

Responsibility Sharing and the Economic Participation of Refugees in Chad

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Abstract

The Global Compact on Refugees recognizes the importance of responsibility sharing for hosting, protecting, and assisting refugees, while emphasizing the potential of economic participation to reduce the cost of humanitarian assistance. This note explores the relative importance of aid in caring for refugees hosted in Chad and the importance of the incomes earned by the refugees. It finds that the combination of aid and self-earned incomes falls far short of a minimum standard of living (the poverty line) as a consequence of which the vast majority of refugees lives in abject poverty. It also finds that although refugees are hosted in camps with relatively few economic opportunities,

self-generated income covers 54 percent of the poverty line and aid only 14 percent. As Chad has adopted a policy of refugee inclusion and dispersion, the note then explores how much these progressive policies might increase the income earning potential of refugees. This is found to be substantial. Economic participation policies are estimated to reduce refugee poverty from 88 to 50 percent (thus increasing the self-sufficiency of refugees dramatically), while increasing the incomes generated by poor refugees by more than 50 percent. The greatest participation benefits will be realized when refugees move to areas with more economic potential.

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Responsibility Sharing and the Economic Participation of Refugees in Chad

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JEL (F35; F29; J49; J61)

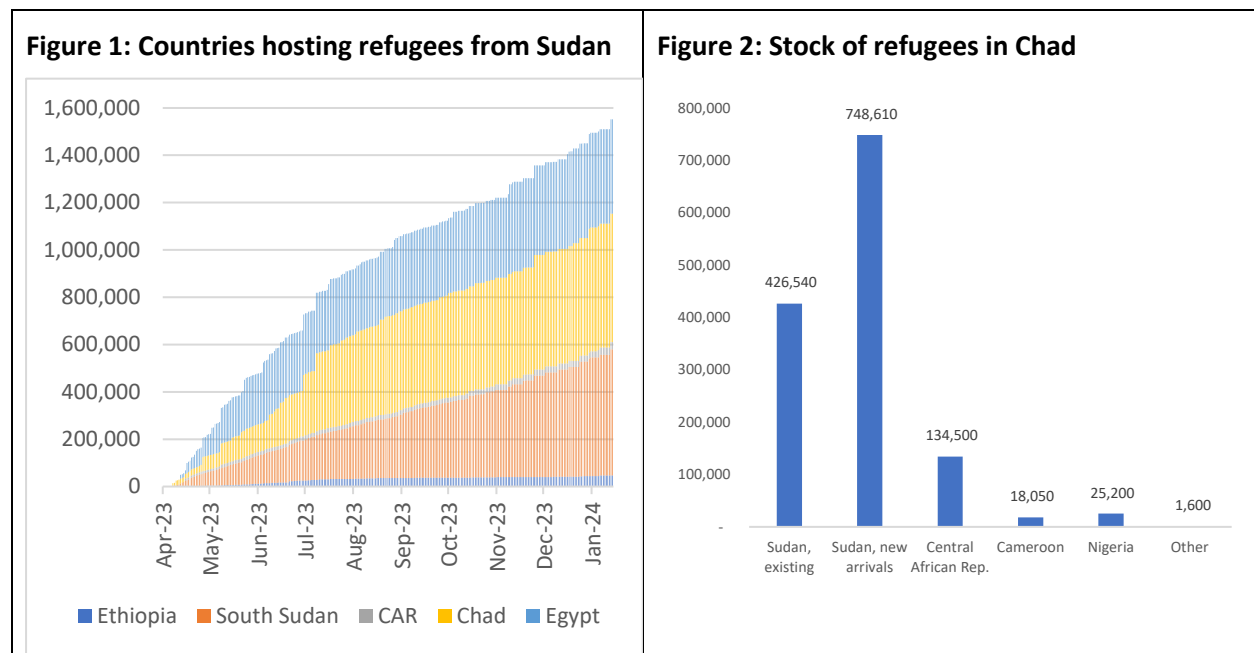
1. Introduction

Since the start of the conflict in Sudan in mid-April 2023, large numbers of civilians have been forced to flee. Hundreds of thousands of people have moved into neighboring countries, notably to the Central African Republic, Chad, the Arab Republic of Egypt, Ethiopia and South Sudan.

In response to the crisis in Sudan, Chad is demonstrating tremendous solidarity and generosity. An impoverished country itself, Chad now hosts more than 1.3 million refugees (almost 8 percent of its population) including, as of February 2024, some 550,000 recent arrivals from Sudan with the number expected to increase further. Yet, doing so also forces the authorities to make tough choices in balancing its support towards refugees and its responsibilities to its own citizens. The international community's response and support to Chad have been rapid and substantial, which has helped ease some of the immediate emergencies.

However, situations end up being protracted (Devictor and Do 2017), and after an initial period, international funding for the refugee response tends to decline. (To illustrate, this note finds that aid covers only 14 percent of the cost of subsistence of existing refugees from Sudan.)

In the face of these empirical realities and with limited prospects for a voluntary and safe return of refugees to Sudan, the question arises, what might be a sustainable approach to hosting refugees, and how could the Government of Chad and the international community bring it about? Increasing the financial autonomy of refugees to minimize reliance on humanitarian assistance seems critical. Not only does such a policy enhance the dignity and autonomy of refugees, it also creates savings in the amount of assistance needed thus frees up resources to invest in host communities and to unlock the productive potential of refugees.



Source: UNHCR, February 2024.

The Government of Chad subscribes to this logic as evidenced by the application decree of Chad’s Asylum Law signed in 2023,¹ and the National Response Plan to the Impact of the Sudanese Crisis which is under preparation. The Law and the Plan promote the local integration of refugees, aim to avoid settling refugees in permanent camps and promote self-sufficiency. They offer refugees the right to own land, to engage in formal employment and commercial activities, to move freely, and to access to banking services. While participation is the stated policy objective, the reality is that previous arrivals are almost exclusively living in camps, and that the new arrivals live in “organized sites” (as humanitarians now call them), presumably to cope with massive arrivals but with little concrete evidence for the onward movement of refugees.

This note explores the size of this four-way benefit (for refugees, hosts, the Chadian state and the international community) by estimating how much could be saved on aid for basic needs consumption by enabling refugees from Sudan to realize their economic potential.

For its empirical work the note draws primary on data from the ECOSIT4 survey.² In 2018–19, Chad became one of the first countries in Africa to capture refugees and host communities in its national household survey. The Refugees and Host Communities Household Survey expanded the national Household Consumption and Informal Sector Survey to include a representative sample of refugees and host communities, including Sudanese and host communities located in the east of the country.

The remainder of this note is organized as follows. Section 2 presents a short discussion of the literature on the economic participation of refugees. Section 3 compares the characteristics of newly arrived refugees from Sudan with previous arrivals for whom survey data is available, to find that both groups are highly comparable. Section 4 uses the existing data to explore how the basic needs refugees are covered from own-income. Sections 5 and 6 dig deeper by exploring econometrically the correlates of higher incomes of refugees. A discussion of the results and their policy implications follows in section 7, after which section 8 concludes.

2. Benefits of economic participation of refugees

Whether or not the arrival of Sudanese refugees in Chad contributes to economic growth is of limited immediate relevance as concerns about the safety of fellow humans drive the response. Nor does any decision maker suggest that hosting refugees is a development strategy Chad should pursue. But, given the presence of thousands of refugees in the country, the constrained fiscal space the authorities face, and the likelihood that international assistance for refugees will taper in the future, an imminent policy question is how to ensure that refugees can be hosted in a sustainable manner, without becoming a fiscal burden in the future.

The fear that refugees are (or might become) a fiscal burden is driven by a broadly held perspective about forcibly displaced persons in general, and refugees in particular, namely that they are humanitarian subjects, vulnerable and worthy of public assistance (Betts and Collier 2017). This perspective is not universal, however. The economic contributions of refugees have been extolled for years, from posters

¹ <https://www.ecoi.net/en/file/local/2091861/645b938a4.pdf>.

² Enquête sur la Consommation des ménages et le Secteur Informel au Tchad. The survey was carried out jointly with the National Statistics Office (Institut national de la statistique, des études économiques et démographiques, INSEED) and the UNHCR in Chad.

reminding people that Albert Einstein was a refugee to campaigns calling on governments to allow refugees to work (Crawly 2017). Indeed, research on Syrian refugees who arrived in Europe from 2015 onwards by Aiyar et al. (2016) shows how their arrival led to modest increases in GDP growth in the short run. This growth, however, was mostly due to additional fiscal spending. The impact on medium and long-term growth is found to depend on how refugees are integrated in the labor market.

There are lessons to be learned from this European experience for Chad. Like in Europe it is plausible that the arrival of many new refugees and the associated inflows of donor resources increase economic growth in the short run. The long run impact is more uncertain, however, and depends on policy choices on how to treat refugees.³ Considering refugees less as passive recipients of aid, and more as untapped resources that can economically contribute brings self-evident advantages. After all, refugee labor, skills and ingenuity are a resource which is better to be tapped than allowed to go to waste. It is preferable not to spend fiscal resources on food assistance and shelter when this can be avoided by allowing refugees to fend for themselves.

Participation of refugees in the economy reduces the need for humanitarian assistance but creates frictions too. Particularly when refugees compete for scarce resources such as food, land or jobs, decision makers may be hesitant to promote the economic participation of refugees.⁴ Frictions arise when there is a zero-sum situation, meaning that more for one party implies less for the other. Such tensions are more likely when the refugee population is clustered in a small geographic area with limited resources and opportunities available. They also arise when there are winners, such as employers who profit from the supply of cheap labor and increase in demand, and losers such as unskilled labor which now has to compete with refugees for jobs. But economies are not zero-sum environments, especially not in the long run, and with the right policies the new human resources will add to the economy.

This is not to deny that when the economy adjusts to the shock of the arrival of many refugees, or when certain sub-populations are negatively affected, flashpoints arise which can easily lead to social tensions and possibly even undermine support for inclusive refugee hosting policies. Indeed, high food prices have been reported as among the main welfare shocks hosts and refugees face in Chad (World Bank 2021) and increased demand for food from newly arrived refugees poses a welfare risk to net buyers of food – typically the poorer households. But with the right policy response --World Bank (2021) proposes a gradual shift from in-kind food assistance to cash assistance -- greater local demand for food will stimulate agricultural production, enrich local farmers and thicken the market for food. Additional land can be brought under cultivation; new jobs can be created.

³ Analysis by Engler et al. (2023) of refugee flows into emerging and developing countries, by contrast, does not find evidence of positive economic growth effects on the host country. While migrant labor to advanced economies features important complementarities with that of the native-born population (Alesina, Harnoss and Rapoport, 2016), refugees are typically different from “economic” migrants as they have little time or opportunity to best select their destination country. Their choice to migrate is driven by factors such as the risk of physical harm and vulnerability to persecution (Brell, Dustmann, and Preston 2020). When the match is strong and migrants’ skills and attributes meet the needs of their destination country, the benefits can be significant (World Bank 2023). When this is not the case, the benefits disappear as Engler and colleagues suggest.

⁴ The economic impact of refugee presence is often intertwined with the impact that the conflict in the country of origin is having on host communities by disrupting the country's supply chain and the flows of remittances, as is currently the case in Eastern Chad, which can exacerbate resentment towards refugees.

It does not surprise, therefore, that the empirical literature finds a range of positive and negative effects associated with the inflow of refugees (Becker and Ferrara, 2019; Verme and Schuettler, 2021), but much depends on the policy response. Camps, once created, are rarely temporary and tend to trap refugees in humanitarian dependency. When many refugees are hosted in the same location, the impact on the local economy will be greater. When, instead, refugees are free to move and settle, not only are the effects spread spatially, but also the possibility of a productive match with refugee skills and preferences increases.⁵

If friction dissipates with time as the economy adjusts, it would be preferable to incur it early during a refugee emergency, when international resources are still relatively ample. Aware of the fact that most refugee crises are protracted, pro-active decision makers embrace economic participation early. Planning for economic participation covers many aspects, which can be summarized under three broad headings: *rights*: will refugees be given the same legal rights as citizens with respect to work, mobility, ownership and access to services; *protection* how are refugees who are particularly vulnerable protected –legal protections but also the assurance of personal security and a minimum standard of living; and *productivity*: what can be done to restore the productive capacity of people who lost most of their productive assets (physical, financial, but also social capital) when fleeing their country (Krishnan et al., 2020; Ibanez and Moya, 2010; World Bank, 2019). Beyond these refugee-focused priorities, economic participation is more likely to succeed if it is part of a broader policy to boost the economy in receiving areas at large and to better connect these areas with economic nodes. This is particularly critical in countries where refugees are hosted in remote border regions that are far or disconnected from centers of economic activity.

There is much to learn on this from the empirical literature, including from the region. Uganda’s regulatory framework with respect to refugees for instance, has been found to lead to greater mobility, higher incomes, and more sustainable sources of employment (Betts et al. 2019). Uganda’s land allocation model, in which refugees are offered a small piece of land to farm, is successful in that it leads to better food security outcomes. At the same time, the plots of land tend to be too small, or of too low quality to allow for full socio-economic autonomy. Refugees who have moved to cities do better economically, but also lose access to assistance programs.⁶ Evidence from the Kalobeyei settlement in Kenya, which experimented with promoting refugee self-reliance in a camp located in a remote border area shows that refugee-autonomy increases while dependency on aid remains as jobs are created in shops accepting cash-based food assistance, or in NGO programs. Yet garden plots improved dietary diversity, and cash-for-shelter does stimulate the market for construction.

Living in camps is associated with higher inactivity in Türkiye (Kayaoglu and Erdogan, 2019) and greater aid dependency (Betts 2021); in Jordan refugees living in camps are also found to be more dependent on aid and to earn less than refugees who live in host communities (Hoogeveen and Obi 2024). Providing Venezuelans with a legal resident status increased their consumption and income and decreased their

⁵ Results for policies to disperse populations of refugees geographically within high-income countries consistently show that not allowing refugees freedom of movement and settlement has negative impacts on their economic outcomes (Aksoy et al., 2020; Azlor et al., 2020; Fasani et al., 2022; Marten et al., 2019; Edin et al., 2003).

⁶ Betts, Alexander, Imane Chaaara Naohiko Omata Olivier Sterck. 2019. Refugee Economies in Uganda: Alexander Betts Imane Chaaara Naohiko Omata Olivier Sterck What Difference Does the Self-Reliance Model Make? (Oxford: RSC).

food insecurity compared to those residing irregularly in Colombia (Ibanez et al., 2022). In Uganda the right to move and do business lowered transaction costs for economic activity by protecting refugees from extortion (Betts 2021). Social transfers can compensate at least in part for the loss of assets and income (Quattrochi et al., 2019). They allow households to cover their basic needs, invest in education and health, reduce child labor, and lift financial constraints that prevent them from searching for higher-quality jobs and taking more risks; they can foster social integration if administered correctly (Aygun et al., 2021; Caria et al., 2020; Chaaban et al., 2020; Lehmann and Masterson, 2014).

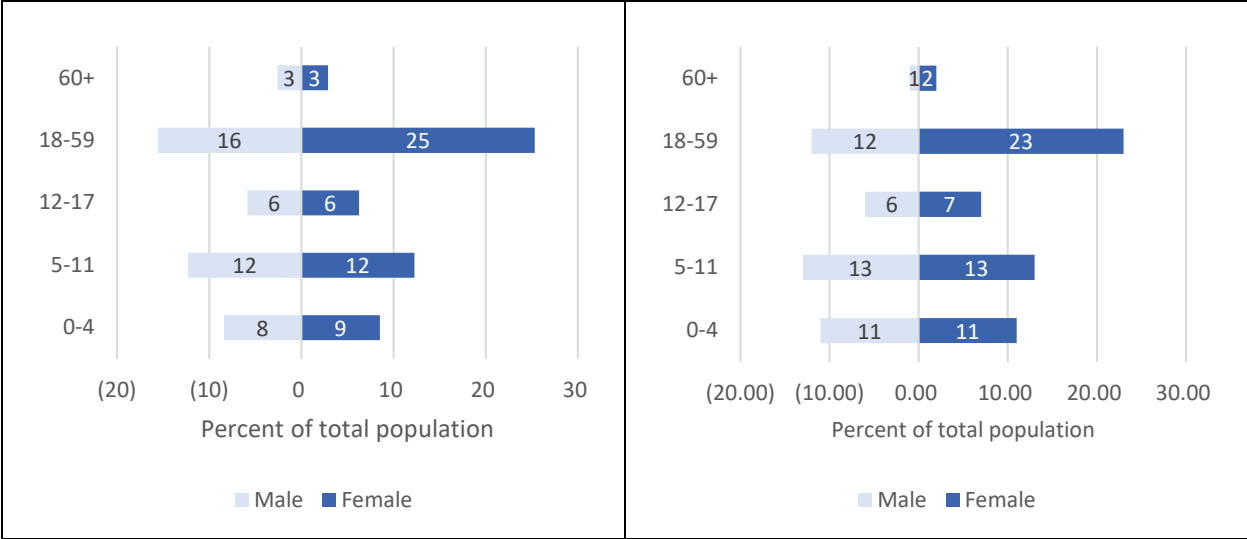
With the right policies and support from the international community, hosting refugees and enabling their financial autonomy is more likely to become a boon and less likely a fiscal burden. The objective of the remainder of this paper is to explore how this can be realized. The approach taken is to identify how much allowing refugees to work saves on assistance for basic needs under various scenarios of economic participation. These savings are not only substantial; they are also permanent and can benefit all parties involved. As such they can become the catalyst needed to align interests around the shared objective of refugee participation.

How might this work? In the short run during the initial phase of the crisis, international agencies are expected to finance the burden of assistance to refugees, while it is upon the Government of Chad to allow refugees the right to work. When their stay extends and refugees start to earn some income, their earnings make it feasible to reduce the amount of aid needed for consumption support. These savings, it is argued, should be used to invest in host communities to address any short-term frictions that may have arisen. And they should be used to accelerate the restoration of the productive potential of refugees, thus laying the foundation for even greater savings in the future. In the medium term, when the economy has adapted and frictions have dissipated and when refugees have become financially more autonomous, international agencies can reduce their financial support and align it with the remaining needs.

3. Comparing new and old refugees from Sudan

There exists limited information about recently arrived refugees in Chad, and the available data only pertains to those who registered with UNHCR. Based on what is known it seems safe to conclude that the characteristics of refugees who recently registered do not vary much from those already present in Chad. The age and gender pyramids are broadly similar. Both cohorts of Sudanese refugees have a surplus of women and children: women make up 56 percent of the recent arrivals, almost identical to the 55 percent among existing refugees. Children under 18 represent the majority of refugees, comprising 61 percent among the recent arrivals, and 53 percent for existing refugees. The fraction of people of working age, those between 18 and 59, makes up 41 percent among existing refugees and even less, 35 percent, among recent arrivals. Consequently, the dependence ratio is high: 2.7 dependents for every person of working age among the existing refugees and 3.2 among recent arrivals.

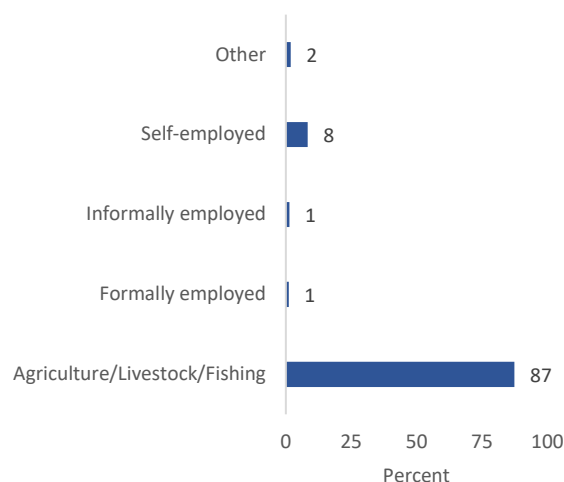
Figure 3: Age and Gender Pyramid of existing refugees	Figure 4: Age and Gender Pyramid of newly arrived refugees
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Source: World Bank 2021; UNHCR December 2023

With respect to the sector of employment, recently arrived refugees from Sudan and those who already resided in Chad are broadly comparable too. Though categorizations differ between those included in the ECOSIT IV survey and those included in the ongoing UNHCR registration process, it is evident that the vast majority is engaged in the primary occupation of agriculture, livestock rearing or fishing. Of the existing refugees, 92 percent indicated to have this as their sector of occupation, against 87 percent of the newly registered refugees.

Figure 5: Sector of employment prior to arrival in Chad of newly registered refugees



Source: UNHCR December 2023.

In view of the likeness of recently arrived refugees and those who have stayed in Chad longer, the remainder of this paper extends the description of Sudanese refugees staying in Chad as captured by the ECOSIT IV survey, with a particular focus on differences between better and worse off refugee households.

4. Poverty, refugee income and assistance

When analyzing the potential fiscal burden refugees might present, poverty measurement takes on particular relevance, for at least three reasons.

First, the poverty line, the yardstick against which consumption is compared to determine whether a person is poor, presents an objective standard for the minimum level of consumption needed to assure a dignified life. In a global context, the International Poverty Line is used to cost Global Basic Needs (World Bank and UNHCR 2024). As this note focuses on Chad, the national poverty line of FCFA 684 per refugee per day is used as benchmark.⁷

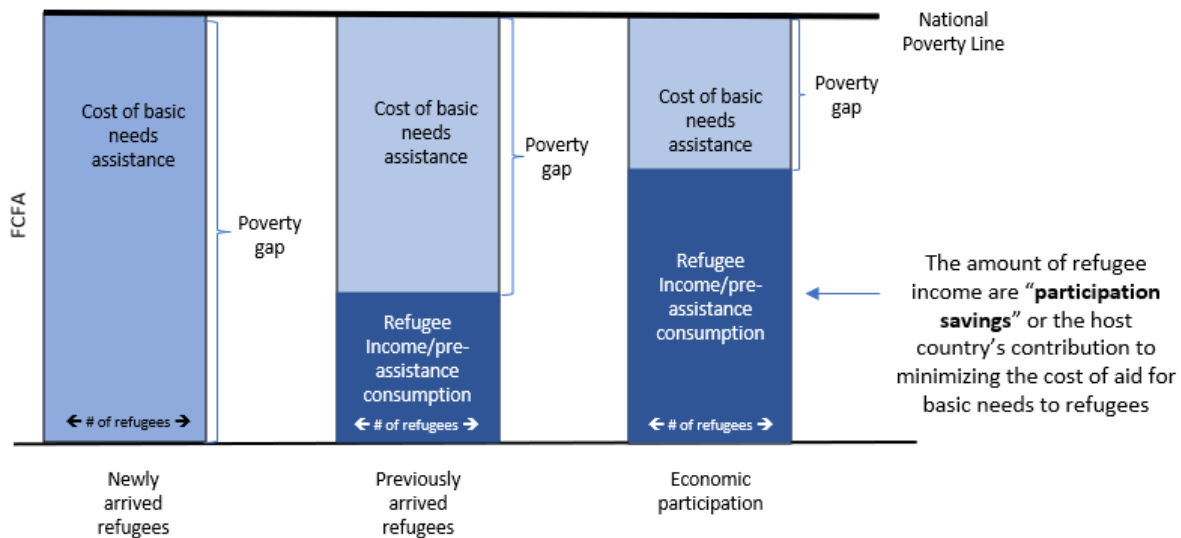
Second, a straightforward way to estimate income earned by poor refugees is by deducting the (pre-assistance) poverty gap⁸ from the poverty line. This difference reflects the average amount poor households consume net of humanitarian assistance and is a good proxy for the income earned by poor

⁷ Typically, poverty lines consist of two parts. The first part covers a food allowance needed for adequate nutrition based on a minimum caloric intake (2,400 calories in Chad) using a locally relevant basket of goods. The second part covers a non-food allowance reflecting the cost of essential non-food items such as clothing, shelter and private expenses on health and education (Ravallion 1998). Those individuals who consume less than the poverty line are considered poor.

⁸ The poverty gap is calculated as $g = \left(\frac{1}{N}\right) \sum_{i=1}^H (z - y_i)$ where N is the total population, H is the total population of poor refugees (who are living at or below the poverty line z) and y_i the consumption of the poor individual i .

refugees.⁹ Obtaining accurate estimates of income is notoriously difficult, particularly when income is derived from agriculture, as is the case in Chad (Deaton 1997; Carletto 2022) or from informal sector activities. This the more if households are assumed not to (dis)save, a plausible conjecture for refugees who often live on the brink of survival.

Figure 6: Using the poverty line and poverty gap to identify fiscal needs for basic needs assistance.



In combination the poverty line and pre-assistance consumption can be used to determine the amount of assistance needed to ensure a dignified life for refugees. This is illustrated in Figure 6 whereby a distinction is made between newly arrived refugees, who are assumed not to earn any income and to be fully dependent on humanitarian assistance, previously arrived refugees, who do earn some income but not sufficient to reach the poverty line, thus creating dependence on assistance as well, and a hypothetical, participation scenario, in which opportunities for income generation by refugees are maximized. By design, the need for assistance is reduced the greater the income earned by refugees; it might even reach zero if own earned income reaches or exceeds the poverty line.

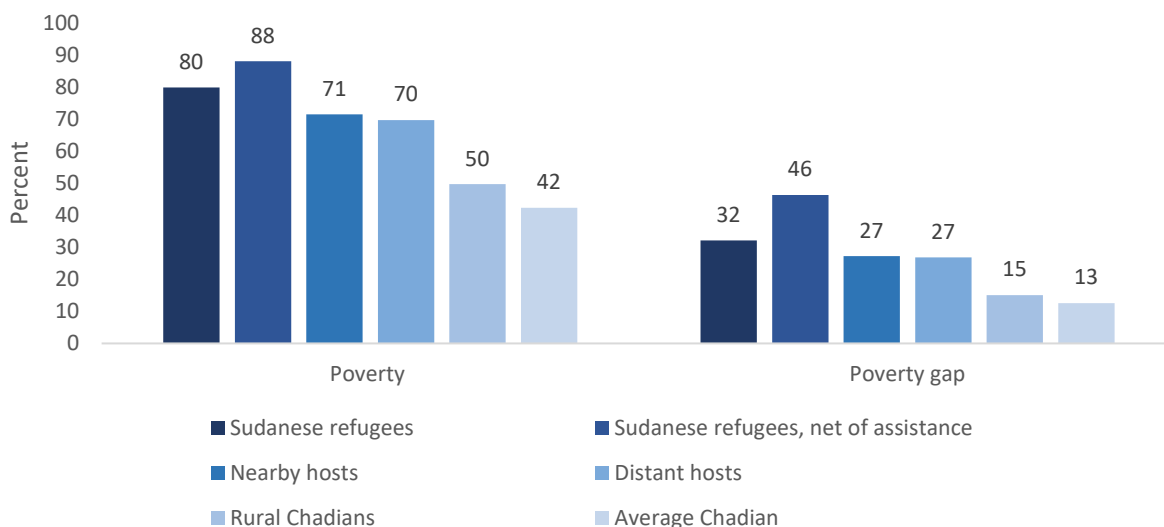
Third, the pre-assistance consumption or income represents the *inclusion dividend or participation savings*, a concept first introduced by Hoogeveen and Knippenberg (2023). It reflects the reduction in fiscal spending on humanitarian assistance made possibly by national policies that allow refugees to earn their own income. Participation savings are smallest when refugees have just arrived and earn (almost) no income, and is maximized when economic inclusion is successful. Participation savings can also be measured as the difference between the poverty line and the aid needed to bring refugees to the poverty line.

Applying these concepts to refugees from Sudan residing in Chad, one finds that the prevalence of poverty is extremely high. Eighty percent live below the national poverty line (Figure 7). The incidence of poverty

⁹ The receipt of remittances, while not a productive income generating activity, is part and parcel of a household's income generating potential and is therefore not subtracted from refugee consumption. If it were, it would imply that refugees who receive remittances but who otherwise consume the same amount as refugees who do not receive remittances should receive more in aid.

is higher, 83 percent, if pre-assistance consumption is used. Poverty is also extremely elevated (around 70 percent) among host communities who live within 5km of a refugee camp (nearby hosts) respectively within a 15 km radius (distant hosts). It is much higher than poverty for rural Chadians (50 percent) or the average Chadian, 42 percent, though these numbers are still concerningly high. It illustrates two points: (i) Chad is a country with limited economic means and (ii) Sudanese refugees are hosted in areas with limited economic potential.

Figure 7: Poverty and poverty gap for existing refugees from Sudan and host communities



Source: Staff calculations and World Bank 2021.

Consideration of the poverty gap, also shown in Figure 7, informs about the shortfall of consumption relative to the poverty line. Thus, a poverty gap of 0.32 suggests Sudanese refugees fall on average about a third of the poverty line short on consumption. Given that 80 percent of refugees are poor, poor refugees have consumption levels that are on average 40 percent ($0.32 / 0.80$) below the national poverty line of FCFA 684 per person per day. Without assistance, the depth of poverty would be even worse. It would be 46 percent on average and 52 percent for refugees who are poor ($0.46 / 0.88$).

In combination, poverty incidence and the poverty gap inform about the importance of aid relative to consumption financed by own resources. Some 12 percent of Sudanese refugees generate sufficient resources to have pre-assistance consumption levels which fall above the poverty line, while 88 percent do not. Refugees experience an average shortfall in consumption (relative to the poverty line) of 32 percent, receive 14 percent in assistance ($46 - 32$) and finance 54 percent from self-generated income.

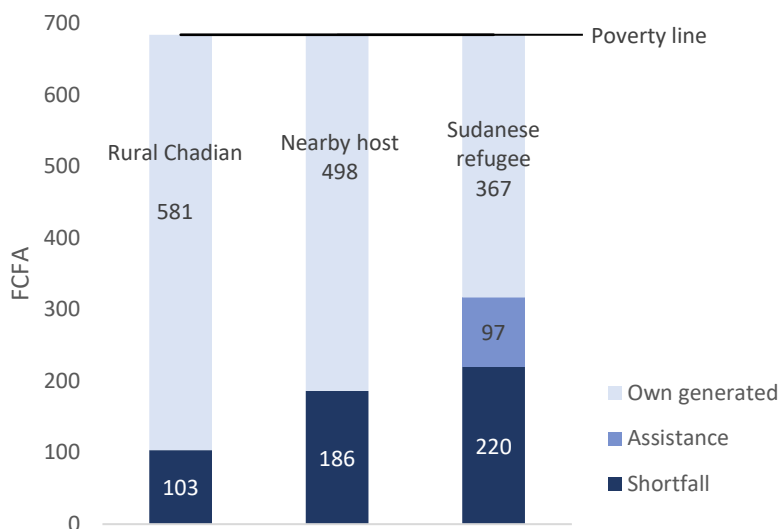
This is reflected again in the last bar of Figure 8. Relative to the poverty line of FCFA 684 per day, the consumption of Sudanese refugees falls short some FCFA 220, almost a third. Refugees consume a total of FCFA 464 per day, of which FCFA 97 is obtained as aid, and FCFA 367 is from self-generated resources. Thus, consumption levels of Sudanese refugees are extremely inadequate, as further evidenced by the finding that 47 percent of Sudanese refugees are unable to meet their minimum caloric intake of 2,400 calories a day (World Bank 2021). Moreover, aid, while critical, is inadequate to bring refugees to a decent standard of living and would have to increase more than 6-fold to bring refugees to the poverty line. Finally, the importance of assistance is dwarfed by the importance of self-financed consumption, which,

despite the adverse economic environment in which refugees are hosted, is eight times more important than aid.

Relative to Chadian hosts, and despite receiving assistance, Sudanese refugees are worse off. This too is reflected in Figure 8, which shows that nearby hosts generate more of their own consumption (worth FCFA 498). Like refugees, Chadian hosts face significant consumption shortfalls: to the tune of almost 27 percent of the poverty line, resulting in some 40 percent of hosts who are unable to meet their minimum caloric intake (World Bank 2021)! Chadians living in rural areas elsewhere are better off than local hosts and refugees, as they generate some FCFA 581 per day of their own consumption. Yet, they too face considerable hardship. Their consumption falls almost 15 percent short of the poverty line and 19 percent is unable to meet the minimum caloric intake (World Bank 2021).

Four implications can be drawn from this: first, not only do refugees need assistance to attain an acceptable minimum standard of living (the poverty line), so do their Chadian hosts. Second, the amount of participation savings is significant: FCFA 367 per refugee per day or 54 percent of the cost of basic needs. This even though refugees live in remote areas with high levels of poverty. In fact, and this is the third implication, Chad’s contribution to ensuring that refugees attain an acceptable standard of living is more than three times larger than the aid contribution by the international community (97 FCFA, or 14 percent of the cost of basic needs). And finally, in terms of the ability to increase participation savings and raise the incomes of refugees, there is potential for growth by allowing refugees to catch up with their Chadian hosts. The potential is even greater if refugees were to attain incomes attained by rural Chadians living elsewhere.

Figure 8: Composition of consumption relative to the poverty line



5. Determinants of refugee earnings and participation savings

The previous section evidenced how minimum basic consumption needs of refugees can be covered through aid and through own earnings. Once a poverty line is selected and the pre-assistance poverty gap estimated, it is possible to calculate the aid needed to bring refugees to the poverty line. The difference between the poverty line and the aid needed to bring refugees to the poverty line are participation savings, which reflect the reduction in aid host countries generate by enabling refugees to earn an income.

Participation savings are zero when refugees are not earning any income and aid covers all basic consumption needs. Under this scenario, aid amounts to FCFA 684 per refugee per day and participation savings are zero. As refugees do earn incomes, the average amount needed from aid is less: FCFA 317 per refugee and participation savings are FCFA 367 per refugee.

While it is relevant to estimate the average amount of aid and the participation savings, it is equally relevant for policy purposes to isolate the primary determinants driving refugee income generation as it helps pinpoint pathways to how the financial autonomy of refugees might be improved.

To identify the factors influencing refugee income generation, and hence participation savings for Sudanese refugees, a simple ordinary least squares regression is run. The dependent variable in this regression is the logarithm of the ratio of pre-assistance consumption to the national poverty line as it proxies self-generated income by poor refugee households. For a poor person, one minus this ratio represents the share of the poverty line required to bring an individual to a level where her basic needs are met. Thus, a higher ratio signifies a lower need for aid, eventually reaching zero for a non-poor person. A positive correlation between the considered dependent variable and a potential correlate indicates a positive association with the reduction of aid (and an increase in self-generated income). The final regression model encompasses a rich set of potential correlates, including household characteristics, human and social capital of the household head, ownership of household assets, and labor market outcomes.

The results of the estimated model are presented in Table 1. As mentioned earlier, variables with a positive coefficient are associated with more earned income (a lower poverty gap), while those with a negative coefficient are associated with less income (a greater poverty gap). Larger refugee households tend to experience a higher poverty gap, whereas a higher level of education for the refugee household head relates to a lower poverty gap and more income. Refugee households with a relatively higher share of dependents are more likely to have a larger poverty gap, to earn less income and require more aid. Human and social capital (having some connection outside the camp) are associated with a reduction in the need for aid and higher incomes for poor refugees.

Surprisingly, concerning asset ownership, the regression results indicate that none of the included assets has a statistically significant association with the need for aid by Sudanese refugees. Likewise, the sector of employment does not appear to influence the ability to generate income, whereas refugee households where the household head is self-employed are more likely to have a lower poverty gap, earn more income and require less aid.

Table 1. Results from OLS regression explaining difference in log ratio of pre-assistance consumption to national poverty line by Sudanese refugee household characteristics.

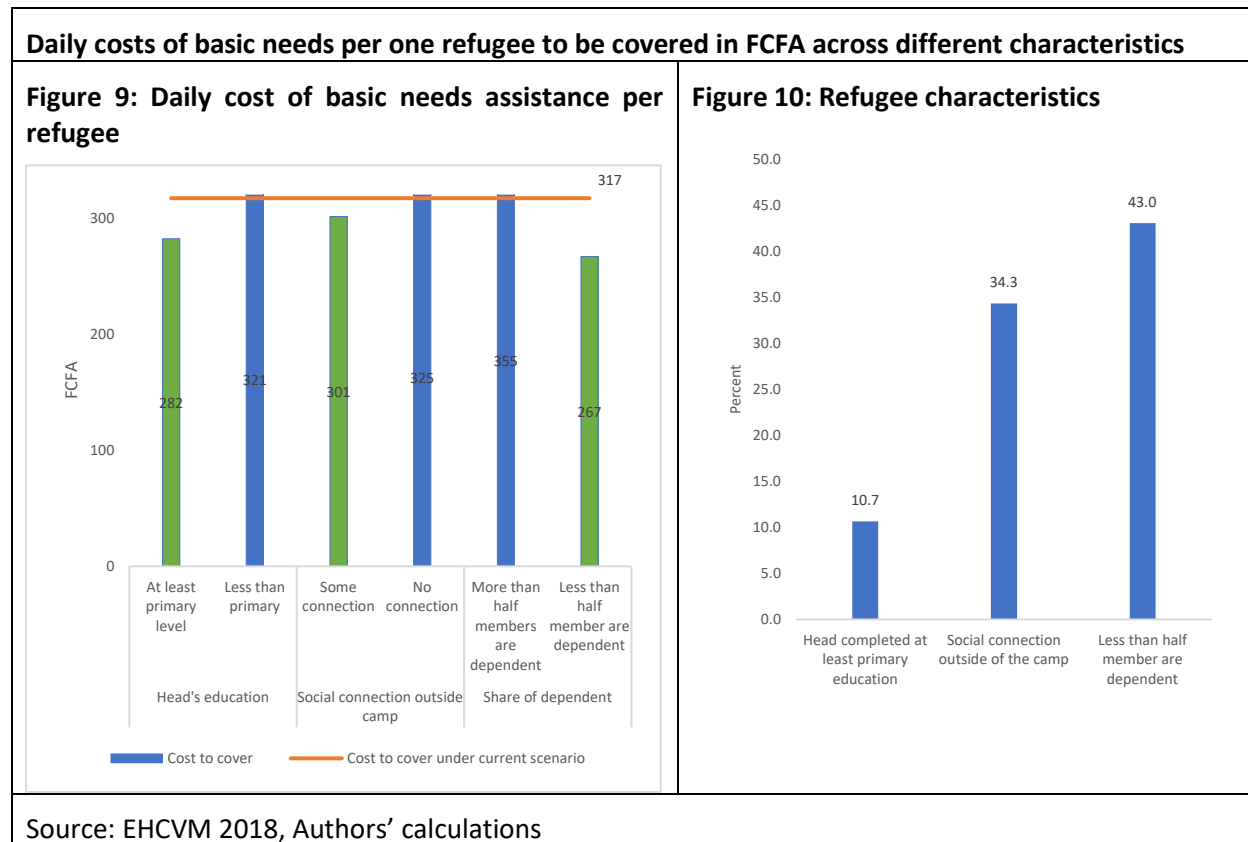
Dependent variable	(log) ratio of per capita pre-assistance consumption to international poverty line		
Household characteristics	Age of household head	0.003	(0.002)
	Female-headed household	-0.067	(0.061)
	Household head is married	0.224	(0.236)
	Household head is widowed/divorced/separated	0.215	(0.256)
	Share of dependents (young and elderly)	-0.515***	(0.114)
	Household size	-0.116***	(0.012)
Human capital	Head has completed at least primary education	0.142*	(0.086)
Assets ownership	Household head has access to land	0.026	(0.066)
	Number of large cattle owned by households	-0.040	(0.052)
	Number of small ruminants owned by households	0.008	(0.009)
	Valuable initial assets	0.190	(0.245)
Social capital	Family connection within the camp	0.033	(0.068)
	Social connection outside of the camp	0.137**	(0.056)
Labor market outcomes	Household head works in agriculture	-0.108	(0.117)
	Household head works in industry	0.061	(0.114)
	Household head works in services	0.114	(0.112)
	Household head is self-employed	0.132*	(0.074)
	Constant	-0.246	(0.265)
	Observations	593	
	Adjusted R-squared	0.210	

Source: EHCVM 2018, Authors' calculations

While understanding the correlates of the pre-assistance poverty gap is crucial, it provides only limited insight into the magnitude of the impact of each identified correlate on the cost of basic needs for refugees. To address this, an additional descriptive assessment is offered of the main correlates by comparing the average cost of basic needs assistance for refugees that would be needed to bring refugees to the poverty line (FCFA 317) with different household characteristics. Assuming away the potential problem of selection bias between groups of refugee households, this comparison enables us to rank the identified correlates based on the magnitude of their reduction effects on the cost of basic needs, from the highest to the lowest premium.¹⁰ Figure 9 shows the daily costs of basic needs per Sudanese refugee in FCFA that need to be covered under the current scenario to ensure these refugees can meet their basic

¹⁰ We view these effects as correlation rather than causal effects.

needs. These costs are organized according to a selected list of poverty gap correlates derived from the previous regression analysis.



The descriptive analysis presented in Figure 9 indicates that the dependency ratio of households emerges as the most important factor in reducing the cost of basic needs aid for the Sudanese refugee population under the current scenario. For instance, refugee households with more than half of their members being dependent fall short some 88 FCFA per day and per person compared with those where the majority of the members are active (aged between 15 to 64). Hence, the active individuals are the most likely to contribute to a refugee household generating income source. Besides, human capital also emerges as a significant factor correlated with a decrease in the costs of basic needs under the current scenario. Notably, achieving at least a primary level of education for a Sudanese refugee household head is associated with an important decrease of more than 10 percent. For instance, the cost of basic needs drops from 321 FCFA per day and per person for refugee households with a household head having less than a primary level of education to 282 FCFA.

In addition to human capital, the social capital of Sudanese refugee households is a somewhat equally important factor correlated with a decrease in the costs of basic needs under the current scenario. Specifically, the costs of basic needs are more than 24 FCFA per day and per person for refugee households with some connection outside the camp, compared to those with no connection.

Figure 10 reveals that the characteristics associated with a significant decrease in the cost of basic needs for Sudanese refugees are unfortunately underrepresented in their population in Chad. Notably, the majority of these refugees belong to households with relatively more dependents, no connections outside the camp, and with a head that has limited educational attainment. For example, only 11 percent of the

Sudanese refugee population comes from households where the head has completed at least a primary education level. In terms of social capital, the majority of Sudanese refugees (about 65 percent) originate from households with no connection outside the camp. This underrepresentation of the factors associated with a substantial reduction in the poverty gap could offer an explanation for the current high level of the cost of basic needs for Sudanese refugees in Chad.

6. Estimating the participation scenario

So far, the analysis focused on identifying those factors which promote refugee income generation. But what might be the upper limit? Estimating this involves two things: controlling for the fact that refugees' personal characteristics are different from those of hosts (see Table 2) while ensuring that refugees are comparable to hosts in terms of labor market access and other critical resources like land. Hence, the evaluation of the cost of hosting refugees under the participation scenario essentially requires constructing a counterfactual cost, which consists of calculating the fiscal cost of aid for refugees under the hypothetical situation where they are fully integrated into the home country economy, have similar levels of assets, and are not discriminated against, for example, in the labor market.

Table 2. Descriptive statistics

	Sudanese Refugees	Nearby hosts	Nearby hosts and rural Chadians
Age of household head	47	47	43
Female-headed household	52%	43%	24%
Household head is married	75%	81%	79%
Household head is widowed/divorced/separated	22%	18%	18%
Share of dependents (young and elderly)	50%	61%	52%
Household size	5.0	4.8	5.2
Head has completed at least primary education	11%	3%	16%
Household has access to land ¹¹	50%	92%	88%
Number of large cattle owned by households	0.2	1.9	4.1
Number of small ruminants owned by households	0.7	8.6	8.1
Household head works in agriculture	47%	80%	80%
Household head works in industry	11%	3%	5%
Household head works in services	23%	7%	11%
Household head is self-employed	51%	82%	90%

Source: EHCVM 2018, Authors' calculations

Categorizing this assessment task as a counterfactual analysis rules out several alternative frameworks commonly used in other contexts, such as a standard Ordinary Least Squares (OLS) regression based on the characteristics of refugees and their host communities. The OLS regression is not suitable in this context for at least two reasons. Firstly, OLS estimates are known to be biased in the presence of selection,

¹¹ Access to land encompasses both landowners and those who, while not owning land, rent at least one agricultural plot from others. As such, involvement in agricultural activities is the primary focus when referring to access to land.

and there is clear evidence of selection, given the statistical differences in characteristics between refugees and their host communities in Chad. Secondly, the cost of aid to refugees only depends on poor refugees (which is why it is based on the poverty gap indicator), which is a non-linear transformation of the welfare indicator. Using a standard OLS regression with a linear approximation of the welfare indicator may not reliably recover the real cost of hosting refugees. Despite a significant body of literature on the value of small area estimation techniques for estimating poverty headcount ratios from OLS (Rao & Molina, 2015), there is a lack of corresponding evidence for other poverty indicators, such as the poverty gap.

Here, an alternative methodological approach is followed to estimate the cost of hosting Sudanese refugees in Chad. The key objective of our framework involves constructing a counterfactual distribution of the welfare indicator for these refugees under the counterfactual that they are fully integrated into the home country system. Specifically, the welfare indicator is assumed to be a function of some observable characteristics, while letting unspecified the functional form dictating the relationship between the welfare indicator and its assumed correlates. As a result, the framework offers greater flexibility compared to, for example, the OLS modeling approach.

The proposed methodology is especially well-suited for evaluating counterfactual nonlinear transformations of the welfare indicator, such as the poverty gap. For instance, this approach is more ambitious as it seeks to estimate the counterfactual distribution of the welfare indicator for Sudanese refugees. Notably, this methodological framework was initially applied to analyze the impact of changes in labor market institutions on the distribution of wages (DiNardo, Fortin, and Lemieux, 1996).

Let the per capita consumption of the Chadian be determined by:

$$y^{loc} = Y^{loc}(z, \mu) \quad (Eq. 1)$$

In (Eq. 1), y^{loc} is the actual per capita consumption of the Chadian, which is expressed as a function of z , a vector of observable consumption correlates, and μ , a vector of unobserved (all other not in z) factors that determine per capita consumption. The function $Y^{loc}(z, \mu)$ is the metric of aggregating the components of the observed correlates vector. This function is left unspecified: no specific functional restriction or assumption. The metric of aggregation can be thought of as the systems and mechanisms under which the characteristics of local Chadian are rewarded in Chad. The vector of correlates z includes important determinants of poverty, such as education and access to assets, etc. (see Table 2).

Following (Eq. 1), by analogy, the per capita consumption, y^{ref} , for the Sudanese refugees can be determined by a similar metric of aggregation, $Y^{ref}(z, \mu)$. The key identifying assumption in this framework is that the unobserved correlate, μ , conditional on the observed correlates, z , has the same distribution for the Chadian and the Sudanese refugees. Under this identifying assumption, the same aggregation metric for the Chadian, $Y^{loc}(z, \mu)$, can be used to construct a counterfactual distribution of per capita consumption for the Sudanese refugees if they were fully integrated, that is, if they were treated as the Chadian. Let $f(y^{loc} | loc, z)$ be the density function of Chadian's per capita consumption conditional on z .

The methodology of DiNardo, Fortin and Lemieux (1996) to obtain $f(y^{loc} | ref, z)$, the conditional density of per capita consumption of refugee participation, is to reweight the Chadian's distribution of (y^{loc}, z) such that the distribution of correlates z after reweighting matches that of the Sudanese refugees. More formally, it can be shown that:

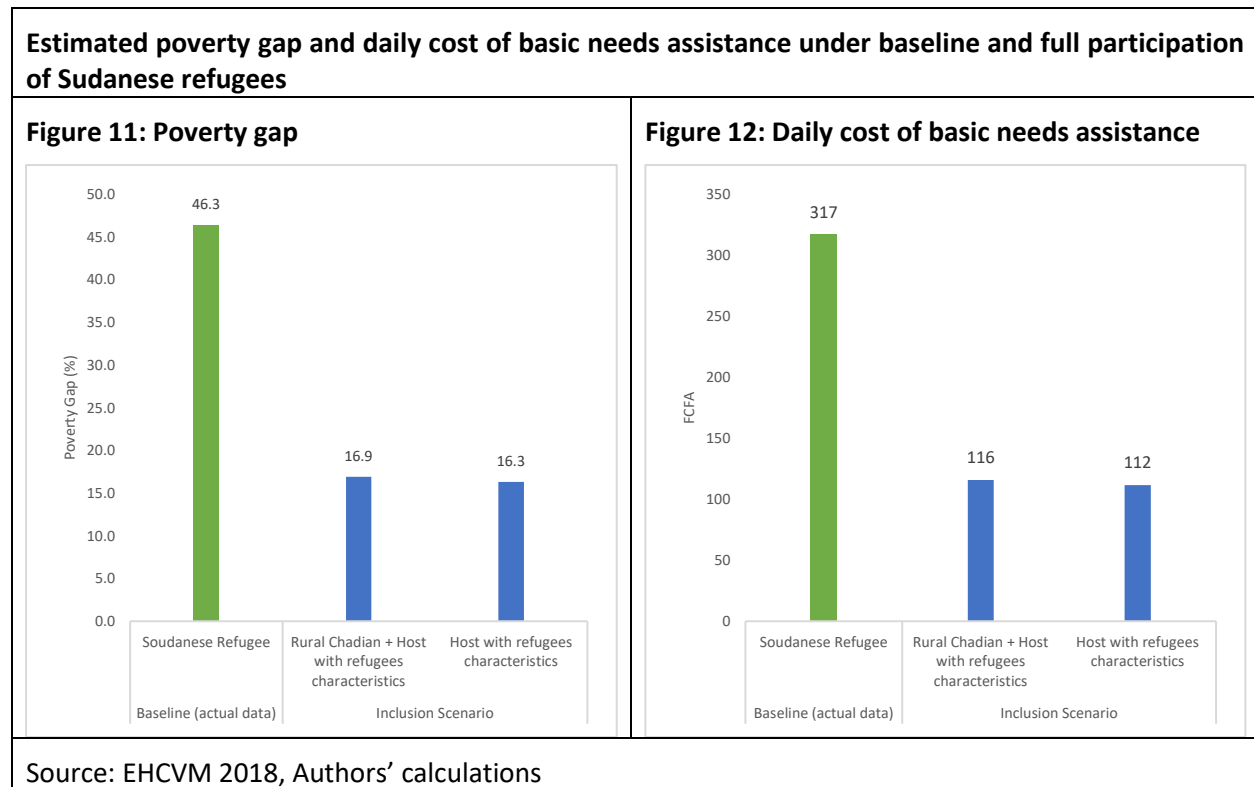
$$f(y^{loc} | ref) = \int f(y^{loc} | loc, z) f(z | loc) \psi(z) dz \quad (Eq. 2)$$

$$\psi(z) = \frac{p(ref | z) p(loc)}{p(loc | z) p(ref)} \quad (Eq. 3)$$

Where the reweighting factor in (Eq. 3), $\psi(z)$, can be easily computed with a well-known discrete choice model (*logit* or *probit*) since the reweight is similar to a propensity score (p stands for probability). In the empirical implementation, a probit model is used to estimate this reweighting factor for three subpopulations of Chadians: the rural Chadians (excluding the host communities), the rural Chadians living in the south and east borders, and all rural Chadians (inclusive of the host communities). Table A1 in the annex reports the estimated probit models for these three subpopulations.

Finally, upon estimating the counterfactual distribution of Sudanese refugees' welfare under the participation scenario, the poverty rates (headcount and gap, etc.) can be deduced by their sample counterparts using the population of Chadians and the estimated reweighting factor (see Table A2). Consequently, the counterfactual cost of hosting Sudanese refugees under the participation scenario is deduced accordingly from the estimated counterfactual poverty gap.

Figure 11 presents the estimated poverty gaps and Figure 12 the associated costs of basic needs assistance for Sudanese refugees under full participation in Chad. Depending on the scenario used they are between FCFA 112 and FCFA 116 per refugee per day, much less than the FCFA 317 which is the present amount of assistance that is needed.



7. Discussion: Economic participation and inclusion in service provision

Assuming a total of 1.17 million Sudanese refugees who are in Chad (of whom 426,000 are existing refugees from Sudan and the remainder new arrivals), it translates into a need for aid to cover the subsistence of all Sudanese refugees to US\$ 543 million. However, since the existing Sudanese refugees already earn incomes, this amount reduces to US\$437 million.¹² If all newly arrived refugees would be as integrated as the existing refugees from Sudan the need for subsistence aid would be: US\$ 252 million. If all Sudanese refugees would be fully integrated economically, the need for assistance could potentially drop to FCFA 112 per refugee per day or US\$89 million.

When considering the factors that might contribute to greater economic participation of refugees, the results are seemingly contradictory. At one level, no evidence is found that access to land or ownership of livestock increases the income of poor refugees (reduces the pre-assistance poverty gap). Only human capital as well as social relations with hosts contribute significantly to increase the earnings of refugees. But when refugees are matched to hosts and when estimating a full participation scenario in which Sudanese are assumed to have comparable access to land and other productive assets, then the poverty gap reduces considerably, and projected incomes increase.

To explain this, it is critical to realize how limited are the economic opportunities open to refugees. First, refugees live in extremely remote areas with so few economic opportunities that even among hosts poverty levels are 70 percent. Second, despite living in rural areas, only 50 percent of refugees engage in agriculture, and of those who do, 90 percent rent their plot of land, thus foregoing an important part of the profits associated with agriculture. Asset ownership by refugees is simply too rare, and the assets owned too few, to make a difference. Whereas 90 percent of the members of host communities own at least one plot of land, the share among Sudanese refugees is only 4 percent. Even among these lucky few, the plots are significantly smaller. While 60 percent of the members of host communities own an average of 12 cattle per household, just 24 percent of Sudanese refugee households own even 3 cattle (World Bank 2021).

Lacking opportunities in agricultural production, Sudanese refugees engage in other sources of employment, notably wage labor. About 40 percent of Sudanese refugees work for a daily wage, compared with only 15 percent of residents in host communities. Yet the average hourly wage for Sudanese refugees is about half that in host communities, mostly because refugees can only access casual low-skill occupations that pay the worst wages (World Bank 2021). Lacking opportunities in agricultural production, Sudanese refugees also engage in other sources of employment, notably businesses, although such enterprises face fierce competition from host communities.

Low assets, and low returns to those few assets refugees possess explain our results. Together they are indicative for future policy directions, which should comprise of a combination of (i) increasing asset

¹² Made up of US\$91 million for existing refugees and US\$346 million for new arrivals from Sudan. Assumes perfect targeting. In practice, leakage to the non-poor may be 30 percent or even more, requiring concomitant higher amounts of assistance. Excludes refugees from other countries, totaling approximately 150,000. Based on the presence of 1.174 million refugees from Sudan, an inflation rate of 12.4 percent since the date of the survey and an exchange rate of FCFA 607 to the dollar. New arrivals are assumed not to earn any income and to require the poverty line in basic needs assistance.

ownership among refugees; (ii) improving the overall economic environment for hosts and refugees and (iii) allowing refugees to move to where economic opportunities are greatest.

Each of these brings its own challenges. If it is envisaged that refugees become active in agriculture, then sufficient land needs to be found that is suitable for cultivation. In addition, the current policy of hosting refugees in large camps would have to be revisited, as the amount of land adjacent to the camps which can be used for agriculture is limited, implying that refugee farmers have to travel large distances to reach their plots. The reason agricultural villages tend to be limited in size and to not be very densely populated is land accessibility. If refugees are expected to engage in agriculture, they need to live close to their land.

More favorable conditions for economic activities in the areas where refugees are presently hosted can be brought about by improving infrastructure and by sourcing more supplies locally. Still the scope for successfully increasing economic activity in eastern Chad is limited. The area is extremely poor for a reason and as the World Development Report on Economic Geography makes clear (World Bank 2009), economic activity tends to concentrate and is rarely successfully dispersed. The ability of policy makers to promote economic activities in lagging areas is limited. Besides investing in local economic development (most likely in the agriculture sector), it is desirable to focus on developing human capital, on promoting integration (by developing infrastructure and accessibility) while allowing labor to move freely.

Indeed, our analysis suggests that allowing refugees to move to other areas where economic opportunities are more abundant would be advantageous: when matched to the average rural Chadian person, the predicted poverty gap for poor refugees declines considerably, while the fraction of poor refugees drops considerably (i.e. self-reliance increases). This approach also brings benefits in terms of dignity for refugees and opportunities for their descendants. Yet free movement brings its own challenges as it would have implications for the provision of assistance which would need to be made portable (most likely through mobile cash transfers), unless a model is followed like in Uganda where refugees are free to leave the camp, but once they do, they forego their right to assistance (Betts 2021). Such an approach goes against a need for social protection for refugees, however, though intermediate solutions might be feasible such as offering start-up capital to those who leave the camps, or reducing assistance only gradually when the household's income rises.

Specific solutions should be identified for those who would be moving to cities or towns, including upgrading urban infrastructure and – since refugees moving to agglomerations tend to spend more on housing and settle in disadvantaged neighborhoods (Rozo and Sviatschi 2021) – subsidizing or promoting affordable housing. More broadly, it will be essential to ensure that towns and cities where refugees settle remain livable so all urban dwellers (both refugees and hosts) can reap the benefits of agglomeration.

Another perceived challenge associated with free movement is security, as host governments often consider it easier to maintain law and order when refugees coming from the neighboring country are clustered in smaller portions of the territory. However, maintaining high refugee numbers in remote areas with limited prospects for self-reliance – and ultimately limited hope for a better future – also comes with its own security challenges in the long run.

Behind this question of free movement lies the little-discussed yet essential question of where refugees are settled or resettled after their arrival on Chadian territory once they are able to leave the entry point. Ideally, since full integration is largely beneficial to all parties involved, there should not be camps (or “organized sites” as humanitarians now tend to name them), or at least camps should be approached as

a temporary logistical necessity to cope with massive arrivals. If there are to be camps, they should be located in areas with economic potential, not in remote areas disconnected from markets and economic activity.¹³ Securing land for camps in such areas will potentially be more expensive than in isolated regions but it is a worthwhile long-term investment, because lack of access to opportunities for refugees is a recipe for long-term dependence on assistance, especially if mobility is hampered by legal or practical obstacles.

8. Conclusion

Since the start of the conflict in Sudan in mid-April 2023, more than 550,000 refugees have arrived in Chad. An impoverished country itself, Chadians have nonetheless shown tremendous solidarity and generosity towards the new arrivals. The international community's response and support to Chad have been rapid and substantial too, which has helped ease some of the immediate emergencies.

While the current level of support and commitment are encouraging, an analysis on how the burden of care for the existing refugees in the country is shared finds lopsided results. Taking Chad's national poverty line of FCAF 684 per person per day as the minimum standard of living expected for refugees, this note finds that 14 percent is provided by the international community as aid, and 54 percent as participation savings, made possible by the Government of Chad by allowing refugees to earn incomes. Refugees 'contribute' 32 percent by foregoing consumption, and experience widespread and extreme poverty.

These findings bear important implications for the current refugee crisis, as it is likely to become protracted (as most crises are) and as it is plausible that the level of international support may taper at some point in the future.

The note argues that the best way to future-proof the refugee response would be to reinforce the ability of refugees to earn incomes. It is an approach with great support among refugees. For instance, when asked for the most important reason for poverty, 54 percent of refugees cited lack of employment, while few attributed their poverty to insufficient assistance (World Bank 2021). The note demonstrates the potential for an income-based approach, by increasing their productive potential in the areas where they are currently hosted, and particularly when refugees are granted the same opportunities as are open to Chadians. If refugees would become as productive as Chadians (and in the absence of any assistance), it is estimated that poverty among refugees would fall from 88 percent to 50 percent, while the income earned by poor refugees would increase to 83 percent of the poverty line, thus significantly reducing the need for consumption support in the form of aid. To increase refugee incomes a combination of three policies is needed:¹⁴

- (i) Restore the productive asset base of refugees;
- (ii) Improve the overall economic environment;
- (iii) Allow refugees to move to where economic opportunities are greatest.

¹³ As was the case for most camps created in the last 20 years in Eastern Chad. The six villages identified to host new camps (Allacha, Arkoum, Metché, Ourang, Tongori and Zabout) are in rural areas that are poorly equipped with what is needed to build human capital (schools and health centers in particular) and poorly connected to the closest towns.

¹⁴ Refugees should also be granted (together with hosts) access to services so they can accumulate human capital. It was not discussed in greater depth as this paper focused on the economic inclusion of refugees.

How could this be financed? During the emergency phase of the crisis, refugee earnings are negligible and international agencies finance most of the assistance offered to refugees. As the crisis becomes more protracted, refugees will start to earn some income. These earnings make it feasible to reallocate some of the aid to invest in the operationalization of inclusion policies, but also in host communities as they may be experiencing short-term frictions associated with the economic participation of refugees. In the medium term, when the economy has adapted and frictions dissipated and when refugees have become financially autonomous, international agencies can reduce their support for refugees and limit their attention to development challenges affecting all people present in Chad (citizens as well as refugees).

The implication is that Chad will need substantive levels of international assistance for a prolonged period of time to adequately deal with its current refugee crisis. It is encouraging that Chad's National Response Plan to the Impact of the Sudanese Crisis, which is under preparation, subscribes to the logic of economic participation as do the 2020 asylum law and its 2023 implementation decree, which guarantee freedom of movement and the right for refugees to settle in places favorable to their economic empowerment.

The challenge is whether the contributions of the international community will be sufficient to make the vision of refugee self-reliance a reality. In addition, to realize it, certain actions will need to be taken right now, during the emergency phase, to assure enabling conditions for inclusive local economic development in the future. These include the selection of camp locations in areas where there is economic potential and a scaling-up of health and education services for both refugees and hosts to avoid further loss of human capital and ensure peaceful coexistence with host communities.

	(1)	(2)
	Model using Host	Model using refugee and Chadian (rural + host)
age	0.025*** (0.005)	0.030*** (0.004)
hfemale	0.391* (0.194)	1.306*** (0.161)
h_married	0.054 (0.671)	0.161 (0.424)
h_divorced	0.044 (0.691)	-0.681 (0.448)
share_dependent	-2.516*** (0.319)	-1.969*** (0.248)
hhsz	0.265*** (0.037)	0.235*** (0.027)
schooling	1.080** (0.336)	-0.057 (0.195)
land	-2.233*** (0.249)	-1.678*** (0.161)
grosum	-0.429*** (0.093)	-0.747*** (0.084)
petitum	-0.170*** (0.025)	-0.343*** (0.029)
branch_1	0.283 (0.354)	0.297 (0.270)
branch_2	1.179**	0.906**

	(0.445)	(0.305)
branch_3	0.443 (0.349)	0.907*** (0.265)
emp_status_1	-0.358 (0.248)	-1.136*** (0.181)
_cons	0.853 (0.763)	-0.717 (0.492)
N	1195	3743
pseudo R-sq	0.360	0.442

Source: Authors' calculations using EHCVM data

Note: *** significant at 1 percent, ** at 5 percent, * at 1 percent. Regression is unweighted.

Table A2. Participation estimates of poverty rates (headcount and gap)

		Poverty Headcount (%)	Poverty Gap (%)
Baseline (actual data)	Soudanese Refugee	88.1	46.3
Participation Scenario	Rural Chadian + Host with refugees characteristics	50.4	16.9
	Host with refugees characteristics	49.5	16.3

Source: Authors' calculations using EHCVM data

References

- Aiyar Shekhar, B. B. (2016). The refugee surge in Europe: Economic challenges. *IMF Staff Discussion Note SDN/16/02*.
- Aiyar, Shekhar, Bergljot Barkbu, Nicoletta Batini, Helge Berger, Enrica Detragiache, Allan Dizioli, Christian Ebeke, Huidan Lin, Linda Kaltani, Sebastian Sosa, Antonio Spilimbergo, and Petia Topalova. 2016. "The refugee surge in Europe: Economic challenges" IMF Staff Discussion Note SDN/16/02.
- Alesina, Alberto, Johann Harnoss, and Hillel Rapoport. 2015. "Birthplace Diversity and Economic Prosperity." NBER Working Paper 18699, National Bureau of Economic Research, Cambridge, MA.
- Alvarez, Jorge ,Marco Arena, Alain Brousseau, Hamid Faruqee, Emilio Fernandez-Corugedo, Jaime Guajardo, Gerardo Peraza, and Juan Yépez Albornoz. 2022. "Regional Spillovers from the Venezuelan Crisis. Migration flows and their impact on Latin America and the Caribbean." IMF Departmental Paper DP/2022/09.
- Aygun, Aysun Hizioglu, Murat G. Kirdar, Murat Koyuncu, and Quentin Stoeffler. 2021. Keeping Refugee Children in School and Out of Work: Evidence from the World's Largest Humanitarian Cash Transfer Program," DP No. 14513, IZA 2021.
- Becker, Sascha O. and Andreas Ferrara. 2019. Consequences of Forced Migration: A Survey of Recent Findings," Labour Economics vol. 59, 1-16.
- Betts, Alexander, Imane Chaara Naohiko Omata Olivier Sterck. 2019. Refugee Economies in Uganda: Alexander Betts Imane Chaara Naohiko Omata Olivier Sterck What Difference Does the Self-Reliance Model Make? (Oxford: RSC).
- Betts, Alexander. 2021. *The Wealth of Refugees: How Displaced People Can Build Economies*, Oxford University Press.
- Brell, Courtney, Christian Dustmann, and Ian Preston. 2020. "The Labor Market Integration of Refugee Migrants in High-Income Countries." *Journal of Economic Perspectives* 34(1): 94–121.
- Caria, Stefano, Grant Gordon, Maximilian Kasy, Simon Quinn, Soha Shami, and Alex Teytelboym. 2020. An Adaptive Targeted Field Experiment: Job Search Assistance for Refugees in Jordan," SSRN Scholarly Paper ID 3689456, Social Science Research Network, Rochester, NY.
- Carletto Gero, Marco Tiberti, Alberto Zezza, Measure for Measure: Comparing Survey Based Estimates of Income and Consumption for Rural Households, *The World Bank Research Observer*, Volume 37, Issue 1, February 2022, Pages 1–38, <https://doi.org/10.1093/wbro/lkab009>
- Chaaban, Jad, Hala Ghattas, Nisreen Salti, Wael Moussa, Alexandra Irani, Zeina Jamaluddine, and Rima Al Mokdad. 2020. Multi-Purpose Cash Assistance in Lebanon: Impact Evaluation on the Well-Being of Syrian Refugees," Technical Report, American University of Beirut Press.
- Coulibaly, Mohamed, Johannes Hoogeveen and Aboudrahyme Savadogo. (2023). Fiscal cost of refugee inclusion in Chad. World Bank. Mimeo
- Crawley, H. Migration: Refugee economics. *Nature* **544**, 26–27 (2017). <https://doi.org/10.1038/544026a>

Deaton, Angus. 1997. *The Analysis of Household Surveys: A Microeconometric Approach to Development Policy* Baltimore, Maryland: Johns Hopkins University Press.

Devictor, X., & Do, Q.-T. (2017). How Many Years Have Refugees Been in Exile? *Population and Development Review*, 43(2), 355–369. <http://www.jstor.org/stable/26622897>

Engler, Philipp ; MacDonald, Margaux ; Piazza, Roberto ; Sher, Galen 2023. The Macroeconomic Effects of Large Immigration Waves. IMF Working Paper No. 2023/259. December 15.

Hoogeveen, Johannes and Chinedu Obi 2024. Measuring Poverty amongst Syrian refugees living in and out of camps. Chapter 3 in Hoogeveen, Johannes and Chinedu Obi (eds). A tripartite win. Fiscal and welfare benefits of the economic participation of Syrian Refugees in Jordan. The World Bank. Forthcoming

Hoogeveen, Johannes and Erwin Knippenberg. 2023. Cost of Hosting Refugees in Jordan. World Bank. Mimeo.

Ibanez, Ana Maria and Andres Moya. Do Conflicts Create Poverty Traps? Asset Losses and Recovery for Displaced Households in Colombia," in Rafael Di Tella, Sebastian Edwards, and Ernesto Schargrodsky, eds., *The Economics of Crime: Lessons for and from Latin America*, University of Chicago Press, 2010, pp. 137-172.

Kayaoglu, Aysegul and M. Murat Erdogan. 2019. Labor Market Activities of Syrian Refugees in Turkey," Working Paper 1290, Economic Research Forum.

Krishnan, Nandini, Flavio Russo Riva, Dhiraj Sharma, and Tara Vishwanath. 2020. The Lives and Livelihoods of Syrian Refugees in the Middle East: Evidence from the 2015-16 Surveys of Syrian Refugees and Host Communities in Jordan, Lebanon, and Kurdistan, Iraq," Policy Research Working Paper No. 9327, World Bank.

Quattrochi, John, Ghislain Bisimwa, Tyler Thompson, Peter Van der Windt, and Maarten Voors, 2020. The Effects of Vouchers for Essential Household Items on Child Health, Mental Health, Resilience, and Social Cohesion among Internally Displaced Persons in the Democratic Republic of Congo," Technical Report, 107 3IE.

Lehmann, M. Christian and Daniel Masterson. 2014. Emergency Economies: The Impact of Cash Assistance in Lebanon," Technical Report, International Rescue Committee.

Refugees and Host Communities in Jordan, Lebanon, and Kurdistan, Iraq," Policy Research Working Paper No. 9327, World Bank Group 2020.

Rozo Sandra Rozo and Micaela Sviatschi. 2021. Is a refugee crisis a housing crisis? Only if housing supply is unresponsive. *Journal of Development Economics*, Volume 148 (2021), Article 102563.

UNHCR 2023. TCHAD : Afflux de réfugiés soudanais Enregistrement individuel des réfugiés provinces Ennedi Est, Wadi Fira, Ouaddai et Sila au 09 Décembre 2023. <https://data.unhcr.org/en/documents/details/105318>.

Verme, Paolo and Kirsten Schuettler, 2021. The impact of forced displacement on host communities: A review of the empirical literature in economics. *Journal of Development Economics*, May 2021, 150, 102606.

World Bank 2009. Reshaping Economic Geography. World Development Report 2009. World Bank. Washington DC.

World Bank 2019. Living Conditions and Asset Ownership for the Host and Rohingya Populations in Cox's Bazar," Brief, World Bank, Washington, DC November 2019. Accepted: 2021-06-21T15:02:00Z.

The World Bank 2021. Nguyen, Nga Thi Viet, Abouduhyme Savadogo, and Tomomi Tanaka. 2021. *Refugees in Chad: The Road Forward*. Washington, DC: World Bank.

Rao, J. N., & Molina, I. (2015). Small area estimation. John Wiley & Sons.

DiNardo, J., Fortin, N. M., & Lemieux, T. (1996). Labor Market Institutions and the Distribution of Wages, 1973-1992: A Semiparametric Approach. *Econometrica*, 64(5), 1001–1044.
<https://doi.org/10.2307/2171954>