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# **IMPACT OF LABOR INTENSIVE PUBLIC WORKS IN LIBERIA: RESULTS FROM A LIGHT EVALUATION SURVEY<sup>1</sup>**

Prosper Backiny-Yetna, Quentin Wodon, and Giuseppe Zampaglione

*The President and the Government of Liberia have placed strategic priority on youth employment and have asked development partners for support in these areas. The Office of the President, the government, and development partners have undertaken over the last two years several steps to generate immediate employment. These include the Cash for Work Temporary Employment Project (CfWTEP) financed by the World Bank Food Price Crisis Response initiative. This chapter provides an assessment of the experience to-date with CfWTEP, as well as a discussion of options for the expansion and continuation of the program. Over 2009-2010, CfWTEP has provided jobs to 17000 people in the country. In order to assess the program and suggest options for its continuation, a light evaluation survey was implemented in the country in November-December 2009 with four objectives: (i) Assessing the targeting performances of the program; (ii) Measuring the wage substitution effects among the participant; (iii) Analyzing the patterns of use of the wages received by households; and (iv) Documenting other aspects of the program. The results suggest that the performance of the program in all four areas of the evaluation was relatively good, but targeting to the poor could be improved in the future.*

## **1. Introduction**

Liberia is at an inflection point, moving from transitional post-conflict recovery to laying the foundations for long-term development. The Liberian economy, institutions, and human capacity suffered the gradual and deep destruction of a protracted civil war, the origins of which correlate with a spiraling pattern of bad governance, reckless political and economic interest, regional instability, and the marginalization of huge sectors of society (on conflict and social cohesion in Liberia, see for example Richards et al., 2005). Young Liberians and the rural populace were hit especially hard hit. However, remarkable progress in the post-conflict economy and political process has moved the country to a turning point. The elections of 2006 ushered in a democratic government intent on redirecting the economy by creating broad ownership of the political structure. Since its election, the government has set in motion a challenging reform agenda centered on its Poverty Reduction Strategy as complemented by reforms to improve economic governance, overall transparency, economic growth, and social development. In the space of three years, from 2005 to 2008, Liberia's economy has witnessed a steady uptrend with an average growth rate of 7.4 percent. Furthermore, foreign direct investment has increased, particularly among the mining, rubber, and – more recently – forestry sectors.

Despite this progress, the situation in Liberia remains fragile and exposed to the global crisis. Current per capita GDP is estimated at US\$249, and an estimated 63.8 percent of Liberia 3.5 million people live below the poverty line, with 47.9 percent living in extreme poverty (Republic of Liberia, 2008; Backiny-Yetna et al., 2011). In addition, recent growth has been adversely affected by the global crisis, with GDP growth slowing to 4.9 percent in 2009. The increase in rice prices is likely to have had a large negative effect (Tsimpo and Wodon, 2011a), and some of the measures taken by the government to help the population cope with the crisis

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may not have reached the poor very well (Tsimpo and Wodon, 2011a, 2011b; for an overview of the policies implemented in Africa to deal with the crisis, see Wodon and Zaman, 2010). With 75 percent of the population under 35 years, a large segment of the society came of age in the midst of a disrupted, if not destroyed, education system; lack of education and skills likely will relegate them to low-productivity, low-wage jobs. The governance gains, economic growth, and overall peace dividends achieved by the people of Liberia and its government are too great to risk dislocating the vitality of a productive citizenry. Cohesion, peace, and economic prosperity need not succumb to social strife for lack of meaningful income opportunities, crime and violence due to prolonged unemployment, and cronyism and corruption resulting from opaque practices.

Poverty reduction and peace stabilization require new employment opportunities, and necessitate accelerated structural changes in the economy. Estimates on the rate of unemployment, underemployment, and unpaid work vary between 20 and 30 percent of the working-age population (World Bank, 2009). The vast majority of the employed are engaged in very low paying jobs thereby underpinning the cycles of poverty or extreme poverty. The current economic structure limits the creation of new, more productive jobs, given the prevalence of low-yield agriculture and the limited size of the formal sector. In addition, this sector has been hit by the global financial crisis, in particular by the fall in international demand for commodities and the slowdown in foreign direct investment. The creation of temporary employment opportunities, for the youth in particular, is required to support the emergency response to the repercussions of the financial crisis on the economic and social texture of the country. In this context, communities have an important role to play, given that they have been integral to the peace process and post-war rehabilitation, and key to solving the youth crisis. Despite the nascent (and limited) state capacity, a fragile business environment, and widespread poverty, Liberian communities have provided leadership to youth, identified local development priorities, ensured transparency, mobilized resources, and supported the vulnerable, the poor, and the young. Liberian communities are fundamental to economic and social development, and to new and better jobs targeted to its young citizens.

The President and the Government of Liberia have placed strategic priority on youth employment and have asked development partners for support in these areas. The Office of the President, the government, and development partners have undertaken over the last two years several steps to generate immediate employment and develop skills for youth. These include preparation of the National Employment Policy and a number of emergency employment programs including the Cash for Work Temporary Employment Project (CfWTEP) financed by the World Bank Food Price Crisis Response initiative, as well as the recent Liberia Jobs and Opportunities Initiative. Yet although promising, these activities have remained limited in scope and in their impact on institutional capacity, as well as fragmented in targeting. The government has requested a more coordinated and cohesive approach to donor partners and Liberian agencies.

This chapter provides an assessment of the experience to-date with CfWTEP, as well as a discussion of options for the expansion and continuation of the program (for details, see World Bank, 2010). Over 2009-2010, CfWTEP has provided jobs to 17000 people in the country. In order to assess the program and suggest options for its continuation, a light evaluation survey was implemented in the country in November-December 2009 with four objectives: (i) Assessing the targeting performances of the program; (ii) Measuring the wage substitution effects among the participant; (iii) Analyzing the patterns of use of the wages received by households; and (iv) Documenting other aspects of the program. The survey implementation was managed by the Liberia Agency for Community Empowerment (LACE) and the Liberia Institute of Statistics and Geo- Information Systems. Apart from this quantitative evaluation, a separate qualitative evaluation of the program was implemented, and an overview of both the quantitative and qualitative components of the evaluation was prepared by Andrews et al. (2011); both chapters are available in this collection.

The rest of the chapter is structured as follows. Section 2 presents the results of our evaluation of CfWTEP. A conclusion discusses some of the lessons learned, and the ways in which they are informing the next generation program.

## **2. Evaluation of the Cash for Work Program**

### **2.1 Key evaluation results**

The evaluation of CfWTEP presented in this section is based on a light evaluation survey questionnaire fielded in Liberia in November-December 2009. A random sample of beneficiaries from CfWTEP was drawn from most of the regions in which the program is implemented (at the time the survey was fielded, not all regions had completed their implementation of the program, which explains why the sample is not fully nationally representative). Approximately 1,000 participants were interviewed. It consists of a series of modules along the following structure: Section A: Identification of the individual; Section B: Information on data collection and processing; Section C: Characteristics of the head of the household; Section D: Characteristics of the individual; Section E: Employment history before the CfWTEP Program; Section F: Participation in other projects; Section G: Program assessment; Section H: Project impact; and finally Section I: Household assets.

The basic principle for the evaluation consisted on assessing the welfare status of participants through a matching procedure whereby the survey data set was appended with the nationally representative 2007 CWIQ survey. Because the questionnaire of the CfWTEP survey was designed in such a way as to be comparable to that of the CWIQ survey, a large number of variables could be used for the matching procedure, including household characteristics, characteristics of the household head, assets and housing characteristics, and the like. Since we are trying to estimate the level of consumption per capita of the household to which program participants belong, the matching is implemented at the household level (this is why the survey questionnaire administered to participants includes a module on the characteristics of the household head). Various matching techniques were used to obtain the key results, and the results suggest that program participants tend to be poor. This can be seen by looking at asset ownership in the 2007 CWIQ survey and among participants in table 1. In most cases, the level of ownership of participants is smaller than in the national survey. The same type of findings is obtained when looking at the characteristics of the dwelling and other wealth variables.

**Table 9. 1: Percentage of households owning various assets, CfwTEP and national survey**

	National 2007						CfwTEP
	Q1	Q2	Q3	Q4	Q5	All	All
Electric iron	0.1	0.3	0.3	1.0	2.3	0.9	1.0
Charcoal iron	15.3	20.0	25.0	32.7	40.3	27.7	18.1
Refrigerator	0.2	0.5	0.9	0.6	3.3	1.2	0.1
Television	1.1	1.3	3.0	7.3	15.0	6.2	0.2
VCR	0.5	0.8	1.9	6.2	14.1	5.3	0.3
Radio	32.0	42.7	46.2	57.9	62.8	49.5	39.5
Cell phone	12.7	15.0	22.7	34.6	47.7	28.0	13.6
Computer	0.1	0.1	0.2	0.4	1.7	0.6	0.3
Generator	0.8	2.3	3.0	6.2	14.6	6.0	0.4
Fan	0.3	0.7	0.6	2.7	9.6	3.2	0.9
Bed	52.7	58.8	69.1	71.9	76.7	66.7	55.5
Watch	17.5	27.4	36.0	39.4	48.6	34.9	9.0
Sewing machine	0.4	0.2	1.0	2.6	2.5	1.4	0.6
Stove	0.1	0.0	0.0	0.3	1.3	0.4	0.0
Boat	0.6	0.7	1.3	0.2	0.6	0.7	0.1
Bicycle	0.8	1.4	2.3	3.7	4.2	2.6	0.9
Motorcycle	0.4	0.1	0.8	2.0	2.6	1.3	0.3
Car	0.1	0.1	0.1	1.1	3.9	1.2	0.1

Source: Authors' estimation.

Both traditional propensity score matching and a combination of coarse exact matching (Iacus et al., 2009; King and Stuart, 2007) and propensity score matching were used for the estimations of the level of consumption per capita of the households to which program participants belong. The technical details of the matching procedure are available in Backiny-Yetna and Wodon (2011), but the key results are provided in table 2, which is based on implementing coarse exact matching on a few key variables as a first step in order to ensure comparability of the samples, and propensity score matching as a second step on the subsample generated by coarse exact matching. In terms of matching options, k-nearest neighbor, one-on-one matching, and kernel matching procedures were used. The preferred estimates are those obtained under the k-nearest neighbor procedure (with k equal to 5), as this procedure has been shown to be more robust in the literature. Results are provided with the control group consisting of the national sample or the sample of households located in the regions where the evaluation survey was actually carried out, but differences are small between both sets of results.

The results suggest that the program was relatively effective in targeting the poor, given that an estimated 41.5 percent of the program beneficiaries appear to belong to the second poorest quintile of consumption, and another 28.5 percent appear to belong to the third quintile. Since 63.8 percent of the population is considered poor, participants belonging to the second and third quintile of the distribution of consumption per capita can be considered as poor. The program also reaches the poorest quintile, but to a lower extent, given that only 14.5 percent of program participants appear to belong to that quintile. Fewer participants appear to belong to the top two quintiles, and this result was found robust when using other matching techniques, as well as indicators directly based on observed asset indices (using factorial analysis). Thus, overall, probably more than 80 percent of program participants can be considered as being poor.

**Table 9. 2: Share of program participants by consumption quintile after matching procedure**

	National welfare quintiles			Target regions welfare quintiles		
	k-nearest neighbor	One on one	Kernel	k-nearest neighbor	One on one	Kernel
Poorest quintile	16.5	27.8	11.4	14.5	26.3	4.2
Q2	43.3	25.4	67.4	41.5	23.4	59.8
Q3	27.8	14.5	21.2	28.5	15.5	36.0
Q4	11.4	12.1	0.0	11.4	11.4	0.0
Richest quintile	1.0	20.2	0.0	4.1	23.5	0.0
All	100.0	100.0	100.0	100.0	100.0	100.0

Source: Authors' estimation.

A series of questions in the survey were used to assess the income gains of program participants thanks to the program. The key summary findings from this analysis are provided in table 3. The wage losses for program participants due to the fact that they may have had another paying job before the program, or that they may have needed to hire a worker to replace them in their previous occupation or to help for domestic work while they participated in the programs tend to be very small as compared to the incomes gained from program participants. Thus, wage substitution effects do not seem to play an important role in reducing the effectiveness of the program in generating higher additional income for the family, probably in part because there is a large mass of very low paid or unpaid workers in Liberia, so that those who take up a job with CfWTEP are unlikely to have had gainful employment as an alternative to program participation.

**Table 9. 3: Average wage losses and gains from CfWTEP per matched participant**

	Own salary Loss	Salary loss to hire worker	Salary loss to hire domestic worker	Total cost	Gain from CfWTEP
Poorest quintile	558	0	155	713	8638
Q2	414	21	76	510	8638
Q3	460	16	51	528	8640
Q4	477	77	11	565	8637
Richest quintile	125	0	0	125	8640
Total	455	22	74	551	8639

Source: Authors' estimation.

The estimates of the wage gains can then be used to assess poverty levels before and after program participation among participants, simply by considering that any additional wage gain or loss translates into an equivalent change in consumption level. As shown in table 4, the findings of the assessment suggest a substantial reduction in poverty with a drop in the headcount index (share of the population in poverty) of 8.6 percent from 74.1 percent before the program to 67.7 percent after the program among participants. The reductions in the poverty gap and squared poverty gap are also important (in proportionate terms, the reduction from the baseline is 27 percent for the poverty gap). Given that the program provides additional resources to households for a period of only two months, these impacts are substantial. They could be overestimated if we have not been able to assess wage losses from informal unpaid activities properly, but even if we were to account for higher wage losses or substitution effects, the program would still be rather efficient in increasing net wages as a proportion of the wages paid out to participants.

**Table 9. 4: Estimated impact on poverty among program participants**

	Headcount index	Poverty Gap	Squared Poverty Gap
Before the program	74.1	17.2	5.9
After the program	67.7	12.6	3.8

Source: Authors' estimation.

A series of questions on subjective perceptions regarding the program were also asked to program participants, the results of which are provided in table 5. Most participants declared that they acquired skills through the public works, and that they learned to be punctual. Participants were paid through local banks contracted to make the payments. Participants and implementers considered this a highly successful part of the program, and for most participants, this was their first contact with a bank. Participants were also issued a program identification card with which they were able to collect their payments. When possible, participants collected their pay at local bank branches; however, for more remote areas, the bank sent representatives to participating communities once a month to make payment, and the laminated ID could be used by participants for other purposes as well. The program budget also provided for the procurement of tools to be purchased through national competitive bidding. The types of tools provided depend on the type of work activity implemented in communities. If another project is implemented afterward in the same area, the tools are to be re-used for the subsequent project. But if no additional projects are planned for a given area, the tools can be handed over to local community structures to continue with similar activities or to the participants if no appropriate local community structure exists, which is an additional benefit appreciated by participants. While some participants experienced delays in being paid, this was limited to about a fifth of the participants.

**Table 9. 5: Subjective indicators of program quality among participants**

	Gender		Assignment				All
	Male	Female	Filling of potholes	Clearing of bush	Clearing debris	Other	Total
Has done type of work before	34.9	19.5	25	37.9	19.2	21.6	27.9
Has gained technical skills	74.4	77.5	74.5	75.6	75.4	79.8	75.8
Has learned to be punctual	95.8	97.2	95.4	96	96.7	98.5	96.4
Has learned through the program	81.6	84.1	85.9	81.7	83.7	79.3	82.7
Has gained skills helping later	75.1	79.8	75.7	74.5	79.3	82.7	77.2
Assignment was clear	87.1	88.3	82.9	84.4	89.9	99	87.6
Has worked too hard	13.8	12.2	15.9	13.9	9.9	15.1	13.1
Has paid a bribe	4.6	6.2	3.5	4.8	8.6	1	5.3
The salary was fair	86.8	89.2	84.7	85.9	93.2	85.1	87.9
Experience payment delays	21	18	13.4	24.4	11.1	35.1	19.6
Laminated ID first ID ever	66.6	67.8	66.1	72.1	63.6	61.3	67.1
Received a hand tool	11.1	6.9	5.3	14.8	5.1	6.8	9.2
Hand tool for practical use	9.9	5.6	4.9	12.9	4	5.9	7.9
First time business with a bank	93.3	94.3	95.4	95.5	95.2	81.7	93.8

Source: Authors' estimation.

Finally the results of the survey are encouraging regarding both the short- and long-term impact of the program on households through their expenditure choices for the additional income gained. As shown in table 6, as much as 30 percent of the income of participants was spent on education (this may have been influenced by the timing of the program, where most wages were paid when school fees were dues) and 25 percent on various types of investments. This suggests that the program is not only achieving short-term impacts, but is may also have some longer-term impacts on the targeted households. The relatively high share of the income used for education and investments is perhaps in part possible because of the wage rate of US\$3 a day, which may be considered high for an emergency program aiming to address food insecurity. Yet, given that the program only provides one single episode of employment to participants, a relatively high wage rate that allows not only for increased temporary consumptions but also some level of investment may be warranted, as discussed in more details below in section 2.3.

**Table 9. 6: Use of program income among participating households (share of funds)**

	Relation to head		Gender		All
	Self	Other member	Male	Female	Total
Education	31.2	30.2	32.4	29.3	31
Health care	8.5	8.3	8.1	8.8	8.4
Living expenses	28.8	25.3	27.4	28.5	28
Funeral	1.2	1.4	1.5	0.9	1.2
Celebration	0.7	2.2	1.2	0.9	1.1
Investment farm	8.3	8.1	7.3	9.4	8.2
Investment, non farm	6.5	4.3	7.3	4.5	6
Debt repayment	2.3	8	2.7	4.7	3.6
Transfer	1.1	2.2	1.4	1.3	1.3
Repairing the house	8.8	6.2	7.9	8.6	8.2
Acquiring household assets	2.7	3.6	2.7	3.1	2.9
Total	100	100	100	100	100

Source: Authors' estimation.



## 2.2 Cost-Effectiveness of CfWTEP

Based on the parameters estimated through the light evaluation survey, the program appears to be cost-effective, at least in terms of international comparators. This is due to its high labor intensity of activities, the relatively effective geographical and household level targeting of the poor (even if the extreme poor are less well covered), and the low foregone income from participation. To estimate more precisely the cost-effectiveness ratio or relative efficiency of converting program funding into net wage benefits for the poor, a simple methodology proposed by Ravallion (1999) can be used. Adapting slightly Ravallion's decomposition, assume that without public works, an individual has a probability  $F^*$  to find employment at market wage  $W^*$ . Expected earnings are  $F^*W^*$ . With public works, the individual earns the public works wage  $W$ . If the individual can continue to search for private or self-employment while participating in public works, with probability  $F$  of finding such employment, the expected wage with public works is  $FW^* + (1-F)W$ . The net wage benefit from the program for the worker is  $NWB = (1-F)W - (F^* - F)W^*$ . If the worker gets unemployment benefits or a subsistence allowance  $S$ , the wage benefit is reduced to  $NWB = (1-F)W - (F^* - F)W^* - (1-F^*)S$ . If the program costs  $G$  to the government per worker employed, a measure of cost effectiveness is the share of public expenditures transferred to workers as wage gain  $NWB/G$ . This measure is decomposed as:

$$\frac{NWB}{G} = \frac{C}{G} \frac{(W+L)}{C} \frac{W}{(W+L)} \frac{NWB}{W}$$

$\quad \quad \quad / \quad \quad | \quad \quad \backslash \quad \quad \backslash$   
*budget wage targeting proportionate*  
*leverage share performance wage gain*

The determinants of cost-effectiveness are a) the leverage ratio  $C/G$ , where  $C$  is the total cost per worker including community funding; b) the wage share  $(W+L)/C$ , where  $W$  stands for wages paid to the poor and  $L$  stands for leakage due to wages paid for the non-poor; c) the targeting performance  $W/(W+L)$  which is the percentage of wages reaching the poor; and d) the proportionate wage gain  $NWB/W$ . This model can be extended to take into account the benefits of the infrastructure built by public works, but these benefits tend not to be as immediate. Given that there is very limited budget leverage in Liberia, the calculation provided here is based on three of these four variables: the wage share, targeting performance, and proportional wage gain.

The first variable is the wage share, which is estimated using administrative data at 68 percent. This is relatively good by international standards. Other public works programs show wage shares of around 60 percent in India (National Rural Employment Guarantee Scheme), 70 percent in Korea's public works program, 85 percent in the Productive Safety Net Program in Ethiopia, 40-50 percent in Argentina's *Trabajar* Program, and 60-70 percent in Bangladesh's Food for Work Program. There are two caveats to this nevertheless. The first is that these programs are of a much larger scale than the program in Liberia. The second is that the government contribution in terms of project management in Liberia is very limited. This is important as in most other programs the cost of government officials managing the program is not fully factored into the project costs thus reducing the corresponding wage shares.

The second variable is the targeting performance, which is the proportion of the wages paid out that goes to poor workers. By using different matching approaches for analyzing the results of the quantitative survey, it was found that between 74 and 86 percent of program participants were considered as poor. We can thus assume a likely value for the targeting performance parameter of about 80 percent. This again compares fairly well with international experience. The Ethiopian Productive Safety Net Project was found to have 87 percent of its beneficiaries were among the target group, and the corresponding value was 70-80 percent for Argentina's *Trabajar*, but some other programs have been less successful in targeting the poor.

The third variable is the proportionate wage gain or share of the wages received by the poor that generate additional net income after taking into account foregone income. Because of the high wage paid and lack of other income opportunities in Liberia, the net wage gain for CfWTEP is very high. Approximately 75 percent of program participants had no other income or employment before the program and so the foregone earnings were very low. The net wage gain was found to be 93 percent. In comparison, in the India program mentioned earlier, the estimated proportionate wage gain was at 75 percent, and in Argentina the proportionate wage gain was only 50 percent as there were more work alternatives available.

Overall the cost-effectiveness of the program is the product of the wage share (.68) times the targeting performance (.80) times the proportionate wage gain (0.93), or 0.51. Thus the cost of transferring US\$1 in net wage benefit through CfWTEP is estimated at US\$1.96, which includes the US\$1 in net wage. A 0.51 overall cost-effectiveness is somewhat lower than for instance Ethiopia's PSNP where the cost-effectiveness of the wage transfer was about 0.55, but it is not common to observe cost-effectiveness of only one third, especially when targeting performance is limited. No data is available regarding the benefits of the infrastructure provided by CfWTEP, which could increase overall cost effectiveness by factoring in the benefits of such infrastructure gains. But given the relative effective targeting in the CfWTEP and the fact that projects are generally located within the communities participants are from, it can be assumed that a fair amount of the benefits from improved infrastructure accrue to the poor.

### **2.3 Discussion of the wage rate**

The program provides 40 days of employment to each participant and pays a daily wage of US\$3, resulting in a total transfer of US\$120 to each participant. While the program is relatively well targeted, the comparison of the wages paid to participants with the wages observed in the national 2007 CWIQ survey suggest that the wages paid to participants are relatively high, since the going rate for low-skill workers is closer to US\$1 a day. While it does make sense to pay program participants more than the going wage due to the fact that there are costs for workers to shift their employment towards CfWTEP, the premium paid by CfWTEP seems to be too high.

A number of considerations must be weighted regarding the possibility of changing the wage rate, as summarized in Table 7. One set of factors in deciding the wage rate is of a political nature. In particular, the Liberia Jobs and Opportunities Initiative launched in December 2009 by the government of Liberia is significant as it represents a commitment to prioritize employment creation from its own resources. This program pays a wage rate of US\$3 a day. The scheme plans to create 8,000 temporary jobs for youth. In considering the renewal and extension of CfWTEP for the coming few years, the appraisal team for the operation was strongly advised by the government and development partners to keep the temporary employment project aligned with the government's own initiatives in terms of wages paid to program participants. Furthermore, similar programs are also being implemented in Liberia by the World Food Program, United Nations Development Program, and United Nations Mission in Liberia and they are currently all paying a wage rate of US\$3 a day. If the extension CfWTEP were to be the only program paying less than US\$3 this could create difficulties with communities that may feel short-changed and may result in accusations of LACE holding back some of the funds due to the communities, thereby undermining the relationship between communities and the implementing agency.

**Table 9. 7: Arguments for and against Reducing the Wage Rate to US\$2.50**

	In Favor of Reducing Rate to US\$2.50	In Favor of Maintaining the Wage Rate at US\$3.00
Important Factors		
Political Economy		Could create tensions with other programs because of misaligned wage rates
Coverage	Under program expansion, 52,500 instead of 45,000 people could benefit	
Capacity		Weak local implementation capacity is a major challenge to expand the number of participants above the 45,000 target
Work outputs	17% more work could be executed by the project	
Impact on beneficiaries		Risk of slightly reduced ability of beneficiaries to invest
Less Important Factors		
Self-Targeting	Likely small improvement in targeting the extreme poor	
Labor Market Distortions	Wage substitution effect could be reduced slightly	
Program Cost-Effectiveness		Risk of small reduction in overall program cost-effectiveness

Source: Authors.

One potentially important reason for wages of these types of public works programs to be kept low is to enable the wage rate to function as a self-targeting mechanism. However, despite the relatively high wage rate in the CfWTEP the targeting performance was still found to be relatively effective. In fact, the CfWTEP did not rely on the wage rate as the primary targeting mechanism, rather on community involvement in the selection of participants, geographical targeting, and some eligibility criteria such as the condition of being unemployed. Under the CfWTEP this approach led close to 80 percent of program beneficiaries classified as poor. Lowering the wage rate to, say, US\$2.50 would probably not make the wage rate a much more effective targeting mechanism for reaching the extreme poor better, since it would still be above the market wage rate. Effective targeting thus will still primarily depend on the additional targeting and recruitment activities that are part of the project. From the perspective of improving the targeting therefore, setting the wage at either US\$2.50 or US\$3.00 is not critical.

Another factor often considered in keeping the wage rate low is the substitution effect and the possible impact on local wage rates. In some areas the high wage rate may encourage people to leave other activities to join the program as it is seen as more attractive. Furthermore, if the wage rate is much higher than local wage rate, it may also create an upward pressure on local wage rates, which may impact employers in the agricultural sector in particular. However, given the high degree of labor surplus in Liberia, and the limited size of the programs, these effects are expected to be limited. The results of the evaluation survey suggest that 76 percent of participants were either not active or unemployed prior to the program. Wage substitution effects were also found to be low. In addition, the program provides only a one-off opportunity to participants, as those who have previously participated are not be eligible to participate again if a second project is implemented in their community. This should limit the upward impact on overall wage levels because it does not increase the bargaining power of participants, as the program only provides an alternative to other employment on a once-off basis and for a limited duration.

If the wage rate were reduced to US\$2.50, a larger number of people would be reached by the program. Given the large number of poor people in Liberia and the relatively small percentage of the poor the program can reach, extending coverage as much as possible would be the more equitable approach to follow, so that this would be an argument in favor of reducing the wage rate to US\$2.50. Another argument in favor of reducing the wage rate would be the fact that the total infrastructure outputs of the program would increase. Approximately 17 percent more tasks would be completed by reducing the wage rate to US\$ 2.50, resulting in more streets being cleaned, drains cleared, potholes filled, etc. On the other hand, one argument against increasing the number of beneficiaries by reducing the wage rate is the weak in-country capacity to implement larger scale development projects. It is currently expected that there would be a scaling up the current CfWTEP in its next phase from 17,000 beneficiaries in two years to 45,000 people in three years. In addition, a non-cognitive skills training module will be added to the program, which may be quite a challenge to implement well. Increasing the number of beneficiaries even further to 52,500 under a lower wage rate may be difficult given the country context and the fact that scaling-up capacity is something difficult to achieve in Liberia.

The assessments done to date on the CfWTEP do indicate that even though the transfer is of a short-term duration, many participants were also able to use their income for investments such as education, farm inputs, household assets, home improvements, or entry into informal economic activities. Their ability to do so is at least partially due to the relatively high wage rate. It could perhaps be expected that reducing the wage rate would reduce the ability of participants to make investments in two ways. Firstly, one could expect that a lower percentage of participants would be able to use the income to make investments, although this effect may be limited as it has been found that in other programs where the wage rate was much lower, people were still able to make some investments. The more significant impact would probably be on the actual size of the investments and the percentage of total income actually used for investment, although the impact would be limited if the reduction in the wage rate would itself be limited.

Reducing the wage rate could also have an impact on the program cost-effectiveness. As discussed earlier, the cost-effectiveness of the program is estimated to be such that it costs US\$1.96, including the wage to transfer US\$1 to a poor person. If the wage rate were reduced, the net wage gain of the program could potentially also be reduced which in turn would reduce the cost-effectiveness. The wage share might decrease slightly, but the targeting effectiveness could increase slightly. Overall, the cost-effectiveness of the program could be reduced slightly, perhaps to 0.50 increasing the cost of transferring US\$1 to a poor person to US\$2. On the other hand, given that the program is essentially a once-off transfer as participants are not allowed to participate more than once, the argument in favor of reducing the wage level is less strong.

### **3. Conclusion**

The assessment of CfWTEP is overall positive. A number of characteristics of the program, some of which were not discussed for lack of space, are summarized in table 8. While the program scores well, or at least fairly in most dimensions identified in table 8, it performs poorly only in terms of one dimension, that of the wage rate. The option of reducing the wage rate to increase the coverage of the program for the same overall budget was carefully considered, including in terms of the local political economy setting. A major issue is that other programs including those funded by the government tend to pay a rate of US\$3.00 a day. Reducing the wage rate for CfWTEP would thus create a misalignment between this project and other similar projects operating in Liberia and could create significant tensions, especially at the community level. This misalignment could result in accusation by communities that part of their wages are being unfairly withheld, an accusation that could seriously undermine program implementation. Moreover, while there could be a benefit in reducing the wage rate in order to achieve higher coverage of participants, capacity could become a major implementation constraint. Providing work to 8,500 participants a year under the current program was a challenge, and under the

planned expansion of the program, the number of jobs provided per year could reach 15,000 with the current wage of US\$3.00 a day. Reducing the wage would lead, under the planned budget envelope, to an even larger of jobs to be provided, which could be challenging for LACE and the local NGOs supporting the program. These factors led to the decision to keep the wage rate constant in the future phase of the program, despite some of the costs in doing so.

**Table 9. 8: Overall Assessment of CfWTEP Performance**

Best-Practice Design Feature	CfWTEP Performance
Wage rate no higher than prevailing market wage for unskilled manual labor	Poor – Wage rates are higher than the prevailing market wage rate. Yet, given the size of the program and the Liberian conditions, the risks of negatively impacting the local labor market are very small.
Restrictions on eligibility should be avoided	Fair – There are few restrictions for participation but given that the wage rate cannot be used as an effective targeting mechanism, screening processes to identify the most vulnerable are applied
Program should be targeted to poor areas, as indicated by a credible "poverty map"	Good - Program is geographically targeted based on the number of extreme poor in all counties
The labor intensity (share of wage bill in total cost) should be as high as possible	Good – Program will achieve 72% labor intensity, which compares well with other programs
Assets created are of maximum value to poor people in those areas. Any assets that largely benefit the non-poor should require co-financing from the beneficiaries	Good – Program focuses on maintenance of assets but they were generally located within poor communities and work activities were generally identified by the communities themselves
Public works should be synchronized to the timing of agricultural slack seasons	Fair – There are practical difficulties with this approach as the slack season (hungry season as referred to in Liberia) coincides with the peak of the rainy season when project implementation is difficult
Encourage female participation. Women can benefit from piece rates or task-based wages; sometimes wages in the form of food have attracted more women to work sites. Provision of childcare can improve female participation.	Fair – Female participation will be around 50%, current restrictions on the participation of pregnant women will be lifted and childcare services will be considered.
Transaction costs to the poor are kept low— one important means to accomplish this is through locating project sites close to villages.	Excellent – Projects are all located within walking distance of communities.
To ensure appropriate mediation of NGOs for protecting the rights of the poor <i>vis -à-vis</i> program managers	Good – Program is implemented by strong local NGOs that have demonstrably paid adequate attention to the needs of the poor
The program should focus on asset maintenance	Good – Program focuses almost exclusively on the maintenance of assets

Source: Adapted from Ravallion (1999) and Subbarao (1997).

The overall positive assessment of CfWTEP has contributed to the joint decision by the World Bank and the government of Liberia to expand the program further. In this conclusion, we would like to share some of the decisions that were made for this new project. The project, which will start in 2010 for a period of two years, will be named the Liberia Youth, Employment, Skills (YES) project and it will be financed with a Sector Investment Loan for a total value of US\$16.0 million. The proposed project will aim to create additional short-term jobs for the youth, but in addition it will finance demand-driven skills development programs serving the informal and formal economy, and lay the foundations of a stronger and demand-driven institutional framework for technical and vocational education and training (TVET).

The new project will aim to be catalytic to the larger poverty reduction strategy of the country in various ways. First, the project will aim to create additional income opportunities, in particular for the youth and through active mobilization of communities. It is envisaged that temporary jobs will help mitigate the impact of the current financial and economic global crisis and its repercussions on the poorest segments of society. It also will help mitigate the risk of social unrest resulting from frustration over prolonged unemployment. In this regard, the project will help to extend the window of stability that is required for other elements of the broader poverty reduction strategy to succeed in demonstrating expected peace dividends. Second, the project will provide poor and young Liberians with second chance opportunity to get trained and acquire some basic and non-cognitive skills. In the medium term, this should help increase earnings and labor productivity, which remain low compared with other countries in the region. In line with the country's National Capacity Development Strategy, the project will also support the design and launching of a new institutional framework for TVET.

The public works component of the program will account for US\$8.5 million of the total grant provided to the country with the goal of engaging 45,000 Liberians in temporary employment with a particular emphasis on targeting youth at risk. It will also include a training component, with a focus on a non-cognitive skills module to reinforce basic life skills and workforce readiness behaviors provided by the overall experience of participating in the public works activities. The proposed design is to add one day of training in non-cognitive skills during each week of work. This time will be paid at the same wage as a working day. The training will be linked as much as possible to the experience beneficiaries have during the project, including modules on basic work-related behaviors, attitudes in the workplace, and simple concepts of punctuality, professionalism, respect, and teamwork. The training will also include sessions on identity, highlighting self-awareness, social service, civic engagement, and budgeting and managing money. The latter session would be held in conjunction with participant payments.

Public works activities carried out under CfWTEP focused on brushing feeder roads, collecting waste, rehabilitating farmland, and small repairs of roads. Under the new project, the aim will be to increase community participation in project selection to ensure that projects respond to community needs. This will be done by improving monitoring and reporting activities, including increased work supervision, by focusing on these issues in the first training module of the program and by providing additional support to local implementers. Additionally, if the government or other partners, including LACE under its other projects, can supply required material inputs, the project activities could also include other activities building useful and long-lasting social assets such as planting trees, replacement or laying culverts, painting public buildings and street walls (particularly needed after the rainy season), painting cross walks, and small rehabilitation of schools, health posts, community centers, and public markets.

Efforts to reach out to youth will be strengthened, given that young Liberians comprise 75 percent of the population and form the backbone of future economic and social growth. Their participation, involvement, improvement of skills, community socialization, and participation in community services and the creation of local useful social assets is a meaningful instrument of empowerment and inclusion. This can lead to increased participation of the youth in peaceful and constructive social and economic dynamics, diverting them from non-constructive and even destructive and violent options. The targeting of youth under CfWTEP was mixed and results differed among counties. On average almost 60 percent of the participants were less than 35 years old. Recognizing the predominately youth focus of the project, the new project will stipulate that at least 75 percent of the participants will be younger than 35 years old.

As of February 2010, CfWTEP has exceeded its target of at least 30 percent participation by women with approximately 45 percent of participants being female. The new Liberia YES Project will set a target of 50 percent participation by women. Provisions will be made for women with small children to participate. If there are two or more women on a project with small children who have been selected, one woman will be tasked with looking after these small

children, while the other(s) will then be able to work. The woman looking after the children will be paid the same rate as the other unskilled workers on the project. Liberia's new labor law (currently in draft) is expected to prohibit the exclusion of pregnant women from the workforce with a provision that pregnant women be assigned appropriate duties. To anticipate this change, pregnant women will be eligible to participate in the new public works scheme, a change from the participant requirements under CfWTEP. It will be the responsibility of NGOs supporting project implementation to ensure that pregnant women are assigned appropriate tasks for their condition.

The activities undertaken in the new project will be similar to CfWTEP, with the main requirements of activities being that they are highly labor-intensive and beneficial to the community. The activities and their locale will be determined in consultation with county officials and local communities. Possible activities include: Clearing of brush along roads or on non-private agricultural land (or for any other purpose that would serve a community or public need); Rock breaking for the roads; Cleaning of culverts; Clearing drains along roads; Filling of potholes and erosion gullies; Improving walking paths and trails, constructing steps and railing on steep sections; and Cleaning and sweeping streets and other public spaces like markets, recreational spaces, and schools yards. In addition, if required, material inputs would be provided by the government, LACE and its other programs, or other agencies. Activities may also include: Planting trees; Replacing or laying culverts; Painting public buildings and street walls (particularly needed after the rainy season); Painting cross walks; and Small rehabilitation of schools, health posts, community centers, and public markets. Many of these activities, which are normally considered part of standard rehabilitation and maintenance, have not been undertaken in Liberia because of lack of funding or institutional structures to manage such activities.

## References

Adato, M., and L. Haddad, 2002, Targeting Poverty through Community-Based public Works Programmes: Experience from South Africa, *Journal of Development Studies* 38(3): 1-36.

Andrews, C., P. Backiny-Yetna, E. Garin, E. Weedon, Q. Wodon, and G. Zampaglione, 2011, Liberia's Cash for Work Temporary Employment Project: Responding to crisis in low-income, fragile countries, in Q. Wodon, editor, *Poverty and Policy Response to the Economic Crisis in Liberia*, Africa Region Working paper No. 131, The World Bank, Washington, DC.

Backiny-Yetna, P. and Q. Wodon, 2011, Measuring the Impact of Labor Intensive Public Works Using a Light Evaluation Survey, mimeo, World Bank, Washington, DC.

Backiny-Yetna, P., Q. Wodon, and G. Zampaglione, 2011, Impact of Labor Intensive Public Works in Liberia: Results from a Light Evaluation Survey, in Q. Wodon, editor, *Poverty and Policy Response to the Economic Crisis in Liberia*, Africa Region Working paper No. 131, The World Bank, Washington, DC.

Backiny-Yetna, P., R. Mungai, C. Tsimpo, and Q. Wodon, 2011, Poverty in Liberia: Level, Profile, and Determinants, in Q. Wodon, editor, *Poverty and Policy Response to the Economic Crisis in Liberia*, Africa Region Working paper No. 131, The World Bank, Washington, DC.

Coady, D., M. Grosh, and J. Hoddinott, 2003, *Targeting of Transfers in Developing Countries: Review of Lessons and Experience*, Regional and Sectoral Studies, World Bank, Washington, DC.

Food and Agriculture Organization of the United Nations, 2008, *The State of Food Security in the World 2008*, Food and Agriculture Organization Rome, Italy.

Government of Liberia and United Nations Joint Report, 2010, *The State of Food and Nutrition Security in Liberia: Comprehensive Food Security and Nutrition Survey*, Monrovia.

Grosh, M., C Del Ninno, E Tesliuc and A Ouerghi, 2008, *For Protection and Promotion: The Design and Implementation of Effective Safety Nets*, The World Bank, Washington DC.

Iacus, S., King, G., and G. Porro, 2009, Causal Inference Without Balance Checking: Coarsened Exact Matching, Mimeo, Harvard University.

Ivanic, M and W. Martin, 2008, Implications of Higher Global food Prices for Poverty in Low-Income Countries, *Agricultural Economics* 39: 405-416.

King, G., and E. Stuart, 2007, Matching as Nonparametric Preprocessing for Reducing Model Dependence in Parametric Causal Inference, *Political Analysis* 15: 199-236.

Making Enterprises Inc., 2010, Liberia Cash for Work Temporary Employment Project: A Qualitative Assessment, mimeo, Monrovia.

Ministry of Agriculture of the Republic of Liberia, 2007, *Comprehensive Assessment of the Agriculture sector in Liberia*, Volume 1: Synthesis Report, Monrovia.

Republic of Liberia, 2006, *Comprehensive Food Security and nutrition Survey (CFSNS)*, Monrovia.

Republic of Liberia, 2008, *Poverty Reduction Strategy*, Monrovia.

Ravallion, M., 1999, Appraising Workfare, *World Bank Research Observer*, 14: 31-48.

Richards, P., S. Archibald, B. Bruce, W. Modad, E. Mulbah, T. Varpilah, and J. Vincent, 2005, *Community Cohesion in Liberia: A Post-War Rapid Social Assessment*, Social development Paper, Conflict Prevention and Reconstruction No. 21, World Bank, Washington, DC.

Subbarao, K., 2003, Systemic Shocks and Social Protection: Role and Effectiveness of Public Works Programs, Social Protection Discussion Paper No. 302, World Bank

Schubert, B., 2008, Social Protection Issues in Liberia, mimeo, Inter-Agency Programming Team of the United Nations.

Teklu, T., and S. Asefa, 1997, Factors Affecting Employment Choice in a Labor-Intensive Public Works Scheme in Rural Botswana, *Economic Development and Cultural Change* 46(1): 175-86.

Teklu, T., and S. Asefa, 1999, Who Participates in Labor-Intensive Public Works in Sub-Saharan Africa? Evidence from Rural Botswana and Kenya, *World Development* 27(2): 431-38.

Tsimpo, C., and Q. Wodon, 2011, Rice Prices and Poverty in Liberia, in Q. Wodon, editor, *Poverty and Policy Response to the Economic Crisis in Liberia*, Africa Region Working paper No. 131, The World Bank, Washington, DC.



Tsimpo, C., and Q. Wodon, 2011b, Benefit Incidence of Personal Income Tax Reform in Liberia, in Q. Wodon, editor, *Poverty and Policy Response to the Economic Crisis in Liberia*, Africa Region Working paper No. 131, The World Bank, Washington, DC.

United Nations Joint Assessment, 2008, The Impact of High Prices on Food Security in Liberia, mimeo, Monrovia.

Wodon, Q., C. Tsimpo, P. Backiny-Yetna, G. Joseph, F. Adoho, and H. Coulombe, 2008, Potential Impact of Higher Food Prices on Poverty: Summary Estimates for a Dozen West and Central African Countries, Policy Research Working Paper 4745, World Bank, Washington, DC.

Wodon, Q., and H. Zaman, 2010, Higher Food Prices in Sub-Saharan Africa: Poverty Impact and Policy Responses, *World Bank Research Observer*, 25: 157-176.

World Bank, 2009, *Liberia: Employment and Pro-Poor Growth*, Report No. 51924-LR, Washington, DC.

World Bank, 2010, *Project Appraisal Document on a Proposed Grant in the Amount of US\$16.0 Million from the Africa Catalytic Growth fund (US\$10.0 Million) and the Crisis Response Window (US\$6.0 Million) to the Government of Liberia for the Liberia Youth, Employment, Skills Project*, Report No. 53626-LR, Washington, DC.