

**How Effective is Disarmament, Demobilization and Rehabilitation?
Research on the Cases of Burundi and Sierra Leone
By Simone Peloquin**

Introduction

There are many organizations and programs dedicated to restructuring and rehabilitating post-conflict states, yet not much is known about the effectiveness of one relatively new type of program – Disarmament, Demobilization and Rehabilitation (DDR). Through a DDR program, former rebel combatants are reintegrated into civil society. There has been some experimental evidence on the effectiveness of DDR, drawn from programs in Burundi and Sierra Leone. Both of these case studies however, show inconclusive results. Further study into the effectiveness of DDR programs is needed in order to improve the tactics used to rehabilitate societies and further protect the people within them from the economic and psychological damages of civil war.

Evidence of the effectiveness of DDR, before these two case studies, suggested that there was little to no impact on downstream benefits of DDR programs. These case studies though, have provided results that challenge the evidence found previously. Evidence on DDR effectiveness impacts political policy and transitions from war to peace, and the DDR programs have themselves become part of the peace agreements that can end civil wars. The first effort to facilitate a DDR program emerged in 1989 from the United Nations Observer Group in Central America. Since the birth of this program, DDR has appeared in UN operations in El Salvador, Cambodia, Mozambique, Angola, Liberia, Sierra Leone, Guatemala, Tajikistan and Burundi. DDR has gained the confidence of policy makers but despite this, there had been little in the way of evaluation of these DDR programs until the studies that were done in Burundi and Sierra Leone. These two cases have been the only studies to compare the success of reintegration of those countries that have and have not participated in DDR programs. Studies besides the ones done in Burundi and Sierra Leone have neither focused on this macro-level comparison nor have

they focused on identifying why certain individuals are better able to successfully reintegrate over others. Not only has DDR not been sufficiently studied, but also it is very difficult to identify the effects of the programs on peace building because of their isolated nature and other types of interventions conducted in conjunction with DDR such as military, social and economic interventions. In order to better and more fully understand how DDR contributes to peace building, studies with more depth are required. Further study on DDR effectiveness are crucial because of the high amount of money spent on these programs per annum as well as their potential to have a positive impact on the lives of citizens in post-conflict countries.

1. Literature Review

A review of the literature regarding the effectiveness of DDR in Sierra Leone produces many findings. Namely, that past participation in an abusive military faction is the greatest predictor of how difficult it will be to achieve social reintegration of ex-combatants. In the study “*Demobilization and Reintegration*” done by Macartan Humphreys and Jeremy Weinstein, it was found that wealthier and more educated combatants face greater difficulties in reintegrating into civil society. Also, ideologues, men and younger fighters are the most likely to retain strong ties to their factions. Humphreys and Weinstein found that there is little evidence at the micro or individual level that internationally funded programs aid in the process of DDR.

The hypotheses from Humphreys and Weinstein in this study were not supported by the data collected. Humphreys and Weinstein surveyed 1,043 combatants from among the five warring factions that participated in Sierra Leone’s civil war. The primary goal of the study was to “identify the impact of international attempts to facilitate reintegration.”¹ The authors also explored how the ability of ex-combatants to reintegrate is dependent upon personal

¹ Macartan Humphreys and Jeremy Weinstein, “Demobilization and Reintegration,” *The Journal of Conflict Resolution* 51 (2007): 533.

characteristics and conflict experiences. In other words, Humphreys and Weinstein wanted to find the determinant factor of what makes ex-combatants able to reintegrate into society.

The results of the study showed that there is “heterogeneity across outcome measures”² and that broken ties between combatants and the factions they were a part of is not associated with a more successful reintegration into the economy, the community or political life. Humphreys and Weinstein write that different processes underlie the facets of social, economic and political integration. The authors find that higher-ranking combatants are less trusting of democratic policies and conclude that, “our examination of DDR programs produces little evidence in support of claims that these effectively break down factional structures and facilitate reintegration. Combatants not exposed to the DDR program appear to reintegrate just as successfully as those that participated.”³ Humphreys and Weinstein acknowledge however, that since a randomized trial did not take place in their study, there are a number of reasons why they may have failed to identify the determinant effects. Biases they discuss include spillover, sampling and selection biases. Overall, their analysis identifies that the results of the study cannot be “easily attributed to selection or sampling effects.”⁴ There is evidence though, that spillover effects could have contributed to the overall difficulty in the ability of the study to identify DDR program effects on reintegration.

Even with these findings the authors argue that it would be wrong to say that the DDR program had no effect whatsoever. In the future they recommend that policy makers use more robust strategies for demonstrating DDR efficacy. Although the authors cannot identify the impact of DDR programs at an individual or micro level, they argue that, “we must be cautious in interpreting these findings as evidence that the DDR process had no impact. It is possible that

² Macartan Humphreys and Jeremy Weinstein, “Demobilization and Reintegration,” 533.

³ *Ibid.*, 533.

⁴ *Ibid.*, 533.

spillover effects, selection effects and sample biases may undermine our ability to properly identify the causal impact of the program.”⁵ Furthermore, just because there is little evidence that the DDR program in Sierra Leone was effective, it does not mean that DDR programs are never successful. However, the Sierra Leone case is regarded as successful. Different aspects of the program in Sierra Leone are being used in other DDR operations in other countries such as Liberia, Haiti and, as I will discuss later, Burundi. In order for a more successful DDR program and more successful DDR analysis, this case should be considered a “single data point in a larger model that attempts to explain cross-national variation in program effectiveness.”⁶ Humphreys and Weinstein write that studies such as theirs must be complemented by studies that include country-specific factors, which may impact the effectiveness and reach of DDR programs.

Another study, “*Reintegrating rebels into civilian life: Quasi-experimental evidence from Burundi*” done by Michael Gilligan, Eric Mvukiyeye and Cyrus Samii, yielded results similar to that of those in the study done in Sierra Leone. The authors measured the impact of ex-combatant reintegration programs in Burundi after the country’s civil war, which lasted from 1993 until 2004. The authors contend that the results of the study challenge current theories on the impact of short-term economic conditions on one’s disposition towards society and the state. The results also suggest that, “social and political integration of ex-combatants requires more than just individually-targeted economic assistance.”⁷ The study measures the program’s effects on economic well-being and the down-stream effects on attitudinal measures of political integration. The study finds that “programmatically effects included a substantial income boost to

⁵ Macartan Humphreys and Jeremy Weinstein, “Demobilization and Reintegration,” 554.

⁶ *Ibid.*, 564.

⁷ Michael J. Gilligan, Eric Mvukiyeye and Cyrus D. Samii, “Reintegrating Ex-rebels into Civilian Life: Quasi-Experimental Evidence from Burundi,” Available at peacebuildingsurveys.org. www.columbia.edu/~cds81/burundisurvey/. Pp. 1.

those whose earnings would otherwise have been very low but nothing to suggest that these income effects produced downstream effects on political integration.”⁸

Reintegration is defined by the United Nations as the process “which allows ex-combatants and their families to adapt, economically and socially, to productive civilian life.”⁹ The authors conducted their fieldwork in June and July of 2007 and included data from interviews with civilians, ex-rebels and ex-army both demobilized and those integrated into the new survey forces, according to Gilligan et. al. The article, however, only uses data from demobilized ex-rebels. The authors write that the results of this study suggest that the reintegration program in Burundi produced a significant increase in income among ex-combatants who would have otherwise been among the worst off financially. This resulted in a decrease in the incidence of poverty among these ex-combatants. Also, there was a moderate effect from this reintegration program on the improvement of the livelihood prospects for ex-combatants. According to the authors, this effect, however, was “not enough to transform substantially the overall distribution of ex-combatants over livelihood outcomes.”¹⁰ The authors write that they did not find evidence that downstream effects, such as improvement to economic well being, could have a positive impact toward political order and laws and norms of civil society.

However, the authors admit some limitations to their study. Yet they assert that even with these limitations, the study represents an example of significant progress in several ways. Namely, that theirs is the best design for measuring the impact of DDR programs “in their

⁸ Michael J. Gilligan, Eric Mvukiyeye and Cyrus D. Samii, “Reintegrating ex-rebels into civilian life,” 1.

⁹ Ibid., 6. Originally from: United Nations. 2000. *The Role of United Nations Peacekeeping in Disarmament, Demobilization and Reintegration*. Report of the Secretary-General to the Security Council, S/2000/101. New York: United Nations.

¹⁰ Ibid., 39.

totality.”¹¹ In addition, the regional nature of the discontinuity in their study forced them to make assumptions about exchangeability across regions and allowed them to ensure that broader equilibrium effects were incorporated into program effects. Lastly, Gilligan et. al. argue that their adjustment strategy is similar to labor economics research done on the United States National Supported Work Program. This research has shown that “program effect estimates are quite sensitive to the covariate set that one chooses.”¹² Gilligan et. al. assert that this is not a problem in their study as they used a rich and robust data set that accounts for community and individual characteristics. The authors conclude that this is critical because “economic and political reintegration outcomes are most certainly the result of an interaction between these two levels.”¹³

In conclusion, the authors summarize that reintegration programs are nonetheless critical in aiding the transition from war into peace. The purpose of DDR programs is to provide incentives for ex-combatants to turn away from violence and toward a life in civil society, which “meets their material and psychological needs.”¹⁴ However, evidence that DDR programs accomplish this is minute. Gilligan et. al. conclude that the gap that exists between effort, expectations and evidence is “worrying.”¹⁵ The economic outcomes, or programmatic effects of the study yielded that the boost in income to those combatants who would have been the worst off, led to a large decrease in poverty and moderate evidence that livelihood and occupation outcomes were improved. The authors write though, that they did not find enough solid evidence for downstream effects, as mentioned before. There was also moderate evidence for an effect on the attitude of ex-combatants that civilian life was preferred over combatant life. Lastly though, Gilligan et. al. concluded that there was no effect of “either increasing levels of satisfaction with

¹¹ Michael J. Gilligan, Eric Mvukiyehe and Cyrus D. Samii, “Reintegrating ex-rebels into civilian life,” 40.

¹² Ibid., 41.

¹³ Ibid., 41.

¹⁴ Ibid., 41.

¹⁵ Ibid., 41.

the peace accords or increasing levels of support for current governing institutions.”¹⁶ That is to say, boosts in economic well-being alone will probably not be enough to ensure stability and civil society norms, even though it does have a positive impact. The authors assert that more direct interventions are necessary, through media or counseling perhaps. These they write will be able to shift attitudes about the preference of combatant life over civilian life. Future studies according to Gilligan et. al. should be “designed to ensure adequate power, and should attempt to incorporate unobtrusive behavioral measures to improve the tangibility of findings.”¹⁷

2. Data

The war in Sierra Leone was officially declared to be over in 2002. The war that lasted for a decade began when a small group of combatants, the Revolutionary United Front (RUF), entered Sierra Leone from Liberia to fight the Sierra Leone Army. A man named Charles Taylor backed the RUF and over the course of the brutal war, three other factions appeared, these factions were the Civil Defense Forces, the Armed Forces Revolutionary Council and the West Side Boys. During the war, tens of thousands of civilians were killed and hundreds of thousands were displaced from their homes. Power sharing in Sierra Leone was attempted but failed. The war finally came to an end when Taylor was captured. The intervention to capture Taylor was, at the time, the largest United Nations mission in the world.¹⁸ This along with military action from Guinea and the United Kingdom, brought the brutal war to a close. The DDR program in Sierra Leone was unexpected for a country that had experienced such a violent decade of war. The international community, according to Humphreys and Weinstein, still lauded the program. The DDR program effort in 2002 was not the first attempt at DDR in Sierra Leone. Calls for DDR in

¹⁶ Michael J. Gilligan, Eric Mvukiyehe and Cyrus D. Samii, “Reintegrating ex-rebels into civilian life,” 42.

¹⁷ Ibid., 43.

¹⁸ Macartan Humphreys and Jeremy Weinstein, “Demobilization and Reintegration,” 539.

Sierra Leone took place as early as 1995 and the implementation of DDR programs was written into the terms of the 1996 peace agreement, write Humphreys and Weinstein. The first sustained efforts to demobilize fighters began in 1998. This process did not see success however. Only 3,000 ex-combatants registered for disarmament and demobilization.¹⁹ Humphreys and Weinstein contend that the program was not a complete failure. The authors write that it was successful in other ways. For example, rates of participation were nearly equal across the major factions, there was little evidence that individual political affiliation correlated with ultimate program satisfaction and the main program complaints were in regard to administrative efficiency and bureaucratic design. These problems are common with UN-sponsored programs argue Humphreys and Weinstein. There is no evidence, however, that the process was manipulated to favor or exclude any one particular group.²⁰

Humphreys and Weinstein conducted their survey of ex-combatants in June and August of 2003, a little more than one year after the war ended in Sierra Leone. The authors administered a closed-ended questionnaire in the local language of the respondents and conducted interviews at program sites and community centers around Sierra Leone. The survey also used randomization so as to ensure the most unbiased sample as possible. The authors assert that:

Individuals that mistrust the intentions of other fighters should be less likely to leave the security of their units and reintegrate into civilian life. Consistent with the logic of the role of spoilers in undermining the peace processes, individuals that are dissatisfied with the terms of the peace have a greater incentive to hold out and disrupt a peace process rather than returning quietly to civilian life.²¹

¹⁹ Macartan Humphreys and Jeremy Weinstein, "Demobilization and Reintegration," 539. Originally from: Molloy, Desmond, 2004. "The DDR Process in Sierra Leone: An Overview and Lessons Learned." Freetown, Sierra Leone: United Nations Mission in Sierra Leone.

²⁰ Ibid., 540.

²¹ Ibid., 543-544.

Humphreys and Weinstein therefore measured distrust and dissatisfaction and found that distrust is a “significant predictor of reintegration success.”²² They write that individuals who distrust the intentions of the other side are significantly less likely to place their trust in the democratic process to resolve their problems or handle their concerns. Individuals with low levels of trust are also less likely to leave their factions and there is a negative relationship between distrust and measures of employment and acceptance.

These findings are statistically weak but still relevant. In terms of dissatisfaction, individuals that believed their group did poorly in the political allocation of resources, also fared badly in the economic environment after the conflict. Humphreys and Weinstein find that older ex-combatants are more likely to have broken ties with their factions and that younger combatants are no less likely to be accepted by their communities, to have faith in their democratic processes or to have found stable employment. They also find the only difference between male and female fighters is that female ex-combatants are more likely to have broken faction ties. Evidence from their study shows that gender otherwise has no impact on most outcomes from DDR except that men appear less willing to cut faction ties. In addition, there is no relationship between individual socio-economic status and cutting ties with factions. Humphreys and Weinstein contend that overall, the success of post-conflict reintegration does not appear to be strongly structured along ethnic lines and that there is a negative relationship between abduction and the acceptance process. Also, Humphreys and Weinstein discover that higher-ranking officers in factions have more severe problems with reintegration and a strong rejection of democratic processes. In a group characteristic specific to Sierra Leone, Humphreys and Weinstein find that:

²² Macartan Humphreys and Jeremy Weinstein, “Demobilization and Reintegration,” 544.

The extent to which a unit was highly abusive toward civilian populations. To the extent that individuals committed heinous crimes against noncombatants, one might expect that they would face a more difficult process of gaining acceptance by community members and resettling into a military way of life.²³

This characteristic, Humphreys and Weinstein assert, is likely to affect an individual's prospects in the post-war period. Individuals from non-abusive units demonstrate higher acceptance levels than those from units that were highly abusive. These findings are not statistically significant but they find that individuals from abusive units have a more difficult time finding employment and are less likely to put faith in democratic processes. In the effectiveness of DDR programs on reintegration, the authors used two treatment measures: participation in the program and whether an individual completed DDR. The results from the study yielded a lack of evidence that international programs are

Returning the benefits attributed to them, as observed at the individual level. Evidence from Sierra Leone does not support the hypothesis that participation in a DDR program increases the degree to which combatants are accepted by their families and communities. Nor is there a relationship between participation in these programs and democratic attitudes, the likelihood that an individual breaks ties with his or her faction, or the likelihood that he or she returns home.²⁴

The only significant results from the study, Humphreys and Weinstein state, are that individuals who have entered the DDR programs are less likely to put faith into their governmental structures and those leaving DDR programs are less likely to be employed. The authors find no effect of the exposure to DDR programming on the employment prospects of ex-combatants.²⁵ The authors suggest that in particular, the program may be especially effective for certain types of ex-combatants. Specifically, their hypothesis followed that the program would,

²³ Macartan Humphreys and Jeremy Weinstein, "Demobilization and Reintegration," 547.

²⁴ *Ibid.*, 549.

²⁵ *Ibid.*, 549. (This is other than the short-term occupation provided during training.)

“be especially beneficial for individuals that distrust the motivations of other groups.”²⁶ Also, when material benefits were provided to the ex-combatants, the authors argue that the program would most likely have a greater impact on those ex-combatants who felt their group was ‘getting a bad deal’ as a result of the political process.

The authors find that this is not the case. Humphreys and Weinstein find no effect from the DDR program in general. In addition, they find no effect for the populations that should, in theory, feel the strongest effects of the program. In short, “there is little evidence of a relationship between participation in the DDR program and the degree to which ex-combatants have reintegrated in Sierra Leone.”²⁷ While Humphreys and Weinstein acknowledged that peacekeeping programs might have had an impact at the macro level, they can find no effect of DDR at the micro, or individual level. They are reluctant to admit however, that these findings mean the DDR program had no impact in Sierra Leone. They write that, in fact, several effects such as spillover, selection and sample bias effects may have undermined their ability to properly determine the impact of the DDR program without any type of bias.

In terms of spillover effects, the authors find that there is no evidence that the likelihood of reintegration is increased through DDR. There is however, some evidence that DDR participation (joining a DDR program) has an impact on acceptance. Additionally, there is no cause for selection effects because it is those cases, which one would assume would be afraid of being identified, that joined the DDR program. If a selection effect were present in this study and even if it had no impact, participants would fare better than non-participants. The open-ended responses to the questions relating to selection effects reveal that there is, in fact, no clear evidence that selection effects hide or magnify the DDR program effect or that participation in

²⁶ Macartan Humphreys and Jeremy Weinstein, “Demobilization and Reintegration,” 554.

²⁷ *Ibid.*, 554.

DDR has an impact on reintegration success. In terms of sampling bias, the effects could go in either direction. Humphreys and Weinstein find that if a sampling bias exists, it could cause the adverse effects of the study to be underestimated and the positive effects of the program to be overestimated.

In order to improve the effectiveness of DDR programming not only in Sierra Leone, but in other countries as well, Humphreys and Weinstein assert that even though the causal effects of the DDR program in Sierra Leone cannot be explicitly identified, DDR programming is not a lost cause. They argue that even though this is the case, it is not appropriate to conclude that the program in Sierra Leone had no positive effects whatsoever. They suggest a newer and better-suited method for identifying the causal effects of DDR programs. They write that the “best approach involves the development of monitoring and evaluation systems that employ some form of randomized intervention.”²⁸ These DDR programs must be designed so that “reintegration trajectories” of participants can be used in comparison with nonparticipants so that both groups are identical except for the type of treatment.²⁹

Thus, Humphreys and Weinstein advocate an approach based on the randomization of timing of participation in DDR programs. By this approach, the ex-combatants will all participate in the program eventually; however, the timing of program entry will be determined by a lottery. They write that the feasibility of this type of program is promising as the United Nations and its partners have been modeling training to include more forms of DDR programs that are community focused. With enough communities participating in this type of program, Humphreys and Weinstein argue that identifying program effects by this comparison is possible. In addition, the randomized control can mitigate problems from spillover effects and sampling

²⁸ Macartan Humphreys and Jeremy Weinstein, “Demobilization and Reintegration,” 560.

²⁹ *Ibid.*, 561.

biases. Essentially, a randomized trial can be useful in assessing the overall impact of DDR and for program design according to Humphreys and Weinstein.

In comparison, the Gilligan et. al. study showcases many of the same results and conclusions. Essentially, the Gilligan et. al. study continues where the Humphreys and Weinstein study left off. The authors of this study hypothesize that: reintegration programs substantially improve the economic welfare of ex-combatants as they are programmatically designed to do, and that by improving economic welfare, reintegration programs substantially increase ex-combatants' willingness to respect the rule of law and adopt an orientation that favors societal stability. This study, using Burundi as a case study, is able to examine the extent to which the DDR program in Burundi achieved the improved income and livelihood of ex-combatants. The war in Burundi caused approximately 300,000 deaths out of a total population of 6 to 8 million people.³⁰ In the reintegration program, ex-combatants had access to different forms of counseling and opportunities for schooling and different types of job training.

The Gilligan et. al. paper uses ex-combatant data from the *Wartime and Post-Conflict Experiences in Burundi* survey.³¹ This survey contains data from civilian, ex-army and ex-rebel interviews. However, the Gilligan et. al. paper works only with the data from ex-rebels. The study predicted that younger ex-combatants may experience less economic reintegration than older combatants, Tutsi ex-rebels will fair worse economically than Hutus, coming from a non-farming household is likely to have an effect on the ability of an ex-combatant to find employment not related to farming, outgoing rank of officers is likely to indicate individual ability, and that ex-combatants who experienced the most violent combat would be more traumatized psychologically and have a more difficult time returning to normal economic

³⁰ Michael J. Gilligan, Eric Mvukiyehe and Cyrus D. Samii, "Reintegrating Ex-rebels into Civilian Life," 10.

³¹ *Ibid.*, 20.

activities. Also, the study hypothesized that the ex-combatants who were in combat longer would have more difficulty reintegrating into society, ex-combatants who had a large percentage of family members killed would have fewer employment contacts, ex-combatants who demobilized later would have less success in reintegrating economically, communities that were exposed to a higher level of violence may experience lower levels of economic opportunities due to capital destruction, more densely populated communities will have larger product and labor markets, provinces with governors linked to the ruling party will have more success in attracting government funds for reconstruction (therefore an economic stimulant), and lastly, that the capital city of Bujumbura due to its size and density will have different potential economic outcomes than the rest of Burundi. The authors also developed a power household wealth index based on a scale determined by survey responses and a faction control to address the findings of Humphreys and Weinstein that more abusive factions have more problems with social acceptance than less abusive or non-abusive factions.³²

Gilligan et. al. used two measures of economic reintegration, one being monthly income and poverty incidence, and the other being livelihood (the nature of the occupation procured by the respondent).³³ Using these measures, the authors found evidence that was very weak in relation to the idea that reintegration programming boosts incomes on average over the short term. In addition, on a log-scale, the income effect is in decline in terms of potential income. These two findings are indistinguishable according to the authors. They assert that a combination of the two findings may be taking place. Further analysis reveals that the reintegration program:

Substantially boosted the income of ex-combatants whose earnings would otherwise have been low. Effects on those with higher potential income were not

³² Michael J. Gilligan, Eric Mvukiyehe and Cyrus D. Samii, "Reintegrating Ex-rebels into Civilian Life," 26.

³³ Ibid., 30.

statistically significant by any discriminating standard. Nonetheless, the conditional income effects resulted in poverty.³⁴

Results showed that the effect of programming in Burundi was more likely to make ex-combatants express impatience with their government and that over the short-term, the reintegration program produced a significant boost to income among ex-combatants who would have otherwise been among the worst off economically. This, in turn, substantially lowered the incidence of poverty. In addition, there was a moderate effect stemming from the DDR program that improved the prospects for livelihood of the ex-combatants. There is no sufficient evidence to suggest however, that improvement to economic well being would make ex-combatants more receptive to laws and norms of civil society.

Even with these findings, the authors acknowledge there are several limitations to this empirical analysis of the DDR program in Sierra Leone. For example, the program effects are being evaluated in a very short timeframe. Next, the sample size is very small. Thirdly, the analysis is confined to those citizens registered to receive benefits outside of the capital city of Burundi. Lastly, according to Gilligan et. al., the discontinuity in the study was regional in nature and this forced the authors to assume that there was an achievement of exchangeability on the micro or individual level. However, the authors could not test this assumption.³⁵

Even with the aforementioned limitations, the authors assert that the study represents progress in several ways. Namely, that “the type of discontinuity we exploit offers the best feasible design for measuring the impact of reintegration programs in their totality.”³⁶ Next, while the regional nature of the study forced the authors to make assumptions about exchangeability as mentioned previously, it also allowed them to “ensure broader equilibrium

³⁴ Michael J. Gilligan, Eric Mvukiyehe and Cyrus D. Samii, “Reintegrating Ex-rebels into Civilian Life,” 36.

³⁵ Ibid., 40.

³⁶ Ibid., 40.

effects were incorporated into our estimates of program effects.”³⁷ Lastly, the adjustment strategy of the authors resembles a line of labor economics research on the United Nations Supported Work Program in that the program effect estimates are sensitive to the chosen covariate set write Gilligan et. al.³⁸

Even with all of the evidence from Burundi, the total amount of evidence on the impact of DDR programs is lacking. The authors of the Burundi study conclude that there is most definitely a gap between “effort, expectations and evidence.”³⁹ They cite a bureaucratic failure as the source of variation in the effort to measure the impact of the DDR program in Burundi. Even though the program did not have an effect on the distribution of combatants over occupations, the authors write that it did indeed have an improved impact on livelihood and occupations. In addition, there was evidence that ex-combatants found civilian life to be preferable above combatant life, although only moderately. There was however, no evidence that satisfaction levels for the peace accords or for current governing institutions were increasing.

The authors suggest that more direct interventions through media or counseling are needed in order to further improve attitudes toward democratic norms and that further study in this area should “attempt to incorporate unobtrusive behavioral measures to improve the tangibility of findings.”⁴⁰

³⁷ Michael J. Gilligan, Eric Mvukiyeye and Cyrus D. Samii, “Reintegrating ex-rebels into civilian life,” 41.

³⁸ Ibid., 41. Originally from: Dehejia, Rajeev H, and Sadek Wahba. 1999. “Causal Effects in Nonexperimental Studies: Reevaluating the Evaluation of Training Programs.” *Journal of the American Statistical Association*. 94, no. 448: 1053; Smith, Jeffrey, and Petra Todd. “Does Matching Overcome LaLonde's Critique of Nonexperimental Estimators?” *Journal of Econometrics* 125 (2005): 305-53.

³⁹ Ibid., 41.

⁴⁰ Ibid., 42-43.

Conclusion

It is evident that further study is needed on the effectiveness of DDR programs. The studies discussed above have made considerable headway in this area however; the studies are only good examples of specific area effects. Most likely, findings will be different across the world in different geographic areas. The studies are helpful, though, in that they provide a useful starting point for how to go about such an examination of effectiveness. Although DDR is a relatively new strategy, it is never too soon to try to determine whether it is working. Evaluations of DDR programs are necessary in order that the rehabilitation of post-conflict states can continue in a timely, proactive and effective manner. Without these evaluations, there is no way of knowing if the money spent on DDR is being spent wisely, and more importantly, there is no way of knowing if the citizens of post-conflict states are being aided in recovery from their traumatic and violent experiences. In order that these states see physical, emotional and economic recovery, DDR must be examined and improved. The studies in Sierra Leone and Burundi are excellent beginning points for further program design, as well as for further program improvement. In the future, studies using the improvements set forth and previously discussed in this paper from the works by Humphreys and Weinstein and Gilligan et. al. should be implemented for the benefit of post-conflict states and for the benefit of those aiding them.

Bibliography

- Dehejia, Rajeev H, and Sadek Wahba. "Causal Effects in Nonexperimental Studies: Reevaluating the Evaluation of Training Programs." In *Journal of the American Statistical Association* 94 (1999): 1053.
- Gilligan, Michael J., Eric Mvukiyehe and Cyrus D. Samii. "Reintegrating Ex-rebels into Civilian Life: Quasi-Experimental Evidence from Burundi." Available at peacebuildingsurveys.org. www.columbia.edu/~cgs81/burundisurvey/
- Humphreys, Macartan, and Jeremy Weinstein. "Demobilization and Reintegration." In *The Journal of Conflict Resolution* 51 (2007): 531-67.
- Molloy, Desmond. "The DDR Process in Sierra Leone: An Overview and Lessons Learned." *Freetown, Sierra Leone: United Nations Mission in Sierra Leone*, 2004.
- Mvukiyehe, Eric, Cyrus Samii, and Gwendolyn Taylor. *Wartime and Post-Conflict Experiences in Burundi: An Individual Level Survey*. New York: Columbia University and New York University. www.columbia.edu/~cgs81/burundisurvey/
- Smith, Jeffrey, and Petra Todd. "Does Matching Overcome LaLonde's Critique of Nonexperimental Estimators?" In *Journal of Econometrics* 125 (2005): 305-53.
- United Nations. 2000. "The Role of United Nations Peacekeeping in Disarmament, Demobilization and Reintegration." In Report of the Secretary-General to the Security Council, S/2000/101. New York: United Nations.