1.Introduction

The adverse effects of climate change are seen as inhibiting the economic development of countries, this highlighting the migration of people as an inevitable consequence, at least in the short term (Thiede et al., 2016). The analysis of the relationship between climate variability and international migration shows that an increase in the number of people affected by environmental factors may induce them to move (Obokata et al., 2014). This effect is more pronounced in communities with a high dependence on agriculture (Drabo and Mbaye 2014). While the displacement of people may exacerbate the risk of brain drain and thus, the flight of the labour force essential for economic recovery, countries could also receive significant remittances from their diaspora abroad in response to climate-related shocks (Bettin and Zazzaro, 2017).

Consequently, a few researchers put forward an innovative argument that remittances are indispensable for climate risk management (Duval and Wolff, 2008; Couharde et al., 2011). Their view is supported by studies using the New Economics of Labour Migration as a theoretical basis, which espouses the idea of relative strength of remittances in general environmental risk management (Stark et Bloom, 1985). The amount of monetary transfers made by international migrants to developing countries, also known as remittances, has been steadily increasing in recent years. These remittances are growing and have reached 466 billion dollars in 2017, an increase of 8.6% compared to the 429 billion dollars in 2016; more than three times the level of Official Development Assistance (ODA) granted to poor countries (World Bank, 2018). The large amounts of remittances are the main argument put forward in the literature to justify the role they could play in coping with climate shocks.

The stabilizing effect of remittances can be demonstrated through two mechanisms. On the one hand, they constitute a kind of private insurance, and on the other hand, they serve as a means of preparing for risks. This financial resource therefore allows both ex-post and ex-ante risk management. Thus, remittances can promote the diversification of activities, influence the location of productive activities towards less disaster-prone areas and help in the acquisition of new technologies that are more resistant to shocks (Mohapatra et al., 2012).

The first asset of migrant remittances is their stability. As argued by Gupta et al (2009), remittances are less volatile than ODA and FDI, which make up a significant share of public funding for adaptation in developing countries. A second advantage is that remittances clearly increase in times of economic distress in migrants' countries of origin, given the altruistic motivations of migrants (Ebeke and Combes, 2013). A third key benefit of remittances is that they enter directly into vulnerable communities such as in Sub-Saharan Africa (SSA) where adaptation needs are still high but difficult to meet through public investment (Mbaye and Drabo, 2017). There is no doubt that these arguments make remittances a promising complementary, if not alternative, means of financing adaptation to climate change.

The objective of this paper is therefore to highlight the role of remittances in the relationship between climate change and international migration in SSA countries. Achieving this objective will make a new contribution to the empirical literature that has tested the existence of a link between climate change and migration but also to the empirical literature on remittances and, in particular, on the role of these transfers in relation to climate shocks.

The remainder of the paper is organized as follows. Section 2 presents the literature related to relationship between climate change, international migration and remittance. Section 3 presents

the empirical framework by discussing econometrics models, estimation method and data used. Section 4 discusses the results and section 5 concludes.

2. Literature review

This paper draws upon the literature on the effect of climate change on international migration as well as the role of remittances in the context of climate change.

2.1 Climate change and international migration: An absence of the role of remittances

The first economic analysis at the aggregate level that provides a comprehensive picture of the relationship between climate factors and international migration was provided by Beine and Parsons (2015). Using a neoclassical utility maximization approach, the authors construct an empirical model in which short- and long-term climate factors in countries of origin shape migration between countries. The migration data come from the World Bank, more precisely from the bilateral Global Migration Data (GBMD) database. These data contain bilateral migration stocks for 166 destinations and 137 countries of origin. Due to the structure of the data, the analysis does not take into account medium and long-term migration movements between two census series. Data on long-term climatic factors also come from the World Bank. To measure long-term climate change, the authors use temperature and precipitation deviations and anomalies. In their baseline regression, they control for wage differentials, migrant networks, physical distance, linguistic proximity, and demographic and political factors. They find no direct effect of long-term climatic factors on international migration. An important contribution is made by the authors. Indeed, they point out that climate change can affect international migration indirectly through various channels, including negative labour market effects (wage differentials). Indeed, the wider the wage differentials with potential destination countries due to climate change, the stronger the incentives for international migration.

In an effort to extend the above-mentioned research, Beine and Parsons (2017) opt for a parsimonious specification excluding potential mediators and initially find no clear evidence of a direct effect of climate factors on international migration. However, when they consider the dyadic characteristics between countries of origin and destination, the result changes. Climatic factors tend to reduce migration in poor and middle-income countries, while stimulating emigration to former colonies and countries sharing a common border.

In the same vein, Coniglio and Pesce (2015) also use bilateral but Organization for Economic Co-operation and Development (OECD) data between 128 countries of origin and 29 countries of destination over the period 1990-2001. To check the robustness of their result, they use bilateral migration data from the United Nations Population Division (UN Population Division). Unlike Beine and Parsons (2015) and Beine and Parsons (2017), the authors find strong evidence of the direct and indirect effects of climate variability on international migration flows. Among other things, the estimates suggest that changes in precipitation, as measured by an index of intra-annual variability in precipitation, induce emigration from poor to rich countries. Sharp drops in temperature during the rainy season are also associated with greater emigration to less developed economies.

Additional evidence on the relationship between climate factors and international migration has been provided by Ruyssen and Rayp (2014). In a study that identifies the determinants of intra-regional migration in Sub-Saharan Africa (SSA), the authors find that both temperature and rainfall variations and natural disasters have a positive but not significant effect on international migration.

The work of Drabo and Mbaye (2014) makes an unprecedented contribution. They examine not only the quantitative effect of climate change, but also study the effect of composition in terms

of education. Specifically, they analyze the extent to which climate change leads to a brain drain through the emigration of skilled people. The data on migration flows in this study come from the World Bank and cover bilateral migration between six OECD destination countries and 67 developing countries over the period 1975-2000. The data on climate-related natural disasters come from the EM-DAT/CRED (Emergency Data events) database of the Center for Research on the Epidemiology of Disasters (CRED). Estimates with country-specific fixed effects show a positive correlation between the occurrence of climate-related natural disasters and emigration rates. Moreover, induced migration is characterized by positive selection with respect to skills exacerbating brain drain in developing countries.
Overall , none of these studies on the link between climate change and international migration have mentioned the role that migrant remittances could play in increasing individual resilience. In the following sub-section, we verify whether the same is true for studies at the microeconomic level.

In addition to studies at the macroeconomic level, a few articles have analyzed the link between climate change and international migration on the basis of microeconomic data. Henry et al. (2004), for example, study the link between rainfall conditions and emigration in villages of Burkina Faso using individual time series data. Their results on the influence of rainfall on international migration are mixed. Overall, the results of their estimation suggest that rainfall deficits reduce the chances of migration to foreign countries. In other words, people are less likely to move abroad during dry periods. Gray (2009) also uses household data and in contrast to the previous study he finds that the probability of emigration decreases with the level of precipitation. A similar result is found by Gray et al (2014) who show that emigration probabilities decrease with mean annual rainfall and rainfall differences.
We find that none of these studies consider a potential role for remittances. A notable exception is the work of Damette and Gittard (2017) who find that remittances from migrants counteract the effect of climate change on international migration in SSA. Specifically, the authors show theoretically how remittances can counteract rural-urban migration and international migration resulting from climate variability. Following Mbaye and Zimmermann (2017) we try to expand the literature on the role of remittances in the relationship between climate change and international migration.
The second part of our literature review presents the main findings of the works on the effect of remittances on international migration.

2.2 The link between migrant remittances and climate change

The purpose in this section is to take stock of the work on the effect of remittances on international migration, but before doing so, it makes sense to discuss the motivations for migrant remittances as noted by Sikder and Higgins (2017).
Migrant remittances refer to financial transfers made by migrants abroad. The literature on the determinants of such action is based on two approaches: a micro-economic approach and a macro-economic approach (Hamma, 2015). In the first instance, migrant remittances are income transfers from the migrant to a recipient individual in his or her country of origin.
This flow can be determined by several elements, several conditions relating to the economic situation of the migrant and the recipient, as well as the relationship between the two.
Secondly, it is the economic conditions, observed at the macroeconomic level, that justify the motivations for remittances.
David's (2010) study enriches the literature with new arguments. Indeed, on a sample of 78 developing countries over the period 1975-2005, he highlights differentiated responses of various types of financial flows to climate shocks. The results show that remittances increase

significantly in response to climate and geological shocks. These results are robust to the various estimators used, such as dynamic panel data estimators and Vector Auto Regressive (VAR) models. The author then provides another argument that the volume of remittances to a country may decrease as a result of a climate shock. This may be the case if the impact of the shock is such that it destroys or damages banks and other infrastructure used to send remittances.

The reasons for the increase in transfers following a climate shock range along an axis whose extremes are pure selfishness and altruism. Indeed, migrants send money to their families out of altruism for their use or well-being. On the other hand, they may also do so out of pure selfishness if their projects in their country of origin are influenced in some way by climate change.

The second stratum of the literature has focused on the key role that remittances can play in enabling households to cope with climate shocks. This is not simply a question of testing the response of remittances to shocks, but of determining whether remittance dependency provides protection against climate shocks. For example, Mohapatra et al (2012) presented evidence from household surveys indicating that remittances play a key role in preparing households for climate shocks and mitigating economic losses thereafter. In a same vein, Combes and Ebeke (2011) showed that remittances have mitigated the effects of various sources of instability (including climate shocks) on the instability of household per capita consumption based on a large sample of developing countries and dynamic panel data estimators.

In addition, Mbaye and Drabo (2017) question the role that private funds such as migrant remittances can play after a natural disaster. Using panel data from developing countries over the period 1984-2010, they find that migrant remittances significantly alleviate poverty following several manifestations of climate change.

The issue addressed in this chapter is the role that migrant remittances play in the relationship between climate change and international migration. To do so, we develop the following methodological framework.

3.Methodology

We present the appropriate empirical framework to test whether migrant remittances can interfere with the climate change-induced migration process. To do so, we present the econometric models, the estimation technique and procedure, and finally the data.

3.1 Econometric models

The following models are specified to test the effect of climate change conditional on migrant remittances on international migration in Sub-Saharan Africa (SSA). They are based on the work of Ebeke and Combes (2013) who analyze whether migrant remittances mitigate the impact of natural disasters on growth volatility in developing countries. In this perspective, we use several models.

The first model describes the effect of climate change on international migration.

$$Mig_{it} = \delta Mig_{it-1} + \beta X_{it} + \theta_1 CC_{it} + \mu_i + \vartheta_t + \varepsilon_{it} \qquad (1)$$

Where, Mig_{it} represents international migration, it is lagged by one period in the explanatory variables X is the matrix of control variables (Economic Opportunity, Urbanization and Conflict) and CC is the indicator of climate change μ_i and ϑ_t represent individual (country) and temporal fixed effects. Furthermore, i and t are respectively the countries and the time over consecutive 5-year sub-periods from 1965-2015. The error term is ε_{it}. We expect the coefficient $\theta_1 < 0$.

The second model reports on the contribution of migrant remittances to international migration. We include migrant remittances in the standard specification.

$$Mig_{it} = \delta Mig_{it-1} + \beta X_{it} + \theta_2 REM_{it} + \mu_i + \vartheta_t + \varepsilon_{it} \quad (2)$$

Where, REM represents the logarithm of migrants' remittances in dollars. We expect $\theta_2 > 0$. The third model also reports the contribution of migrants' remittances but controlling for the climate change variable.

$$Mig_{it} = \delta Mig_{it-1} + \beta X_{it} + \theta_3 CC_{it} + \theta_4 REM_{it} + \mu_i + \vartheta_t + \varepsilon_{it} \quad (3)$$

The expected signs are $\theta_3<0$ and $\theta_4>0$. If remittances reduce the magnitude of climate change, we could observe a decrease in absolute terms of the coefficient associated with remittances. Specifically, one could have $\theta_4>\theta_2$. Indeed, θ_2 captures the total stabilizing effect of migrant remittances (their direct and indirect effect on international migration). When the climate change variable is added to remittances, the residual impact of remittances (θ_4) now only measures the direct effect that does not involve reducing the effects of climate change. In addition, we expect $\theta_3<\theta_1$.

Finally, the fourth model explains international migration by taking into account the interaction between remittances and climate change. We specify it as follows:

$$Mig_{it} = \delta Mig_{it-1} + \beta X_{it} + \theta_5 CC_{it} + \theta_6 REM_{it} + \theta_7 CC_{it} * REM_{it} + \mu_i + \vartheta_t + \varepsilon_{it} \quad (4)$$

The main hypothesis tested is that the effect of climate change on international migration decreases as the level of migrant remittances increases. Specifically, we expect $\theta_5<0$ and $\theta_7>0$. No specific claims regarding the sign of θ_6. Since θ_5 and θ_7 have different signs, a threshold level of migrant remittances is involved.

$$\frac{\partial Mig_{it}}{\partial CC_{it}} = \theta_5 + \theta_7 REM_{it} = 0 \Rightarrow REM^* = -\frac{\theta_5}{\theta_7}$$

REM^* measures the minimum ratio of remittances required for full absorption of the effect of climate change.

3.2 Estimation method

Several estimation methods are used to estimate these econometric models. Among them, we can mention he Ordinary Least Squares (OLS) model. However, the use of this method presents the problem of simultaneity of variables. If remittances increase when the recipient economy experiences high emigration, the estimation of the effect of remittances by the Ordinary Least Squares (OLS) method is biased. Furthermore, the OLS estimation is ineffective since the lagged dependent variable is introduced in addition to the fixed effects. The Generalized Method of Moments (GMM) estimator in system can be implemented. The choice of the GMM in dynamic panels is due to the fact that this method solves the problems of simultaneity bias, reverse causality and omitted variables. GMM estimates control for the endogeneity of remittances and other explanatory variables. There are different forms of dynamic panel GMM estimators: the first difference GMM estimator and the system GMM estimator.

The Arellano and Bond (1991) model proposes a first-difference GMM estimator. It consists of taking for each period the first difference in the equation to be estimated to eliminate country-specific effects, and then instrumenting the explanatory variables in the first-difference equation by their level values lagged one period or more. Blundel and Bond's (1998) model determines a system GMM estimator that combines first-difference equations with level equations in which the variables are instrumented by their first differences. We choose the GMM estimator in the system because the literature has identified a problem related to the use of GMMs in first difference (Bond et al., 2001).

3.3 Variables and data sources

Our sample is made up of 34 sub-Saharan African countries chosen under the criterion of data availability. It covers a 50-year period from 1965 to 2015. The dependant variable is the rate of international migration[1] of country i at time t Mig_{it}. Following the example of Naudé (2010), we obtain the data related to this variable from the database of the United Nations Population Division. This proxy traces the movement of individuals from one country to another with the aim of settling there. Unlike previous studies, it has the advantage of tracing migration over a fairly long period (1960-2015) and on a five-yearly basis. Indeed, the studies by Cognilio and Pesce (2015), Beine and Parson (2015, 2017) use decennial international migration data covering the period 1960-2000. Beine and Parson (2015) assert, moreover, that these data can considerably bias the quality of the results obtained.

As a result of the studies carried out to date on climate-related migration, the following explanatory variables have been identified. In order to measure the impact of climate change on CC_{it} as in Marchiori et al. (2012), we use temperature and rainfall anomalies[2]. The adoption of precipitation and temperature in absolute value does not allow us to capture climate change. Remittances (*REM*) measure the logarithm of remittances received in millions of dollars over the analysis period. Several studies have used this variable as a proxy for migrant remittances (Damette and Gittard, 2017). In our estimates, we control for country characteristics such as the social network (social network) of the migrant. The latter is approximated by the migration flow in the previous period (Mig_{it-1}). It captures the facilities that family members who have already migrated could grant to potential migrants. We also control for the economic opportunities (*Economic Opportunities*) that are captured by the growth rate differential between that of country i and SSA on an aggregate basis because migration is mainly intra-regional in SSA (Ruyssen and Rayp, 2014). Another explanatory factor for international migration is the rate of urbanization (*urbanization*). The idea implied here is that a large urban population increases pressure on resources, increases demand for labour and then reduces wages. This could justify migration to another country. Barrios et al (2006); Maurel and Tuccio, (2016). These differents variables are taken from the World Development Indicator (WDI) database of the World Bank.

However, our data on conflicts (*conflict*) takes the value 1 if the country has a civil war that has caused at least 25 deaths over a 5-year period and 0 otherwise. This variable comes from UCDP/PRIO armed conflict dataset.

4.Results of the study

The main econometric results are presented in two parts. On the one hand, we present the results of our basic models with the temperature anomalies used to capture climate change. On the other hand, we analyze their robustness using precipitation anomalies.

4.1 Interpretation of basic results

The models are globally significant at the 1% threshold because the p-value associated with the Fisher statistic is less than 0.01. However, before providing an interpretation of the coefficients of the variables associated with these models, it is important to validate them. This validation is based on the first- and second-order autocorrelation tests of Arellano and Bond (1991) and

[1] Since our dependent variable is five-year, to construct our database, we calculated five-year averages for all our explanatory variables.

[2] In most environmental studies, anomalies are calculated as the difference between the level of precipitation (temperature) and its long-term average divided by its long-term standard deviations. In line with previous studies (Marchiori et al.,2012) we consider the long term over the period 1901 to 2000.

on Hansen's instrument validity test. After the estimates, we find that the p-value associated with Hansen's test is greater than 0.01, thus attesting to the significance of the instruments. With respect to the Arellano and Bond tests, a first-order autocorrelation is observed which disappears at the second order. With these verifications done, we can interpret the results.

Table 1 presents the results of the estimates of equations 1 to 4. However, we divide our sample according to the size of the share of transfers in the countries from which column (5) is derived. After reading the table, we observe in column (1) that the coefficient associated with the climate change proxy (0.205) is negative and significant. This result means that migration is not used as an adaptation strategy to face the negative consequences of climate change in SSA. Individuals are certainly forced to undergo these hazards due to financial constraints. Indeed, undertaking international migration and not internal migration requires costs that the majority of people living in SSA cannot afford. However, they may also opt for other coping strategies. This finding corroborates those of Ruyssen and Rayp (2014).
Column (2) reveals that remittances can be used to support the costs of international migration. The coefficient associated with migrant remittances (0.042) is positive and significant. This implies that this financial resource could be used to finance migration or at least to cover costs related to the migration process. The conclusions of the empirical work of Damette and Gittard (2017) also espouse this idea.
We also note an abnormal fact which is that the coefficient associated with the economic opportunity proxy changes its sign compared to column (1) and becomes negative but remains significant. One explanation could be that the introduction of remittances into the model may then considerably reduce the incentives for individuals to migrate in order to take advantage of better economic opportunities (better wages). Migrant remittances can bridge the income gap between two countries. Drabo and Mbaye (2017) in the same vein show that remittances from migrants considerably alleviate economic hardship.
Column (3) presents the results of model (3). The variables remittances and climate change are introduced and are consistent with previous discussions.
Column (4) highlights the "cushioning" role of remittances. Indeed, the coefficient associated with the interactive variable temperature anomaly and remittances (0.017) is negative and significant. This result reveals that remittances mitigate the effects of climate change on international migration. Indeed, compared to column (1), the coefficient associated to remittances (0.205) is negative and significant. The negative effects of climate change on international migration are thus considerably reduced. The conclusions of the empirical work of Damette and Gittard (2017) are related to these results.
In column (5), we split our sample according to the dependency on remittances and we observe that the sign associated to the interacted variable (temperature anomalies and remittances) becomes positive. This implies that large remittances could allow family reunification more easily and facilitate migration. This indicates that, in addition to diminishing the negative effects, remittances can be used to finance migration.

Table 1: The Effects of climate change (Temperature Anomalies) on International Migration: The Role of Migrant Remittances

Dependant variable : ***international Migration***				Estimation Method : ***GMM***	
	(1)	(2)	(3)	(4)	(5)
Climate change	-0,205***		-0,263**	-0,278**	-0.155*
	(13,56)		(2,83)	(2,91)	(2.02)

Remittances (REM)		0,042**	0,059**	0,090**	0.037
		(3,89)	(2,42)	(2,80)	(1.38)
REM*Climate change				-0,017**	0.234**
				(2,58)	(3.53)
Social network	0,277***	0,232**	0,217***	0,204***	0,262***
	(23,19)	(9,52)	(5,48)	(5,28)	(4.23)
Economics Opportunities	0,001	-0,028***	-0,030***	-0,026***	-0,041***
	(0,40)	(7,27)	(5,55)	(4,70)	(6.14)
Urbanization	0,072***	0,035*	0,009	0,010	0.000***
	(6,24)	(1,89)	(0,25)	(0,26)	(0.000)
Conflict	-0,482***	-0,301**	-0,096	-0,406	-0.182
	(11,85)	(3,92)	(0,77)	(1,58)	(0.78))
Constant	-0,409***	-0,853**	-1,171	-1,672**	-0.667
	(6,81)	(4,74)	(2,53)*	(2,92)	(1.13)
Threshold REM					0,66
AR (1)	0,002	0,047	0,084	0,061	0,080
AR (2)	0,734	0,295	0,150	0,101	0,162
Hansen	0,349	0,348	0,222	0,249	0,424
Prob > F	0,000	0,000	0,000	0,000	0,000
Observations	261	182	182	182	182

Note: Robust standard errors in parentheses; superscripts (***), (**), 1 (*) indicate significance at 1% ,5%,10%.

4.2. Interpretation of robustness results

To ensure the robustness of our results, we use another climate change proxy: precipitation anomalies. The estimation results compiled in Table 2 are globally similar to those in table 1. remittances reduce the effect of climate change on international migration and in the most receiving countries they may even finance migration. Therefore, a minimum of $8 millions is needed for the effects of climate change to be absorbed. Unlike table 1 where a minimum of 0,66 million needed. These results corroborate those of the empirical literature on the beneficial role of remittances following shocks (Mbaye and Zimmerman,2016).

Table 2: The Effects of climate change (Rainfall Anomalies) on International Migration: The Role of Migrant Remittances

Dependant variable : ***International migration***				Estimation Method : ***GMM***	
	(1)	(2)	(3)	(4)	(5)
Climate Change	-0.153		0.602***	-0.641	-0.723
	(4.06)***		(2,83)	(0.93)	(1.21)
Remittances		0.103***	0,092***	0,080***	0.017**
		(8.82)	(7.95)	(8.50)	(2.85)
REM*climate change				-0,002	0.090**
				(0.04)	(2.43)
Social Network	0.253	0.112***	0.183***	0.301***	0.295**
	(25.99)***	(10.50)	(6.39)	(11.57)	(16.77)
Economics	0.001	-0,027***	-	-0,056***	-0.038**
Opportunities	(0.60)	(17,20)	0,053***	(9.42)	(20.33)
			(10.58)		
Urbanization	0.061	0,053**	0,082**	0.69**	-0.007
	(3.02)**	(2.55)	(2.73)	(2.65)	(0.26)
Conflict	-0.165	-0.653***	-0,886	-0.618***	-0.378**
	(7.52)***	(19.81)	(3.05)	(4.85)	(3.47)

Constant	-0.288** (3.40	-1.891*** (7.68)	- 1,795*** (7.40)	-1.515 (7.63)	-0.065 (0.65)
Threshold REM					8
AR (1)	0.002	0,082	0,084	0,093	0.075
AR (2)	0.720	0,118	0,150	0.211	0.182
Hansen	0.408	0.391	0,222	0.882	0.643
Prob > F	0,000	0,000	0,000	0,000	0.000
Observations	261	182	182	178	178

Note : Robust standard errors in parentheses; superscripts (***), (**), 1 (*) indicate significance at 1% ,5%,10%.

5.Conclusion

The manifestations of climate change are visible in Sub-Saharan Africa (SSA). Many strategies and methods are being implemented to mitigate their consequences at individual, domestic, national and global levels. One way to avoid suffering these disadvantages is to rely on private adaptation mechanisms such as remittances. This paper has analyzed the role of remittances in the relationship between climate change and international migration. The results obtained using a Generalized Moment Method (GMM) approach mainly show that remittances mitigate the effects of climate change on international migration. Moreover, when we take into account the countries that are the majority recipients of migrant remittances, our observations show that migrant remittances can finance migration. Remittances are then an important channel in terms of helping to use migration as a climate change adaptation strategy not only to mitigate the effects of climate change on international migration but also to finance migration. Several implications come from the previous findings. First, the economies of countries receiving remittances should consider mechanisms to encourage migrant remittances in view of their role as a buffer against the effects of climate change. Mechanisms could be implemented to reduce the costs of transfers. The scale of these funds should also encourage States to put in place mechanisms to direct them to more efficient employment in order to have maximum benefit from them in addressing the effects of climate change. In the medium term, policies to promote the investment of remittances in productive uses that are more resilient to shocks should be encouraged. However, there are gaps in this research that can be filled by further research. It would be relevant to consider natural disasters in order to have a global vision of the role of remittances in environmental migration. In addition, other comparative studies on the cushioning role of Official Development Assistance (ODA) and migrant remittances are also to be encouraged. Moreover, an analysis of the ex-ante and ex-post role of migrant remittances can also considerably help to deepen the literature.

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Appendix

List of countries

Benin, Botswana, Burkina Faso, Burundi, Cape Verde, Cameroon, Central African Republic, Chad, Democratic Congo, Côte d'Ivoire, Ethiopia, Gabon, Gambia, Ghana, Guinea, Kenya, Lesotho, Madagascar, Mali, Mauritania, Mauritius, Mozambique, Namibia, Niger, Nigeria, Senegal, Seychelles, Sierra Leone, Somalia, Tanzania, Togo, Uganda, Zambia, Zimbabwe.