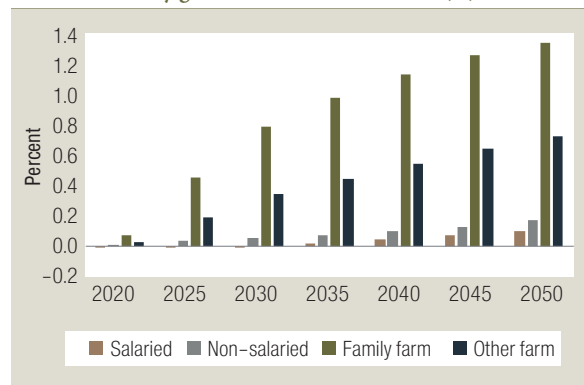**FIGURE D.2: TFP growth in baseline (2017=1) {FA2}**

Source: CGE Model Results.

FIGURE D.3: Share of main sectors in production under BaU scenario (%) {FA3}
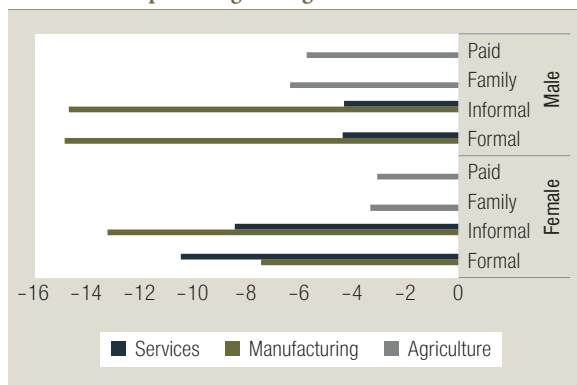

Source: CGE model simulation results.

FIGURE D.4: Increase in female labor force participation by gender under BaU scenario (%)
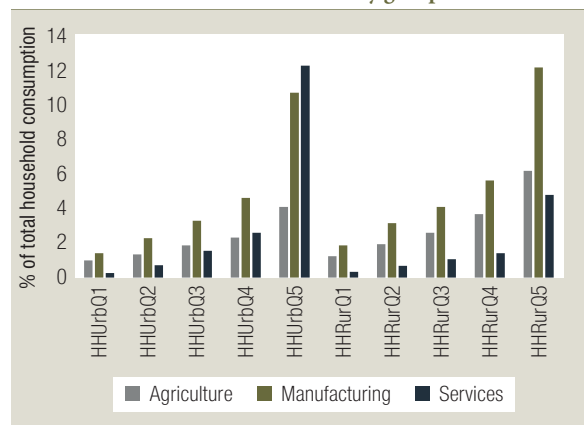

Source: CGE model simulation results.

FIGURE D.5: Employment effects of COVID-19, 2020, percentage change from baseline

FIGURE D.6: Distribution of household consumption across main commodity groups in 2017 SAM

Source: Authors' calculations using Harmonized Household Survey 2018/2019 and 2017 SAM.

TABLE D.1: Distribution of labor factor incomes across households in 2017 SAM

		Female				Male			
		Formal	**Informal**	**Family**	**Paid Farm**	**Formal**	**Informal**	**Family**	**Paid Farm**
Urban	Poorest	6.6	19.6	1.2	1.0	31.4	35.3	1.6	3.2
	Quintile 2	4.6	15.0	0.3	0.4	47.2	30.9	0.5	1.1
	Quintile 3	5.0	13.2	0.1	0.3	54.6	25.8	0.2	0.7
	Quintile 4	6.7	11.9	0.1	0.2	57.9	22.7	0.1	0.4
	Quintile 5	10.5	7.5	0.0	0.1	66.9	14.8	0.0	0.2
Rural	Poorest	1.3	24.4	2.4	2.1	7.1	50.9	4.3	7.7
	Quintile 2	0.0	23.8	2.2	2.2	12.6	47.0	4.1	7.9
	Quintile 3	1.8	24.6	2.2	2.0	8.1	49.6	3.0	8.7
	Quintile 4	2.5	21.2	1.7	1.8	22.7	40.6	2.3	7.1
	Quintile 5	1.9	16.5	1.2	1.6	39.4	31.2	1.2	7.1

Source: Authors' calculations using Harmonized Household Survey 2018/2019.

TABLE D.2: Household saving rates in 2017 SAM

		Saving rate (percentage of total income)
Urban	Poorest	−21
	Quintile 2	2.6
	Quintile 3	11.9
	Quintile 4	31.3
	Quintile 5	26.0
Rural	Poorest	29.1
	Quintile 2	−3.4
	Quintile 3	1.5
	Quintile 4	13.1
	Quintile 5	6.2
	Total	14.0

Source: Authors' calculation from Harmonized Household Survey 2018/2019.

TABLE D.3: Distribution of male and female labor across main sectors (percentage share of total workers in primary and secondary employment)

	Agriculture	Manufacturing	Services
Female	32.7	5.2	8.6
Salaried non-farm	0.0	0.1	1.2
Non-salaried non-farm	0.0	5.1	7.4
Family farm	21.5	0.0	0.0
Other farm	11.2	0.0	0.0
Male	35.0	3.6	15.0
Salaried non-farm	0.0	1.1	5.9
Non-salaried non-farm	0.0	2.4	9.0
Family farm	12.7	0.0	0.0
Other farm	22.3	0.0	0.0

Source: Authors' calculations using Harmonized Household Survey 2018/2019.