

## HIGHLIGHT

*Lottery — a simple random draw — has been used in selecting beneficiaries of public work programs in context as diverse as Argentina and the Central African Republic. However, despite a burgeoning literature on targeting, this approach has hardly been studied. This policy note discusses how lotteries compare against other targeting methods in terms of efficiency, legitimacy, and readiness; and if lotteries could be expanded beyond their traditional use for public works to cash transfers. While more research is needed, there is no immediate reason why lotteries should not be used for targeting social safety net interventions, especially when responding to emergencies in ultra-poor and fragile settings.*

# Can the luck of the draw help social safety nets?<sup>1</sup>

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With an increase in the frequency and severity of shocks, from the COVID-19 pandemic to climate change and violent conflicts, the quest to end poverty has suffered its worst setback in decades (WB 2020). This situation drives calls to rethink the welfare state<sup>2</sup> and supports an unprecedented expansion of social safety nets (Gentilini et al. 2020). In most countries though, financial resources are not yet available for an adequate coverage of the population (Beegle et al. 2018 and WB 2018). This mismatch between resources and needs is deepening policy debates about targeting of social assistance

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2 For more information see <https://www.economist.com/leaders/2021/03/06/how-to-make-a-social-safety-net-for-the-post-covid-world>

recipients. As social protection turns to adaptive to reduce vulnerability to shocks (Bowen et al, 2020), the question of the efficiency of targeting (i.e. are we selecting the intended population?), is increasingly coupled with trade-offs around readiness. Is the proposed targeting method also a practical one given the operational constraints? Legitimacy of targeting also becomes important as social safety nets are deployed more and more in areas where social cohesion is at stake. Is a targeting method acceptable to the public or does it generate extra tensions or conflict? Considering all these three dimensions — efficiency, readiness and legitimacy — is especially important when vetting targeting for crisis response in ultra-poor and fragile settings.

There is an abundant literature on targeting and the performance of a range of methods: categorical, community-based, proxy-means testing, etc. (Devereux et al. 2017). However, in these discussions and reviews, an approach is barely mentioned and seldom compared with others: lotteries. Authoritative global reviews of targeting methods do not even mention it as an option (Coady, Grosh, & Hoddinott 2004, Slater et. al 2009, Devereux et al. 2017). However, lottery is a frequent tool. It is used in public works programs in context as diverse as Argentina, the Central African Republic, Egypt, and Laos. While less common, other social assistance programs have relied on lotteries too. And beyond social assistance, governments have also favored lotteries for public policies, from school admissions to military service drafts, visa allocation and vaccine distributions<sup>3</sup>. So, is there a possible disconnect between research and practice?

What are the pros and cons of lotteries for targeting in terms of efficiency, legitimacy, and readiness? Should we extend their use beyond public works to other social safety nets?

## A primer on lottery in public works programs

There are many variants of lotteries to select beneficiaries of public works programs. Here is a standard case. Assume your budget allows to recruit 250 workers in a village. You open registration for the program without any condition, i.e., all adult villagers are eligible. Say 1,000 people enroll to participate. On the lottery day, 1,000 numbered coupons are placed in a ballot box. Each of the 1,000 participating villagers pick a coupon by hand. Those who get a coupon with a number between #1 and #250 become program beneficiaries. The individual with coupon #251 is the first on the waiting list and so on.

It is a simple random draw: chance is the only factor at play here! So, how can a lottery make for a targeting mechanism? Let's look at efficiency first. The requirement of having to work to access the program's benefit — "cash-for-work" in other words — generates self-selection among eligible people. The standard model goes that the poorer the people are, the lower the opportunity cost of participating in the program is (Besley & Coate 1992). In the jargon of contract theory, it is a signaling game: the agents (the targeted group) credibly convey (by accepting the requirement) some information about themselves (their poverty status) to the principal (the program agency). In short, only the poor accept to participate in public work programs. Poverty profiles of participants in public works as in Cote d'Ivoire and India have shown that, indeed, self-selection can work (Alik-Lagrange & Ravallion 2018; Bertrand et al. 2016).

But is it fair? When budgets are not enough to cover all the poor, a lottery can give equally-deserving people an equal chance to receive the benefit (Stone 2007). The lottery system is also transparent for it is easy to explain to all. People understand the concept of chance (or "luck") very well across cultures and continents. Also, lotteries are held in the open and the process is participatory — agency matters, with people actively (and playfully) engaging

<sup>3</sup> For examples see: <https://dcps.dc.gov/page/my-school-dc-lottery-how-apply>; <https://www.sss.gov/about/return-to-draft/lottery/>; <https://www.dvlottery.com/>.

## An Example: Public Works Lotteries in the Democratic Republic of Congo

The Social Fund of the Democratic Republic of Congo has been implementing a public works program for the last 10 years, using lotteries as a targeting mechanism. 26,643 persons registered to participate in its most recent operation in Kananga, the capital of the Kasai Central province.

27 lotteries — one per neighborhood — were organized in public spaces to recruit 6,750 workers in November 2020. The costs of organizing the lotteries was minimal with no additional staffing required and less than US\$1000 in equipment (plastic boxes, tarpaulins, etc.). It is a good example of readiness with a large scale and fast selection process.

Despite being a fragile region, no major security incident or allegations of fraud have been reported by the authorities, the media, the peacekeeping mission, and the public (through community surveys and project's hotline). The legitimacy of the process is confirmed by the broad acceptance of the lotteries as a fair, transparent, and participatory system.

A post-lottery survey shows that the beneficiaries, slightly more than 50 percent women, are poor and very vulnerable to shocks. 72 percent are unemployed; among those employed, all work in the informal sector and their self-reported monthly average income is about US\$20. 94 percent have not saved anything in the last six months. 88 percent live on a meal per day and 64 percent have skipped a meal in the last 30 days. 66 percent believe it is unlikely they could find US\$25 to respond to an emergency. 26 percent come from displaced households, 3 percent include demobilized combatants, and 6 percent care disabled family members. While most children of beneficiaries go to school, 36 percent of them rely on traditional medicine when sick and 76 percent do not have direct access to drinking water. 24 percent do not feel safe where they live. These data show that self-selection worked and that lotteries have been not been detrimental to the efficiency of the targeting process.

All data are available from the authors.



Free and voluntary  
registration



Transparent and  
participatory process



Draw in public with  
full access to observers



Immediate enrollment  
and benefits

Photos courtesy of Fonds Social de la RDC

during the drafting. These considerations are especially important in fragile and violent settings where communities may distrust officials and external actors. In such contexts, the do-no-harm principle invites us to let legitimacy prevail over efficiency when assessing targeting methods.

Last — and this is often overlooked in the targeting debate — operational readiness is essential for crisis response and humanitarian programs. In that respect, lotteries are remarkable: they are fast and inexpensive; they require no technology or administrative capacities; and they are replicable in any environment, both rural and urban. Londo, a government-led public work program has been able to carry out lotteries without incident in all the 71 districts of the war-torn Central African Republic<sup>4</sup>. In a nutshell, lotteries are ideal for these emergency operations in low capacity, fragile contexts.

## When is “luck” enough of a targeting mechanism for public works?

It does not mean that lottery is the silver bullet of targeting for social assistance though. When is luck enough of a targeting mechanism in public works programs? Assuming a budget constraint, lotteries may be the best strategy when:

- i. There is asymmetric information. In plain English, there is a lack of accurate data about the targeted population, i.e., no social registry, fiscal records, or ways to get an accurate picture of the people in need.
- ii. Fixing that data gap — what others targeting methods do — would be prohibitively costly or lengthy (think of timely shock response), or it would increase the risk of violence, which is often the case in contexts of low social cohesion and distrust of outsiders.
- iii. The targeted population is homogenous enough that the difference between two eligible people does not matter anymore. It would be the case when responding to most covariate shocks in ultra-poor settings.

In a nutshell: There is not enough assistance for all. Nobody knows who is who. Efforts to know are vain. And it does not matter anyway as all need assistance. Unfortunately, these are frequent circumstances in crisis response.

## The new frontier: extending lotteries to cash transfers?

Now, would it make sense to consider lotteries for unconditional cash transfers? These programs are increasingly popular in social and humanitarian assistance (CaLP 2020), their positive impact on beneficiaries is well documented (Bastagli et al, 2019), and one could argue that they are the new gold standard (Ivaschenko et al. 2018). By definition, unconditional cash transfers have no work requirement, so self-selection does not apply, and the conventional wisdom goes that lotteries make no sense anymore. Indeed, no cash transfers programs use lotteries for targeting households.

## Let’s look at this question again, but from a different angle: How would lotteries compare against the most widespread targeting methods?

We are in luck: several studies have assessed and compared the efficiency of actual targeting methods by benchmarking them against a “worse-case” no-targeting scenario defined as a random selection of beneficiaries... in other words, simulating a lottery (see for example Coady, Grosh and Hoddinott 2004). What is the main result of these comparative exercises? In many cases, a lottery would perform as good as community based targeting (Premand and Schnitzer 2020) or survey-based methods (Brown et al. 2018) in ultra-poor settings, i.e., the population is poor on average with low standard deviations. It is especially true for emergency programs responding to food insecurity, or after applying geographical targeting (Schnitzer 2019).

<sup>4</sup> For information on the program see: <https://www.facebook.com/londorca/>

Overall, in ultra-poor settings, the variations between targeting methods in terms of efficiency are arguably small, so that the question of efficiency may not be decisive and therefore relevant in the first place<sup>5</sup>. What about legitimacy and readiness?

Knowledge about the legitimacy of lotteries builds largely on anecdotal evidence. For instance, in Niger, lotteries were introduced to the program to select beneficiary villages in the context of a randomized impact evaluation. Since then, the program kept relying on lotteries. As mentioned in Gertler et al. (2016), “Its value as a transparent, fair, and widely accepted operational tool to allocate benefits among equally deserving populations justified its continued use [after the impact evaluation was over] in the eyes of program implementers and local authorities.” Similarly, in post-conflict northern Liberia a community-driven reconstruction program selected beneficiary villages through public lotteries (Fearon et al. 2008). They report that “we monitored the lottery process for conflict risks. Reports strongly indicated that not only were there no conflicts resulting from the randomization but that communities viewed the process favorably and appreciated the equity of the procedure.”

Based on a compilation of studies with information on targeting legitimacy, Figure 1 shows the share of non-beneficiaries who nonetheless found the selection process fair. The seven programs operate in different contexts and have different objectives, design, benefits, and coverage, so a proper comparative analysis cannot be carried out and conclusions in difference in results cannot be attributed to targeting methods exclusively. Variation in legitimacy is high. In the best performing case — a lottery done in DRC for a cash for work program — 90 percent of non-beneficiary community members felt that the selection process through lotteries was fair. For methods other than lotteries, this number ranges from 38 in Senegal, where a community based approach (Household Economy Analysis<sup>6</sup>) was used to identify potential beneficiaries for seasonal cash

transfer programs aiming to address food insecurity, to 79 percent in Niger where a survey based method was applied to identify food insecure households to benefit from a cash transfer program.

**Figure 1: Share of individuals not selected by a targeting scheme that found the selection process fair**

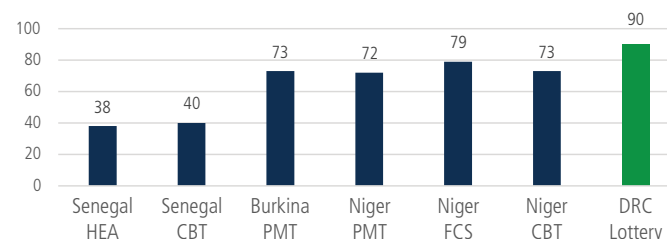


Figure is based on Diagne (2017) for Senegal, and Bank's own calculations for Burkina Faso, DRC, Niger.

While our knowledge on the legitimacy of lotteries is limited, we know much more about the counterfactuals: current targeting methods have been questioned and may have exacerbated tensions in some instances (Pavanello et al. 2016; Kardan et al. 2010; Sumarto 2020). This is especially the case in ultra-poor settings where budgets are largely insufficient to cover needs, and communities feel that everyone is equally poor or deserving. The challenges of categorical targeting are well documented with programs for refugees in poor hosting communities (ODI 2020; Samuels et al. 2020). The complexity of survey-based poverty scoring can create challenges of trust as people do not understand why some are selected while others they believe to be as equally poor are not (Adato et al. 2004). Community-based targeting faces the risk of manipulation by local committees and authorities (Conning & Kevane 2002), and decentralized decision-making has sometimes been refused by communities fearing disputes among them.

On operational readiness, the evidence is again largely anecdotal and there is no proper comparative research. Most would agree that, in general, organizing lotteries is low-cost, takes days, and requires no skills; community-based targeting is affordable and a matter of weeks,

5 [https://quentinstoeffler.weebly.com/uploads/4/0/2/6/40265181/sahel\\_targeting\\_spj\\_bbl\\_11052020.pdf](https://quentinstoeffler.weebly.com/uploads/4/0/2/6/40265181/sahel_targeting_spj_bbl_11052020.pdf)

6 For more information on this method see Schnitzer (2019).

and it works with some basic administration; and surveying household poverty is more expensive, should be planned over months, and needs advanced skills and higher administration. It does not mean that a method is better than another. It is a question of objectives. Households surveys are the right investment for building sustainable social protection systems and there is a strong case for community-based approaches in many contexts. But absent a pre-existing social registry or an efficient local governance, these targeting methods may not compare well with a lottery when you are short of budget, time, and capacities, that is in most crisis situations in developing countries. In addition, lotteries can easily be repeated, so that people excluded once get a chance at the next round. Programs can actually be set up to ensure a regular rotation of beneficiaries, which in return reinforces both effectiveness and legitimacy compared to more static approaches of targeting whose results cannot be updated frequently.

More systematic research is needed to make this case. However, there is no immediate reason, based on efficiency, legitimacy, and readiness, why lotteries should not be used — in combination with geographic targeting — for cash transfers in ultra-poor and fragile settings, especially when responding to emergencies.

### **An invitation for more discussions, research, and experimentation**

Universal social protection remains the goal. However, today, in a context of growing needs and constrained financial spaces, selecting beneficiaries is increasingly difficult. Let's not shy away from lotteries in the targeting debate anymore. Lotteries do not have the elegance and sophistication of others targeting methods, but their simplicity may turn to have value and offer a solid alternative in the most challenging contexts.

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